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S. HRG. 117–889, PT. 1

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

HEARINGS

BEFORE THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

ON

S. 2792

TO AUTHORIZE APPROPRIATIONS FOR FISCAL YEAR 2022 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. INDO-PACIFIC COMMAND
U.S. SOUTHERN COMMAND AND U.S. NORTHERN COMMAND
U.S. SPECIAL OPERATIONS COMMAND AND U.S. CYBER COMMAND
U.S. EUROPEAN COMMAND AND U.S. TRANSPORTATION COMMAND
U.S. STRATEGIC COMMAND AND U.S. SPACE COMMAND
U.S. CENTRAL COMMAND AND U.S. AFRICA CAMMAND
DEPARTMENT OF DEFENSE BUDGET POSTURE
ARMY POSTURE
AIR FORCE POSTURE
NAVY POSTURE
THE DEPARTMENT OF ENERGY AND NATIONAL NUCLEAR SECURITY ADMINISTRATIONON ATOMIC ENERGY DEFENSE ACTIVITIES

MARCH 9, 16, 25; APRIL 13, 20, 22; JUNE 10, 15, 17, 22, 24, 2021



Printed for the use of the Committee on Armed Services

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM—Part 1

U.S. INDO-PACIFIC COMMAND ● U.S. SOUTHERN COMMAND AND U.S. NORTHERN COMMAND ● U.S. SPECIAL OPERATIONS COMMAND AND U.S. CYBER COMMAND ● U.S. EUROPEAN COMMAND AND U.S. TRANSPORTATION COMMAND ● U.S. STRATEGIC COMMAND AND U.S. SPACE COMMAND ● U.S. CENTRAL COMMAND AND U.S. AFRICA CAMMAND ● DEPARTMENT OF DEFENSE BUDGET POSTURE ● ARMY POSTURE ● AIR FORCE POSTURE ● NAVY POSTURE ● THE DEPARTMENT OF ENERGY AND NATIONAL NUCLEAR SECURITY ADMINISTRATIONON ATOMIC ENERGY DEFENSE ACTIVITIES

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U.S. GOVERNMENT PUBLISHING OFFICE

56–721 PDF WASHINGTON : 2026

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DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, MARCH 9, 2021

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

UNITED STATES INDO–PACIFIC COMMAND

The Committee met, pursuant to notice, at 9:30 a.m. in room SD–G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Peters, Manchin, Duckworth, Rosen, Kelly, Wicker, Fischer, Cotton, Ernst, Tillis, Sullivan, Cramer, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. Let me call the hearing to order.

This morning the Committee will receive testimony from Admiral Davidson, the Commander of the United States Indo-Pacific Command. Admiral, I understand this is likely to be your last appearance before the Committee prior to your retirement, and I want to thank you and your family for your decades of service to the country. We also ask that you extend our thanks and gratitude to the men and women under your command who each day sacrifice and serve the Nation. Thank you very much, sir, for your distinguished service.

Due to the coronavirus pandemic, you have not appeared before the Committee since February 2019. There have been many regional developments since that time, and we look forward to your updates.

At his confirmation hearing, Secretary Austin accurately described China as the "pacing threat" for the Department of Defense (DOD). Under President Xi Jinping, China has moved away from greater integration with the liberal world order and instead created a style of authoritarian capitalism that it now seeks to export throughout the region and the world. Additionally, China seeks to co-opt into national institutions or create parallel organizations to supports its strategic interests.

The challenges posed by China require a truly whole-of-government approach, but the Department of Defense and Indo-Pacific

Command (INDOPACOM), in particular, play a key role in seeking to deter increasingly aggressive behavior by the Chinese military.

China seeks to use its superior military power to suppress smaller countries' sovereignty claims in key regions. Nowhere is this more evident than in the South China Sea, which is why international freedom of navigation operations, including regular passage by United States warships through strategic waterways, are essential for maintaining internationally recognized transit routes and pushing back against China's excessive claims.

Recognizing the challenges posed by China, on February 10th, President Biden announced the establishment of a China task force to examine the Department's strategy, operational concepts, technology and force structure, posture, intelligence, United States alliances and partnerships, and other matters relating to China. Admiral Davidson, I look forward to hearing your thoughts on this task force and the wide range of issues it is considering.

Deterrence is key to avoiding an unnecessary and costly armed conflict with China. Unfortunately, as has been widely recognized by national security leaders and scholars alike, the foundations of United States deterrence in the Indo-Pacific have steadily eroded over time. That is why this Committee led the way in the creation of the Pacific Defense Initiative, or PDI, in last year's National Defense Authorization Act (NDAA). We created the PDI to better focus DOD resources on key military capabilities necessary to deter China, reassure United States allies and partners, and send a strong signal to the Chinese Communist Party that we are committed to defending United States interests in the Indo-Pacific. Maintaining momentum behind the PDI will be a key focus of this Committee as we begin work on this year's NDAA. Admiral Davidson, we look forward to hearing your assessment of the PDI, how it is being implemented, and what additional requirements you have identified for the upcoming fiscal year and beyond.

At the same time, we must guard against treating the Chinese People's Liberation Army (PLA) and China as ten feet tall. As an emerging power, China faces a number of challenges that it must contend with, both domestically and internationally. Deterring aggressive military action should certainly be our objective, but we must also seek to exploit China's weaknesses in other areas, including by exposing its suppression of human rights at home and lack of alliances and partners abroad. The world is rightly alarmed by Chinese human rights abuses and threats to democratic movement.

Earlier this year, the State Department appropriately labeled the wide-scale abuse of Uyghur and other predominantly Muslim ethnic minorities by Chinese security forces as a genocide. Additionally, Chinese anti-democratic crackdown in Hong Kong signals an increasing willingness by the Chinese Communist Party to impose its will through force. These actions, coupled with continued rhetoric and aggressive military exercises directed at Taiwan, should give us pause.

While I expect to hear separately from the Commander of United States Forces Korea in a few weeks, it is important to note the near-term threat posed by North Korea to the region, and potentially the United States. Many observers believe Kim Jong Un may

seek to test the Biden administration with provocative actions in the coming weeks or months. The challenge posed by North Korea can only be addressed through a unified strategy with our allies, and particularly with South Korea and Japan.

We must also seek to coordinate, to the extent possible, with China, if possible, and that is something we should investigate. Admiral Davidson, I look forward to hearing your assessment of the security situation in the Korean Peninsula and your assessment of what more can be done to effect a change in North Korea's course.

Perhaps most importantly, our network of regional allies and partners is critical to confronting the challenges posed by China and North Korea. The Biden administration is rightly focused on re-invigorating our alliances with Japan, South Korea, Australia, the Philippines, and Thailand. These alliances certainly are not without challenges but remain indispensable to our efforts to ensure a stable and open Indo-Pacific region. At the same time, we must continue growing sustainable partnerships with India, Indonesia, Singapore, Vietnam, and others. These allies and partners are our comparative advantage in the region and will be critical to protecting and advancing our collective interests in the coming years.

I would also like to take a moment to stress my concern about the recent military coup and ongoing violent security crackdown in Myanmar. President Biden has made clear that respect for human rights will be a centerpiece of United States foreign policy, and I strongly support efforts to achieve a return to democratic governance, peace, and rule of law in Myanmar as soon as possible.

Finally, the ongoing coronavirus pandemic and climate change will continue to shape INDOPACOM's operations in the region and engagement with partners and allies for the foreseeable future. We are interested in hearing more about how each of these challenges is impacting INDOPACOM activities in the region today and how you are working to prepare the command to better prepare and address them in the future.

Again, Admiral Davidson, thank you for your service, and we look forward to your testimony.

Senator Wicker, please.

STATEMENT OF SENATOR ROGER F. WICKER

Senator WICKER. Thank you, Mr. Chairman. Admiral Davidson, Senator Inhofe has duties in Oklahoma this morning and wanted me to enter a statement on his behalf. He also wants me to thank you for your decades of service and leadership that you have provided for the Department of Defense, and also to observe that this may be your last appearance before the Committee. From my standpoint, I hate to see you go, and I think these will be big shoes to fill.

This is Senator Inhofe's statement:

The Senate Armed Services Committee's top priority over the last 3 years has been to ensure the effective implementation of the National Defense Strategy (NDS). To implement the NDS, Secretary Austin and Deputy Secretary Hicks said China is the pacing threat for the Department of Defense, and General Milley said the Pacific is the number one regional priority for the United States

military. Competition with China is our top focus and has overwhelming bipartisan support.

As Commander of INDOPACOM, you are on the front lines of military competition with China. Your job is to ensure that there never comes a day when the Chinese Communist Party leadership concludes it can achieve its goals through the use of military force.

However, even with the progress our military has made over the past 4 years to rebuild readiness, the reality is that the conventional military balance of power in the Indo-Pacific is getting worse, not better. General McMaster told us last week that since the Cold War, China has undertaken the largest peacetime military buildup in history.

At the same time, America grew more complacent. For example, under Obama, from 2010 to 2015, while Chinese military spending grew by 83 percent, we decreased our military spending by 25 percent. As China invested in military capabilities, many Americans naively assumed that China's entry into the World Trade Organization (WTO) and the global integration of its economy would somehow make the Chinese Communist Party more friendly and open to the West.

The result now is America's military advantage and the credibility of our deterrent is eroding. That is why the 2021 NDAA was the toughest bill on China ever, with several national security committees involved, and that is specifically why this Committee put the Pacific Deterrence Initiative, or PDI, into last year's NDAA, to stop aggression from the Chinese Communist Party.

In Europe we have made a lot of progress on posture through the European Defense Initiative, or EDI, by investing over $20 billion in the last 5 years. We need to apply a similar level of focus, effort, and resources to our posture in the Pacific through PDI. We know we need advanced capabilities like hypersonics and artificial intelligence (AI), but that is not enough. It is clear we need the right posture to ensure our forces can be in the right place, at the right time, with the right stuff. This is what PDI was designed to accomplish.

In reading your assessment of what we need PDI to do, some other focus areas include integrated air and missile defense, hardened and dispersed bases, expanded training ranges, improved joint exercise, and increased security cooperation with the allies and partners. Admiral Davidson, we hope you will expand on this today and give us details of exactly what you need and where we must invest.

It is a dangerous time in the world but especially in the Indo-Pacific. For example, at last week's hearing, General McMaster told us that "Taiwan may represent the most dangerous flashpoint for war." That is a quote. Admiral Davidson, we must win this competition for the security of our Nation as well as our partners and allies.

I look forward to hearing from you about strengthening deterrents and regaining the advantage in the Indo-Pacific. So thank you very much for your attendance and your leadership and your great service to the United States of America, and thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Wicker.

Admiral Davidson, you are recognized for your testimony.

STATEMENT OF ADMIRAL PHILIP S. DAVIDSON, USN, COMMANDER, UNITED STATES INDO–PACIFIC COMMAND

Admiral DAVIDSON. Chairman Reed, Senator Wicker, distinguished Members of the Committee, thank you for the opportunity to appear before you to discuss the Indo-Pacific region today.

Today I am joined by Indo-Pacific Command's senior enlisted advisor, Command Sergeant Major Shane Shorter, a Special Forces warrior with decades of experience in the Indo-Pacific Theater, operating and training alongside our most critical allies and partners.

I can report that Indo-Pacific Command is laser-focused on the Secretary of Defense's immediate five priorities, beginning with the initiatives centered on the health and well-being of our people. Indeed, investing in our most critical and resilient resource, our people, is a national security imperative.

For the past 12 months, we have worked to support the protection and sustainment of our Joint Force readiness while mitigating the effects of the COVID–19 pandemic. Additionally, our team has worked extensively with local, state, and national leadership to help defeat the disease and minimize the impact on our ability to perform our missions. We also remain deeply focused on cultivating a safe environment for our DOD professionals to learn, to thrive, to execute their mission, and to fulfill their oath to the Constitution.

In doing so, we must also work to eliminate sexual assault, sexual harassment, racism, and extremism, which have no place within our ranks. Such abhorrent behaviors are inconsistent with our values and the principles we are sworn to defend. Our greatest military strength is our people. Therefore, operating in an environment free of discrimination, free of hate or harassment, while accomplishing our mission, is paramount to our success. Indeed, it is paramount to ensuring we can accomplish our mission to meet the greatest challenges of the 21st century.

The Indo-Pacific is the most consequential region for America's future and remains the United States' priority theater. The region itself contains four of the five priority security challenges identified by the Department of Defense—China, Russia, North Korea, as well as violent extremist organizations. The Indo-Pacific region also experiences frequent natural and man-made disasters—the negative impacts of climate change, rapid population growth, drugs and human trafficking, and, of course, disease and pandemics.

That said, the region accounts for 60 percent of the world's current gross domestic product, and it contributes more than two-thirds to the present global economic growth. In 10 years, the region will host two-thirds of the world's population and two-thirds of the global economy.

Our nation's vision for a free and open Indo-Pacific serves as an important reminder to all nations that the United States remains committed to free, fair, and reciprocal trade, shared access to global markets, good governance, and human rights and civil liberties.

Now, if you would, let me focus my remarks on the greatest long-term strategic threat to security in the 21st century, China. In stark contrast to our free and open vision, the Communist Party

of China promotes a closed and an authoritarian system through internal oppression and external aggression. China's pernicious approach to the region includes a whole-of-party effort to coerce, corrupt, and collapse governments, businesses, organizations, and the people of the Indo-Pacific.

As China continues to increase the size of the People's Liberation Army and advance their own joint capabilities, the military balance in the Indo-Pacific is becoming more unfavorable for the United States and our allies. With this imbalance, we are accumulating risk that may embolden China to unilaterally change the status quo before our forces may be able to deliver an effective response.

The greatest danger the United States and our allies face in the region is the erosion of conventional deterrents, vis-á-vis the People's Republic of China. Absent a convincing deterrent, China will be emboldened to continue to take action to supplant the established rules-based international order and the values represented in our vision for a free and open Indo-Pacific.

Our deterrence posture in the Indo-Pacific must demonstrate the capability, the capacity, and the will to convince Beijing, unequivocally, the costs of achieving their objections by the use of military force are simply too high. Indeed, we must be doing everything possible to deter conflict. Our number one job is to keep the peace, but we absolutely must be prepared to fight and win should competition turn to conflict.

I want to thank this Committee for your deep commitment to defending United States values and interests in the Indo-Pacific through your efforts to establish the ground-breaking Pacific Deterrence Initiative, or PDI. PDI provides the foundation for establishing a forward-deployed, defense in-depth posture that defends the U.S. Homeland and our interests abroad, deters aggression, assures our allies and partners, and provides the flexible response options should deterrence fail.

So on behalf of the men and women of the United States Indo-Pacific Command, I thank you for your time today, for your continued support, and for your desire to improve the prosperity and security of the Indo-Pacific, indeed, the most critical region on the planet. Thank you.

[The prepared statement of Admiral Davidson follows:]

PREPARED STATEMENT BY ADMIRAL PHILIP S. DAVIDSON

INTRODUCTION

Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee, thank you for the opportunity to appear before you to discuss the Indo-Pacific Region. The Indo-Pacific is the most consequential region for America's future and remains the Department of Defense's priority theater. This region contains four of the five priority security challenges identified by the Department of Defense and includes frequent natural and man-made disasters, the negative impacts of climate change, rapid population growth, and of course, disease and pandemics.

The Indo-Pacific accounts for 60 percent of the world's current Gross Domestic Product (GDP) and contributes more than two-thirds to the present global economic growth. Trade and investment in this dynamic region are vital to the security and prosperity of the United States and reflective in more than $1.9 trillion in two-way trade with the Association of Southeast Asian Nations (ASEAN), serving as the number one destination for United States foreign direct investment (FDI). In 10 years, the region will host two-thirds of the world's population and two-thirds of the global economy.

Our Nation's vision for peace and prosperity in a Free and Open Indo-Pacific continues to resonate in the region and serves as an important reminder to all nations that the United States remains committed to free and fair trade, shared access to global markets, good governance, and human rights and civil liberties. The region's economic prosperity and security are inextricably linked and part of the competitive landscape.

The greatest danger for the United States in this competition is the erosion of conventional deterrence. A combat-credible, conventional deterrent posture is necessary to prevent conflict, protect U.S. interests, and to assure our allies and partners. Absent a convincing deterrent, the People's Republic of China (PRC) will be emboldened to take action to undermine the rules-based international order and the values represented in our vision for a Free and Open Indo-Pacific. The combination of the PRC's military modernization program and willingness to intimidate its neighbors through the use, or threatened use of force, undermines peace, security, and prosperity in the region.

United States Indo-Pacific Command's approach for addressing Great Power Competition centers on advancing a Free and Open Indo-Pacific by focusing on four critical areas:

1. Increasing Joint Force Lethality
2. Enhancing Design and Posture
3. Strengthening Allies and Partners
4. Modernizing our Exercises, Experimentation, and Innovation Programs

In 2019, I reported to this Committee we had lost a quantitative advantage and our qualitative advantage was shrinking across several domains as the People's Liberation Army (PLA) fields higher quality systems.

However, with this Committee's efforts to establish the Pacific Deterrence Initiative (PDI), along with resourcing our advanced undersea warfare capabilities and 5th generation fighters, I am optimistic you have created the opportunity to Regain the Advantage, but we must remain diligent. PDI provides the foundation for establishing a forward-deployed, defense-in-depth posture that defends our interests abroad, deters aggression, assures allies and partners, and provides flexible response options should deterrence fail. PDI also provides the requisite budget transparency and oversight to ensure resources are prioritized appropriately. Thank you for your continued support.

On top of PDI support, investing in our most critical and resilient resource—our people—is a national security imperative. USINDOPACOM is staunchly committed to promoting the health and well-being of our teammates. In addition to providing necessary warfighting tools, we remain deeply focused on cultivating a safe environment for our DOD professionals to thrive, execute their mission, and fulfill their oath to the Constitution. We must take deliberate action to protect and sustain the force to meet the demands of strategic competition. Indeed, our Defense-wide priorities—dedicated to combating COVID–19, extremism, and sexual assault and sexual harassment within our force—are at the foundation of our efforts to Regain the Advantage.

For the past twelve months, protecting and sustaining joint force readiness began with our efforts to mitigate the effects of the COVID–19 pandemic. We have worked extensively with the local, state, and national leadership to combat this contagion and successfully minimized the impact on USINDOPACOM's ability to perform its mission in the short term. However, COVID–19 has had a moderate effect on the readiness and budgets of our allies and partners. We will continue to support their efforts to maintain readiness and minimize any further negative impact.

USINDOPACOM conducted a Headquarters-wide Stand-Down to address extremism within the ranks of our force in line with guidance from the Secretary of Defense (18 Feb). The program included virtual training modules featuring subject matter experts, presentations by our most senior leaders, and facilitated small-group discussions to build awareness and help prevent actions associated with extremist behaviors that go against the fundamental principles of our oath. The message provided a clear reminder that we are required to obey all lawful orders, support civil authorities to protect lives and property, and ensure public safety in accordance with the law. There is more to be done in our endeavor to eradicate extremism and the corrosive impact it has on our entire force. The senior leaders at USINDOPACOM will continue to host regular one-on-one listening sessions with volunteers from across the Headquarters to perpetuate this meaningful dialogue. We will capitalize on well-established, routine activities to broadly and frequently communicate/interact with our workforce to better educate our team about the scope of this problem and to develop sustainable solutions. Indeed, operating in an environment free of discrimination, hate, and harassment while accomplishing our mission is paramount to our success.

USINDOPACOM is fully committed to the prevention of sexual assault and sexual harassment—something we absolutely must get right and cannot afford to fail. Over the past 3 years, we have improved our sexual assault and sexual harassment prevention efforts through a number of initiatives based on feedback received from several Command-wide surveys. To fully back-up this leadership imperative, I committed Headquarters resources and established a fully dedicated, on-site Sexual Assault Prevention Response (SAPR) program and a newly created Equal Opportunity (EO)/Equal Employment Opportunity (EEO) program. This novel approach is unique to USINDOPACOM and it transforms the traditional design—which relies on individual services to provide external SAPR and EO/EEO support to combatant command personnel—into a more immediate, more insightful, and more involved response mechanism. As a result of these initiatives, we have built trust, credibility, and awareness in these vital programs throughout the Headquarters. We continue to seek every opportunity to combat, prevent, and eliminate sexual assault, harassment, and violence to keep safe all those who keep America safe.

For the future, combat credible deterrence depends on our ability to achieve four specific outcomes: 1) develop an agile and distributed Joint Force designed to deter and deny our adversaries of their objectives in the first and second island chains; 2) regain positional advantage by evolving our posture and balancing key capabilities across South Asia, Southeast Asia, and Oceania resulting in a more dynamic and distributed presence; 3) establish a network of compatible and interoperable allies and partners who are willing and able to protect their sovereignty from coercion; and 4) reassure our allies and partners of our commitment by revealing the capacity to conduct complex operations and concealing capabilities that provide a decisive advantage. A strategy of deterrence supported by a command climate that places the dignity and respect of each individual as a vital aspect in how we train, maintain, and sustain the force is an imperative for the Joint Force's ability to deploy and perform assigned missions.

INCREASE JOINT FORCE LETHALITY

Integrated Air and Missile Defense

For the past 3 years, I have repeatedly stated the most important action we can take to increase the joint force's lethality is to introduce a 360-degree, persistent, air and missile defense capability on Guam (Guam Defense System (GDS)). This system and the associated architecture must be robust enough to address the emerging threats, including hypersonics and the ability to integrate existing weapon control systems within this decade.

The GDS could be established cost effectively with mature Programs of Records consisting of Aegis Baseline (B/L) 10, solid-state radar (SPY–6 or SPY–7 variant), MK–41 VLS, Aegis Ashore, and SM3/SM6. This system is critical for defending the Homeland, including our most important American operating location in the western Pacific. America's day begins in Guam, and it is not only a location we must fight-from, but one we must also fight-for given the threats we face in the near term and the foreseeable future.

NDAA–2016 directed the Missile Defense Agency (MDA), Army, and Navy to evaluate Aegis Ashore (A.A.) capabilities and costs worldwide to provide the Homeland's adequate protection. The MDA report identified several Indo-Pacific locations where fixed and persistent integrated air and missile defense (IAMD) are desired. Of the four sites identified, one is a test site (Hawaii), two are facilities in Japan, and the fourth site is Guam.

Any recommendations for additional studies, including a requirement for only mobile systems, disregard the immediacy and complexity of the threat (2026) and the absolute need to integrate fires across the region from a forward multi-domain command and control node west of the International Date Line (IDL).

The GDS would provide a foundation for a joint solution to this warfighting problem. No individual service can include decentralized architecture, automated processes using standard fire control functions across the Joint Force, and a force-wide perspective in managing resources. In January 2021, the MDA was directed by the Office of the Secretary of Defense to reprogram up to $29 million in fiscal year 2021 RDT&E funding to begin the architecture design for the GDS. The critical metric of success is the ability to shrink the decision-to-execution cycle for U.S. Forces fighting inside—or close to—the enemy's traditional safe-havens, thus improving the joint force's survivability.

The Army's Integrated Air and Missile Defense Battle Command System (IBCS) and the Air Force's Advanced Battle Management System (ABMS) are not yet fully developed and do not currently enable joint interdependencies or satisfy the requirement to integrate fires across domains, services, or weapon platforms.

Funding provided by Congress in 2021 for Homeland Defense Radar-Hawaii as a fixed sensor capability supports the best-programmed solution to enable a credible, in-depth, under layer defense for our forces in Hawaii. This perspective is consistent with independent assessments from the MDA and supported by U.S. Northern Command (NORTHCOM) and requires sustained funding throughout the FYDP.

The persistent Tactical Multi-Mission Over-the-Horizon Radar (TACMOR), located in Palau will dramatically increase our air domain awareness by providing persistent, long-range, detect and track capability of air and surface targets in the western Pacific and increase our ability to "shoot the archers."

Long Range Precision Strike

In addition to Homeland defense in Hawaii and Guam, USINDOPACOM requires highly survivable, precision-strike fires featuring increased quantities of ground-based missiles and improved air and long-range naval fires capable of ranges over 500 km. These fires must be supported by electronic warfare, space, cyber, and over-the-horizon radar capabilities. They must also be operationally decentralized and geographically distributed to provide a credible, offensive, and conventional deterrent to assure U.S. freedom of action.

Our adversaries continue to field advanced Anti-Access Area Denial (A2AD) systems, aircraft, ships, space, and cyber capabilities that threaten the U.S. ability to project power into the region. Increasing joint force lethality means developing and fielding systems and capabilities to ensure U.S. freedom of action or access to vital waterways and airspace, while preserving our critical asymmetrical advantages to deter aggression and prevail in armed conflict should deterrence fail.

Joint Fires Network

The advances being made in long-range, precision fires are significant and will require an integrated cross-service/cross-system network architecture to exploit the full spectrum of capability these programs provide the Joint Force. The desired end state is a combined/joint-integrated environment where ubiquitous battle management and automated engagement decision-making using standard target, track-quality, control functions, and a joint force approach for managing weapons resources can occur.

A network of sensors that fuse information using actionable and distributed fire control data must support Integrated Air Missile Defense (IAMD) and long-range, precision-strike weapons systems. This Joint Fires Network enables any sensor from any platform (air, land, sea, space, and cyberspace) to provide targeting guidance to any weapon.

USINDOPACOM requires a warfighting architecture that fuses the maritime, land, air, cyber, and space domains to enable timely and actionable delivery of our emerging weapons. This capability, coupled with the lethality of current and future munitions, underpins conventional deterrence and provides the Joint Force with the necessary distributed lethality to maintain combat credibility in a contested environment.

ENHANCE FORCE DESIGN AND POSTURE

Our enhanced force design must enable the convergence of capabilities from multiple domains, and our posture must create the virtues of mass without the vulnerability of concentration. This scenario is accomplished by distributing a forward-deployed, joint force across the battlespace while balancing lethality and survivability. It requires a deterrent posture that possesses the sustainment and force protection to be resilient, survivable, and supportable.

Persistent presence through forward-based and rotational joint forces is the most credible way to demonstrate our commitment and resolve to potential adversaries while simultaneously assuring allies and partners.

A force posture and joint force laydown west of the IDL correctly positioned to defend in-depth while possessing the capabilities and authorities is needed to decisively respond to contingencies across the region. More distributed combat power increases survivability, reduces risk, and ensures our ability to Fight and Win.

Infrastructure projects must enhance resilience and support multi-domain, joint operations vice service-prioritized activities. U.S. ground formations must have long-range weapons in the western Pacific to include SM6 and Maritime Strike Tomahawk. Additionally, the Army and Marine Corps should employ High Mobility Artillery Rocket System (HIMARs) outfitted with Precision Strike Missiles (PSM) and Naval Strike Missiles (NSM) specifically for the Army and Marine Corps, respectively.

The ability to deploy an integrated Joint Force capable of employing the full spectrum of capabilities across all domains remains the joint requirement. The repo-

sitioning of Marines from Okinawa, Japan is ongoing and must ensure a preponderance of combat power remains west of the IDL. Continuing the Defense Posture Realignment Initiative (DPRI), while understanding how USMC modernization will affect its foundations, should proceed without delaying execution based on the dynamic nature of the theater.

Additionally, forward-based air and naval forces need to be able to disperse to expeditionary airfields and ports as part of a distributed force posture. This requires adequate command and control, munitions, and fuel distribution to create temporary windows of localized air and maritime superiority to enable maneuver, while amphibious and ground forces create and exploit temporal and geographic opportunities to impose costs.

The critical investments necessary to provide adequate dispersion to preserve deterrence options include:

- *United States Territories.* Key strategic locations to project power, deter adversaries, and respond to crises across the Indo-Pacific. Investments are focused on divert and dispersal locations as part of a distributed joint force laydown and new training facilities.
- *Oceania and the Pacific Island Countries (PIC).* Investments focused on alternative facilities for training and dispersion opportunities that increase airpower capacity.
- *Southeast Asia.* Investments focused on alternative facilities to support modernized and dispersed power projection airfields, sustain forward forces, and enhance logistics capability with prepositioned stores and infrastructure.

These specific requirements are outlined in USINDOPACOM's Independent Assessment directed by the Committee report accompanying Section 1251 of NDAA–21.

STRENGTHENING ALLIES AND ENHANCING PARTNERS

Strong alliances and partnerships represent the most essential components of U.S. national power beyond our Nation's economic and military strength. One of the significant advantages these relationships provide is a common foundation based on the core principles of a Free and Open Indo-Pacific. This foundation fosters long-term mutual trust, understanding, respect, interoperability, information sharing, and a common view of the regional security landscape.

Our relationships are the building blocks for establishing an enhanced, networked security architecture that promotes interoperability and coordination from the strategic to tactical levels. The critical investments necessary to strengthen our alliances and enhance our partnerships to enable this increased interoperability include:

- *Mission Partner Environment (MPE).* In fiscal year 2021, PDI authorized $50M as the critical investment for providing resilient and redundant joint/multinational command and control that delivers the same functionality of a data center and hosts multiple, unique mission sets. MPE provides universal battle management and automated decision-making by accessing a multi-domain sensor network. This environment uses cloud-based technologies, integrated systems, and secure access controls to command, control, and communications (C3).
- *Fusion Centers.* In fiscal year 2021, PDI authorized $2M for partial funding of the fusion centers needed to improve information sharing and build trust. We are amplifying these resources to one of three fusion centers identified by USINDOPACOM as part of Regain the Advantage. Each of these fusion centers is a crucial enabler for strengthening our alliances, enhancing partnerships, and utilize MPE for contextual analytics and computing model assessments to extrapolate conclusions and identify patterns of life associated with transnational threats and other pernicious behavior.
  - *Southeast Asia (Counter Terrorism Information Facility, CTIF),* hosted by Singapore, represents USINDOPACOM's first participation in an operational partnership in Southeast Asia to identify trends and anomalies that could lead to a terrorist event or other transnational threat. The multi-lateral facility has commenced operations and has brought together like-minded countries to share information and provide early warning, monitoring and analysis capabilities in a centralized and coordinated manner.
  - *Indo-Pacific Maritime Coordination.* Navy is exploring additional concepts with allies and key partners to increase situational awareness in the maritime domain across the Indo-Pacific and Indian Oceans.
  - *Oceania Fusion Center* represents an initiative to provide Pacific Island nations, including the Freely Associated States—the Republic of Palau, the Federated States of Micronesia (FSM), and the Republic of the Marshall Islands

(RMI)—a means to improve common understanding of challenges such as climate change; illegal, unregulated, and unreported (IUU) fishing; transnational crime; and other specific Oceania-based challenges.

For almost 36 months, I have spent much of my time focused on strengthening our current alliances and enhancing our emerging partnerships across the region. This effort begins with the five bilateral treaty alliances where we have mutual defense responsibilities:

- *Japan.* The United States-Japan Alliance is the cornerstone of peace and prosperity in the Indo-Pacific Region. The alliance reassures the region by setting the example through our operations and collaborative efforts to build partnership capacity with other like-minded partners. As the most recent National Defense Program Guidelines (NDPG) indicate, Japan has embarked on expanding its military capabilities to better align United States and Japanese defense strategies by liberalizing rules for military equipment export, expanding the scope of possible Self Defense Force (SDF) missions to facilitate integration and interoperability, and advancing the DPRI. Increased defense spending purchasing some of our most advanced systems is a clear indication Japan seeks to improve its national defense posture and the United States-Japan alliance.
- *Republic of Korea (ROK).* The United States and ROK alliance remains the linchpin in maintaining a stable, security environment and ready to address the North Korean regime's threats. The ROK's purchase of advanced platforms and munitions, such as F–35A, Global Hawk, P–8A, and upgraded PAC–3 missiles improves our combined interoperability and enhances ROK's defense posture. Seoul has made progress toward transitioning wartime operational control (OPCON) to a Future-Combined Forces Command led by a ROK Commander. The United States and ROK are currently addressing a lapse in the Special Measures Agreement (SMA), which we expect to be finalized in the near term. The lack of an SMA negatively impacts USFK's ability to "fight tonight."
- *Australia.* Australia is a critical ally, partner, and leader contributing to international efforts promoting a Free and Open Indo-Pacific. Australia actively supports U.N. Security Council Resolution (UNSCR) enforcement operations to curb illicit North Korean activity while making substantial efforts to improve relations with India and increase engagement to build open and resilient societies in ASEAN. Under its "Pacific Step-Up" policy, Australia is enhancing its assistance and infrastructure investments in Fiji, Papua New Guinea, and the Solomon Islands. They also assist the United States in maintaining a strong force posture, hosting the seventh Marine Rotational Force-Darwin (MRF–D) deployment and Enhanced Air Cooperation, where we reached the agreed upon deployment number in 2019 (2500) and a reduced target in 2020 (1290) due to COVID–19. This has provided the U.S. Marine Corps opportunities to train and integrate while displaying significant combat power west of the IDL. In July 2020, Canberra released two major national security documents that complement U.S. national security objectives: the 2020 Defence Strategic Update and the 2020 Force Structure Plan. Along with the subsequent release of the classified Defence Planning Guidance, these documents confirm our strategic alignment, highlight the challenges in competition, and place greater emphasis on deterrence across the Indo-Pacific.
- *The Philippines.* The Republic of the Philippines remains a strategic treaty ally and partner. The Government of the Philippines' decision to temporarily suspend the termination of the Visiting Forces Agreement (VFA) presents opportunities to address mutual concerns and reinvigorate joint and interoperability training opportunities as we seek full reversal of the VFA termination process, which would facilitate deeper military cooperation and integration. The AFP is committed to investing in high-quality U.S. defense equipment as they modernize their force and conclude a General Security of Military Information Agreement (GSOMIA). The Philippines are partnered with the Guam and Hawaii National Guards in the State Partnership Program.
- *Thailand.* The United States-Thai alliance has the opportunity to expand in substantial ways since a democratically elected government took seat in 2019, as outlined in the United States-Thai co-signed "Joint Vision 2020." To modernize its force, Thailand has purchased more than $2.5 billion in United States foreign military sales with over 200 active foreign military sales cases. Additionally, the reinstatement of international military education and training funding (IMET) encourages increased mil-mil engagements as our militaries train and exercise side-by-side. Our exercise program provides an opportunity to explore new access agreements as part of our bilateral and multilateral exercises such as COBRA GOLD, HANUMAN GUARDIAN, COPE TIGER, and Cooperation Afloat Readiness and Training (CARAT). Even during COVID–19, U.S. Army

Pacific (USARPAC) conducted Exercise COBRA GOLD 2020 supporting readiness training for approximately 6,560 U.S. troops along with 26 participating nations. Thailand is also partnered with the Washington State National Guard in the State Partnership Program.

Enhancing multilateralism is a critical aspect of USINDOPACOM's engagement in the region. We operate with Australia and Japan extensively during multilateral exercises and are working diligently to expand this collaboration to other like-minded nations to increase their level of interoperability and cooperation.

We also continue to advance strategic partnerships with India and Singapore:

- *India.* The current state of the United States-India relations presents a historic opportunity to deepen ties and solidify what I consider the "defining partnership of the 21st century."We concluded several agreements, including the Communications Compatibility and Security Agreement (COMCASA) in 2018, which has greatly enhanced information sharing and interoperability; the Industrial Security Annex (ISA), signed in December 2019 that allows for the transfer of technologies in support of defense production; the Basic Exchange and Cooperation Agreement (BECA) to share unclassified geospatial information; and the agreement on Navy-to-Navy Information Sharing in October 2020. The United States and Indian navies are now securely sharing information, and India has substantially increased its acquisition of United States defense equipment. Defense sales are at an all-time high with India operating United States-sourced platforms such as P–8s, C–130Js, C–17s, AH–64s, CH–47s, Precision Guided-Excalibur Munitions, and M777 howitzers. In February, India agreed to acquire Apache and MH–60R multi-mission helicopters worth $3.1 billion and is considering other United States systems. The United States strongly supports India's establishment of an information fusion center focusing on maritime domain awareness, which will improve maritime security in the Indian Ocean Region and Bay of Bengal. USINDOPACOM defines the security relationship with India as a strategic imperative. We expect substantial progress on interoperability and information sharing, service-level and joint military-to-military cooperation and exercises like TIGER TRIUMPH and MALABAR, and an increase in quadrilateral collaboration between India, Australia, Japan, and the United States as the relationship continues to mature.
- *Singapore.* Military to military relations with Singapore are excellent, with an average of 300 Distinguished Visitor engagements and 40 operations, activities, and investments (OAIs) taking place annually. Over the last 20 years, no other Southeast Asian country has done more to facilitate United States presence in the region. In December 2019, the United States and Singapore announced the establishment of a permanent Republic of Singapore Air Force (RSAF) fighter detachment on Guam and foreign military sales exceeding $7 billion, including Singapore's request to purchase F–35s. Singapore and the United States worked together multilaterally with five other ASEAN nations, Australia and New Zealand, to establish a fusion center focused on countering terrorism. In 2019, the United States and Singapore reinforced their commitment to this partnership when they renewed the Memorandum of Understanding regarding Facilities' Use in Singapore. The combination of continued support for a United States presence in Southeast Asia, a deep and broad defense relationship based on shared principles, and a strong desire for continued defense diplomacy enables the United States and Singapore to focus on shared regional challenges.

Other Indo-Pacific Nations (Canada, New Zealand, United Kingdom, France). USINDOPACOM is working with the FVEY–Plus (United Kingdom, Australia, Canada, New Zealand, and France) to explore how we can build on bilateral and multilateral relationships to align our various efforts to assist Oceania in addressing the transnational challenges that present a significant threat to their way of life.

- *Canada.* Canadian policy in the Indo-Pacific focuses on expanding cooperation and partnership building throughout the region. Through consistent engagement with its regional partners and allies, Canada is advancing relationships in the region, especially with the other FVEY–Plus construct participants to assist in Oceania and Vietnam. Ongoing support and troop contributions to the Republic of Korea and North Korea-focused UNSCR enforcement operations remain priorities for Ottawa.
- *New Zealand (N.Z.).* New Zealand remains a steadfast and key partner that continues to increase investment, foreign assistance, and infrastructure support in the South Pacific. Wellington's "Pacific Reset" policy highlights a reinvigorated focus in the Southwest Pacific. These efforts provide valuable leadership and expertise to the region. New Zealand also provides ongoing support to North Korea-focused UNSC Reinforcement operations in the region. We are

committed to deepening our partnership to advance the vision for a Free and Open Indo-Pacific.

- *United Kingdom (U.K.).* The U.K. remains committed to the region as a champion of the Free and Open Indo-Pacific. They continue to sustain a healthy defense posture in the region, having renewed the Brunei Garrison Agreement to maintain around 700troops in the Sultanate (at H.M. Sultan's expense) since September 2019 and establishing a Royal Navy presence with HMS *Enterprise.* The U.K. also continues to be a primary contributor of personnel and assets for North Korea-focused UNSC Reinforcement operations. This year, the U.K. will deploy a Carrier Strike Task Group spearheaded by its new aircraft carrier, HMS *Queen Elizabeth,* with United States Marine Corps F–35s embarked, joining an international group of ships that includes the Five Eyes Defense Arrangement, Netherlands, Denmark, Japan, Republic of Korea, and Indonesia.
- *France.* France has increased operational activities across the Indo-Pacific under their own Indo-Pacific strategy emphasizing rule of law and freedom of movement. It is a pivotal contributor to FVEY–Plus multilateral efforts on IUU fishing; drug and human trafficking; and community resilience related to natural disasters and climate change. France maintains an active role in regional security, protecting fisheries, and countering transnational crimes, including narcotics destined for Australia and New Zealand. Additionally, France exercises and operates in the South China Sea and supports North Korea-focused UNSCR enforcement activities.
- *Germany.* In 2020 Germany adopted new guidelines for engagement in the Indo-Pacific region. These guidelines include a willingness to support the international rules-based order. In the most visible demonstration of this commitment, the German Ministry of Defense announced the 2021 to 2022 deployment of a German frigate to the region. This frigate will support UNSCR sanction enforcement activities against North Korea and cooperate with the United States Navy.
- *Oceania.* Oceania is critical to ensuring a Free and Open Indo-Pacific, as it contains strategic sea lines of communication linking us with our allies and partners in the Oceania region and Asia. We prioritized key leader engagements during the pandemic to offer assistance to Pacific Island Countries (PICs) and ensure coordination on pressing challenges including IUU fishing; drug and human trafficking; addressing the effects of climate change; natural disasters; and a range of health issues that plague these nations. We have also used security cooperation programs, such as Woman, Peace, and Security (WPS) assistance, to build resilience across the region. In contrast, the PRC is actively engaged in coercive economic and diplomatic tactics in Oceania. These predatory activities undermine good governance and promote corruption. While we continue to strengthen our bilateral relationships with countries that have militaries (Fiji, Tonga, and Papua New Guinea), our engagement begins with the Freely Associated States (FAS)—the Federated States of Micronesia (FSM), the Republic of the Marshall Islands (RMI), and the Republic of Palau (heretofore Palau), with which the United States has signed Compacts of Free Association (COFA). We are also working on an additional multilateral effort with like-minded nations (FVEY, France, and Japan) to synchronize and improve the alignment of our security cooperation efforts across Oceania.
- *Compacts of Free Association.* The FAS are small island countries located along our strategic lines of communication and are critically important to the U.S. ability to project power, sustain forward presence, conduct commercial trade, defend the Homeland, and ensure access. The 2019 meeting between the United States President and the Presidents of Palau, Marshall Islands, and the Federated States of Micronesia, and the subsequent visits by several cabinet members and senior United States officials to these countries, demonstrate the importance our Government places on these relationships and our commitment to greater cooperation to ensure a Free and Open Indo-Pacific.
- *Papua New Guinea (PNG).* USINDOPACOM's engagement with PNG improves regional posture and demonstrates the U.S. commitment to the region. PNG plans to grow its defense force from 3,600 troops to an end strength of 10,000 by 2030. The USINDOPACOM team and State Partnership Program (SPP) partner (Wisconsin National Guard) will help the PNGDF achieve this goal by identifying force development, enlisted training, and education opportunities.
- *Fiji.* We are expanding the defense relationship with Fiji through exercises, ship visits, defense dialogues, and the ongoing discussions with the Nevada National Guard to formalize a State Partnership Program relationship. United States and Fijian forces are collaborating with Australia and New Zealand to develop the Black Rock Integrated Peacekeeping Center to help advance the capabilities

of Fiji's armed forces. United States support to Fiji includes helping to build a more capable, resilient force by supporting the State Department's provision of Foreign Military Financing (FMF) for small patrol boats and dive equipment. Additionally, DOD established two seats each at West Point and Annapolis for Fijian candidates, expanded the Defense Attaché Office and the Office of Defense Coordination in Suva, and added a Ministry of Defense Advisor. In 2019, USINDOPACOM hosted a defense dialogue with Fiji in Suva to solidify our defense relationships and provide guidance for security cooperation efforts over the next 5 years. In 2020, Fiji co-hosted the USINDOPACOM Chief of Defense (CHOD) Conference, held virtually, and will co-host the 2021 CHOD Conference in Suva.

- *Tonga.* In 2019, USINDOPACOM hosted the first formal Trilateral Defense Talks between the United States, Tonga, and Fiji. Both Tonga and Fiji expressed a clear desire for increased United States engagement tailored to their needs, scaled to their capacity, and coordinated with Australia and New Zealand. Tonga is partnered with the Nevada National Guard in the State Partnership Program.
- *Southeast Asia.* We must strengthen the region's ability to deny adversaries' attempts to dominate or disrupt the gateway between the Pacific and Indian Oceans. The DOD defines Southeast Asia as the ten Association of Southeast Asian Nations (ASEAN) member states, plus Timor Leste. The ASEAN member states under Brunei's leadership in 2021 continue to seek ways to improve multilateral security engagements and advance stability in the Indo-Pacific. USINDOPACOM participates in ASEAN exercises, key leader engagements, and practical multilateral cooperation related to the spectrum of shared transnational challenges such as the ASEAN–United States Maritime Exercise conducted in 2019. USINDOPACOM also co-chairs, along with Thailand, the ASEAN Defense Ministers' Meeting-Plus Experts' Working Group on Maritime Security from 2020 through 2023. We continue to express our concern over the PRC's pressure on ASEAN members to conclude negotiations on the Code of Conduct in the South China Sea in a way that contradicts international law and accedes to Beijing's territorial and maritime claims, and pressures ASEAN member states to limit activities with third-country partners. We are working with the State Department on the United States-Mekong Partnership to address environmental degradation and the related concerns with water and food insecurity caused by upstream damming operations. Our engagement with Southeast Asia and with ASEAN strengthens relationships and conveys the United States' commitment to the region.
- *Burma.* The United States stands firmly with the people of Burma in their aspirations for democracy, peace, and respect for human rights. We are alarmed regarding the military's coup against the democratically elected government in Burma, and the detention of State Counsellor Aung San Suu Kyi, President Win Myint, and other government officials, as well as political leaders, journalists, human rights activists, and members of civil society. Prior to the military coup, USINDOPACOM had minimal interaction with Burma's military due to a number of restrictions based on Burma's human rights record, and USINDOPACOM will continue to monitor the developing situation, and specifically how the Burma military responds to the peaceful protests.
- *Indonesia.* Indonesia's status as the globe's third-largest democracy, the world's largest Muslim population, the fourth most populous country, and its significant economy all underscore its essential role in the regional security architecture. USINDOPACOM is committed to enhancing its partnership with Indonesia through robust exercise and training programs that take advantage of our shared interests and common platforms. We continue to support the Indonesian military's focus on external threats to national defense, particularly maritime domain awareness and security regarding Beijing's excessive maritime claims around Natuna Island. USINDOPACOM is well-positioned to support increased demand for enhanced military-to-military bilateral cooperation and emerging multilateral training opportunities in 2021. Indonesia is partnered with the Hawaii National Guard in the State Partnership Program.
- *Laos.* After decades of stagnation in the bilateral relationship following the Vietnam War, we have seen some signs of progress since the United States and Laos signed a Comprehensive Partnership. Engagements focus on unexploded ordnance clearance, POW/MIA recovery, and military medicine. Laos actively supports the DPAA in the search for 286 missing United States servicemembers to conclude war legacy issues honorably, and aims to address unexploded ordnance issues by 2030. In October 2020, the United States Government delivered Laos' first FMF case for field ambulances, building trust and confidence in the

relationship. To continue building trust, we will focus on English language training and work to expand security cooperation.

- *Malaysia.* Last year marked our 35th iteration of the Bilateral Training and Consultative Group discussions between USINDOPACOM and the Malaysian Armed Forces (MAF). This forum continues to serve as the bedrock for security cooperation between our two militaries. USINDOPACOM continues to execute essential exercise and training opportunities with Malaysia. We have a robust security cooperation relationship with over $850 million in ongoing U.S. foreign military sales cases. USINDOPACOM engagements in Malaysia focus on maritime security, counterterrorism, Humanitarian Assistance / Disaster Relief (HA/DR), peacekeeping, transnational crime and border protection, and educational exchanges such as the International Military Education and Training program (IMET). We support OSD and the Malaysian Ministry of Defense's effort to develop a Memorandum on Defense Cooperation and future opportunities to support the new administration's security priorities. Malaysia is partnered with the Washington State National Guard in the State Partnership Program.
- *Cambodia.* In early 2017, Cambodia suspended all military-to-military exercises with the United States. However, USINDOPACOM continues to cooperate in: humanitarian mine clearance actions, medical research, and MIA personnel accounting engagements through the DPAA. During these limited engagements, the command reaffirms the importance of Cambodia strengthening its democratic institutions and maintaining an independent foreign policy. In September 2020, Cambodia razed a United States-built facility on Ream Naval Base that served as the headquarters for the National Committee on Maritime Security, reportedly in order to make way for a PRC naval base. The United States and other countries in the region are concerned about the expansion of PRC influence in Cambodia and its implication for regional security.
- *Vietnam.* USINDOPACOM's defense partnership with the Vietnamese military is among the most substantial aspects of our growing bilateral relationship. In 2019, USINDOPACOM and the Vietnam Ministry of National Defense (MND) agreed to renew our terms of reference; update our 2011 Memorandum of Understanding; and finalize negotiations for our GSOMIA. Our military-to-military engagements prioritize enhancing Vietnam's maritime capacity to include the delivery of 24 Metal Shark boats, the upcoming delivery of the Scan Eagle unmanned aerial system, and the imminent completion of the Region 3 Coast Guard center. Vietnam sent a cadet to the Air Force Academy who will graduate in 2024 as the first-ever Vietnamese cadet to attend a Service Academy. Vietnam shares our concern with PRC actions in the South China Sea, and remains a vocal supporter of United States Freedom of Navigation operations. Vietnam is partnered with the Oregon National Guard in the State Partnership Program.
- *Timor-Leste.* While not a part of ASEAN, Timor-Leste remains strategically located as a bridge between Southeast Asia and the Pacific. The Government of Timor-Leste has formally requested United States co-development of Baucau Airfield, which will offer the opportunity to build partner capacity with Timor-Leste to support its nascent air component and maritime security capabilities. To date, funding for project scoping, approval, and global training and equipment has been allocated to support the completion of minor improvements. Timor-Leste was selected for the State Partnership Program and is assisted by the Rhode Island National Guard. The SPP will help Timor-Leste build capacity to address transnational threats and counterterrorism, as well as help them to provide maritime security, and deliver HA/DR.
- *Northeast Asia.* Northeast Asia continues to benefit from long-term economic growth, and this prosperity remains dependent upon free trade, free navigation, and open communication. At the same time, Northeast Asia is at a crossroads where historical and geopolitical forces weigh on mutual security cooperation. As the region becomes more stable, we will encourage Japan and South Korea to take a more significant role in the alliances related to their security and contribute to the broader security efforts across the Indo-Pacific region.
- *Mongolia.* Mongolia is a strong partner and contributor to United States regional and global policy objectives. Mongolia supports missions in Afghanistan and other regions of the world through United Nations Peace Keeping Operations (UNPKO), making Mongolia a model for emerging democratic countries that want to be more active globally. Ulaanbaatar's "Third Neighbor Policy" intends to balance Russian and PRC influence by developing relationships with the United States and other like-minded countries. In the past two decades, more than 50 percent of Mongolia's senior leadership attended International Military Education and Training courses creating an influential cadre of United

States educated officers. USINDOPACOM components and Mongolia held inaugural Land Forces Talks and Airman-to-Airman Talks, while also developing a five-year security cooperation plan. The United States is helping Mongolia improve its special operations forces, peacekeeping operations, and air mobility. Mongolia is partnered with the Alaska National Guard in the State Partnership Program.

- *Taiwan.* The United States and Taiwan maintain a substantive relationship consistent with the One China Policy, based on the Taiwan Relations Act (TRA), three United States-China Joint Communiques, and the Six Assurances. Taiwan's values reflect our own—an open economy with a free and democratic society that respects human rights and the rule of law. The United States continues to support the peaceful resolution of cross-Strait issues in a manner consistent with the wishes and best interests of the people of Taiwan. The United States provides Taiwan defense articles and services in such quantity to allow Taiwan to main sufficient self-defense capabilities—-and in a manner commensurate with the threat that Taiwan faces. To help accomplish this, USINDOPACOM focuses on improving the Taiwan military's joint interoperability, training, readiness, and professional development. Beijing is pushing across the globe to diplomatically isolate, economically constrain, and militarily threaten Taiwan. Taiwan has only fifteen diplomatic partners remaining, recently losing Kiribati and Solomon Islands in 2019. General Secretary Xi Jinping's 2019 New Year's speech made it clear that Beijing is focused on achieving unification as a part of the PRC's national plan of rejuvenation, stating "We do not promise to renounce the use of force and reserve the option to use all necessary measures." The United States has a deep and abiding interest in peace and stability in the Taiwan Strait and welcomes steps from the PRC to reduce tensions and improve cross-Strait relations. The cross-Strait situation is of increasing concern given the harsh rhetoric from Beijing toward Taipei. Taiwan is strengthening its reserve forces and continues to fund foreign and indigenous acquisition programs and near-term training and readiness.
- *South Asia.* USINDOPACOM's goal in South Asia is to identify and seize opportunities to broaden critical partnerships and ensure that shared domains remain free of coercion and open to all. In conjunction with India's contributions to regional security and the free and open international-based order, United States actions are aimed to prevent adversaries from establishing an adequate military presence in the Indian Ocean Region (IOR) and the Bay of Bengal.

USINDOPACOM will continue to help these nations develop economically, resist threats to their sovereign interests, provide sufficient security to their land borders and maritime boundaries, and contribute to global peace and stability.

- *Bangladesh.* Bangladesh is an important security partner with the potential to enhance regional stability and advance United States interests in South Asia on maritime security, counterterrorism, HA/DR, and support to UNPKO. Over the past decade, steady and significant economic growth has enabled more foreign military sales as it pursues middle-income status by 2024. Transnational terrorism and crime remain internal security issues, as evidenced by five ISIS-claimed IED attacks in 2019. In August 2019, Bangladesh took receipt of the first of five C–130J aircraft from the United Kingdom. Bangladesh also signaled its interest in buying advanced United States military aircraft in the near future. Over the next year, there is potential to expand United States-Bangladesh maritime security cooperation through navy-to-navy engagement and security cooperation programs that enhance Bangladesh's maritime domain awareness. We intend to deepen our interoperability with Bangladesh once our two countries move forward on two important foundational agreements: a General Security of Military Intelligence Agreement (GSOMIA) and an Acquisition and Cross Services Agreement (ACSA). These would strengthen our bilateral relationship, deepen defense cooperation, and generate opportunities for interoperability. Bangladesh is partnered with the Oregon National Guard in the State Partnership Program.
- *The Maldives.* The Maldives sits along crucial sea lines of communication. A highly dispersed population spread across 200 islands and an immense exclusive economic zone (twice the size of California) make the Maldives vulnerable to transnational threats and illicit trafficking. The United States executed nascent security cooperation activities and engagements with the Maldives from 2015 to 2018, and the PRC substantially increased economic and security investments during this time. The Solih Government is a strong supporter of upholding the international rules-based order and desires improved relations with the United States, especially related to addressing transnational crime. USINDOPACOM's areas of interest for engagement include counterterrorism,

maritime domain awareness, IUU fishing, counternarcotics, and combatting human trafficking. In September 2020, we signed the "Framework for United States Department of Defense-Maldives Ministry of Defense and Security Relationship" setting forth both countries' intent to deepen engagement and cooperation in support of maintaining peace and security in the Indian Ocean. The most significant United States-Maldives military interaction occurs during the Joint Combined Exchange Trainings that take place twice a year to enhance Maldives' ability to respond to terrorism.

- *Nepal.* The United States maintains a robust and growing relationship with Nepal's security apparatus. Internal unrest continues, owing in part to unresolved grievances from the 1996 to 2006 Maoist insurgency. PRC influence is growing, with Nepal agreeing to become a member of China's Belt and Road Initiative. Also, natural disasters such as earthquakes, flooding, and melting glaciers threaten the livelihood of this democracy. USINDOPACOM orients our programs against these challenges. The Nepal Army continues to improve its institutions and professionalize its force. Through capacity-building programs from the DOD and USINDOPACOM, the Ministry of Defense, historically separate from the Army but now responsible for it, is growing its ability to lead and improve civil-military relations. USINDOPACOM's primary focus areas for engagement remain HA/DR capacity building, peacekeeping operations (PKO), and strengthening the military and civil security institutions. Nepal is the world's sixth-largest contributing nation to United Nations Peacekeeping, deploying over 5,600 troops to 13 different missions. Nepal hosts an UN-certified international PKO training center, primarily funded by the State-DOD Global Peace Operations Initiative. In December 2019, the State Department delivered the first two C–146J Skytrucks to Nepal, a small, fix-winged cargo aircraft that immediately improved their HA/DR capacity. Nepal is partnered with the Utah National Guard under the State Partnership Program.
- *Sri Lanka.* Maintaining, and in certain areas expanding, military-to-military engagement with Sri Lanka will continue to be an area of USINDOPACOM focus. Sri Lanka shows a continued willingness to seek security cooperation with the United States; however, the bilateral defense relationship will encounter challenges, particularly given allegations of senior military officers' involvement in gross violations of human rights during the country's civil war. The United States must continue its defense cooperation with Sri Lanka and assist in professionalizing its military and further building its maritime security capacity. There is potential to increase collaboration with maritime and air forces on various issues, including counterterrorism, counter narcotics, human trafficking, HA/DR, and maritime domain awareness. The transfer of an excess United States Coast Guard cutter to Sri Lanka in August 2018 and additional platforms from the United States, Japan, and India, provides the Sri Lankan Navy greater capabilities to contribute to regional maritime domain awareness initiatives. Sri Lanka is partnered with the Montana National Guard in the State Partnership Program.

MODERNIZE EXERCISES, EXPERIMENTATION, & INNOVATION

Currently, the Joint Force lacks the training capacity to integrate Service recommended weapons and capabilities into a warfighting concept that deters the adversary and aligns positional advantage. U.S. Forces must be capable of fighting in highly contested environments against technologically advanced opponents while also preserving our freedom of action across all domains. We must continue to expand the capability of our ranges the same as we advance our platforms and weapons.

NDAA–21's $2 million authorization for the Pacific Multi-Domain Test and Experimentation Capability (PMTEC) clarifies the requirements for the development of the necessary, fully—instrumented, live-virtual training areas throughout the Indo-Pacific by networking the test and training ranges from the west coast of the United States, across the Pacific, to Japan and Australia.

This capability begins the process to develop the training capacity to integrate Service recommended weapons and capabilities into a joint warfighting concept that deters the adversary and trains our most capable warfighting force while expanding the breadth and scale of experimentation.

Many of the ranges in the Indo-Pacific have the potential for addressing USINDOPACOM's requirements:

- Joint Pacific Alaska Range Complex (JPARC), Elmendorf, Alaska, U.S. Air Force—allows for all domain integration.

- Pacific Missile Range Facility (PMRF), Barking Sands, Kauai, Hawaii, U.S. Navy—the world's largest instrumented multi-environmental range complex capable of supporting surface, subsurface, air, and space operations simultaneously.
- Pohakuloa Training Area (PTA), Hawaii Island, Hawaii, U.S. Army—provides a quality joint/combined arms facility that supports company level live-fire and battalion level maneuver training. If we prioritize further investments here, PTA could support battalion-sized live-fire, brigade maneuver, and most importantly provide a training environment for a Division to synchronize joint and multi-domain effects.
- Kwajalein Ranges, Kwajalein Atoll, United States Army—provides missile and missile-interceptor development, space surveillance, and satellite tracking.
- Combined/Joint Military Training (CJMT) Commonwealth of Northern Mariana Islands (CNMI), United States Marine Corps—would allow company size units to conduct training. We continue to work with key CNMI leaders to develop a way ahead.

PDI also authorized $128 million in fiscal year 2021 for USINDOPACOM's Joint Exercise Program that will begin to transition into Operation Pacific Resolve—a series of coalition and joint exercises deliberately linked over time and space in the western Pacific to provide a persistent presence in the form of an Integrated Joint Force.

Operational Pacific Resolve will provide the platform to integrate the existing ranges, training areas, and test facilitates to support a coherent Joint Exercise Program. This platform will generate force readiness, test emerging capabilities, and drive theater-appropriate requirements in a fully instrumented live-virtual training area.

Special Enablers and Authorities.

- Building Partner Capacity (BPC) Authorities. USINDOPACOM relies on these authorities to support security cooperation initiatives or activities, such as counterterrorism and bolstering our partners' land, maritime, and air forces to resist coercion and protect their people's critical information. We also rely on State Department authorities such as FMF, IMET, and the Global Peace Operations Initiative (GPOI) to meet capacity-building requirements that promote the tenets of a Free and Open Indo-Pacific.
- Title 10, Section 333—Global Man, Train and Equip. In fiscal year 2021, USINDOPACOM received $254.6M for building partner capacity for our allies and partners. This amount accounted for approximately 26 percent of the total funding for global Title 10 (Section 333) activities. While the United States is still the preferred partner of choice for the vast majority of countries, PRC's soft power will continue to negatively influence Indo-Pacific governments without additional direct investment. Congress' continued advocacy, support, assistance, and constructive oversight are critical for these tools to be used to their maximum potential.
- Maritime Security Initiative (MSI). MSI continues to be one of the most popular enablers with partner nations and is currently over prescribed based on the associated progress partner countries are now making. Security cooperation in the maritime domain remains one of our highest priorities. MSI is our primary tool for building partnership capacity with governments to advance our allies and partners' ability to sense a threat, share the information, and contribute to a coordinated interagency and sometimes multilateral responses.
- Joint Interagency Task Force—West (JIATF West). Transnational organized crime (TOC) has strategic implications for United States national interests and for our allies and partners. I am concerned about the destabilizing impact of organized crime, its impact on our Nation, and indications that China is using TOC to surreptitiously advance its agenda across the region and beyond. In response to the growing TOC threat in the Indo-Pacific, JIATF West has expanded its counter narcotic operations and activities and is well-positioned to carry out broader counter TOC activities. Through the Section 1022 authorities, JIATF West works with an interconnected network of U.S. and foreign partners to counter networks that traffic illicit drugs, goods, and commodities, to include precursor chemicals. However, I am concerned with the potential lapse of DOD's Section 1022 authority, which will expire at the end of fiscal year 2022. This authority allows our counter-threat finance analysts at USINDOPACOM to continue helping our law enforcement partners disrupt the finances of terrorist groups and transnational criminal organizations, including those that operate in Asia and the Pacific. Congress has provided annual extensions of the Section

1022 authority ever since it first provided the authority in the fiscal year 2004 NDAA.

- China's unwillingness to address the illicit trade and distribution of fentanyl into the United States represents a clear and present danger to our national security. JIATF West is now using new processes that analyze, illuminate, and identify threat networks for U.S. and foreign law enforcement for action. The drug trafficking and transnational crime supply routes pass through multiple countries in Southeast Asia and across the vast Oceania region before reaching destinations in Mexico and the United States. JIATF West is a vital instrument in aligning a significant interagency effort—not only to counter drugs—but to fine-tune our ability to disrupt transnational criminal networks that are inflicting immense harm on our country.
- Center for Excellence on Disaster Management (CFE–DM). USINDOPACOM works with other nations to build partnership capacity to engage where our unique military capabilities can help develop our partners' military capacity in the area of HA/DR. A U.S. Agency for International Development (USAID) Mission Civilian-Military Coordinator is paired with our Security Cooperation Officers to ensure security and development activities are aligned in each country they operate in. Infectious diseases like the novel Coronavirus (COVID–19), Tuberculosis (the most significant global killer), Dengue Fever, and Measles are examples of growing threats to stability in the region. USINDOPACOM's efforts in health security promote the U.S. Government's commitment to the Global Health Security Agenda for promoting community health and capacity through numerous engagements and interactions.
- Natural & Man-made Disasters. The Indo-Pacific remains the most disaster-prone region in the world. More than 75 percent of the earth's volcanoes and 90 percent of earthquakes occur in the "Ring of Fire" surrounding the Pacific Basin. The U.N. estimates economic losses in the region due to disasters could exceed $160 billion annually by 2030. Other regional and global threats, including climate change, pandemics, and IUU fishing, further threaten our precious shared natural environments and economic sustainability. Many countries across the region still lack sufficient capability and capacity to manage large-scale disasters; however, some have made steady progress building capacity to deal with small-scale events. USAID leads federal responses to international disasters and preparedness and mitigation efforts. A key element of USINDOPACOM's global engagement strategy in the region, through the Center for Excellence in Disaster Management and Humanitarian Assistance, is building capacity with our allies' and partners' militaries to improve their resilience capability to conduct their HA/DR.
- Women, Peace, and Security (WPS) Program. USINDOPACOM is grateful for Congress' continued support for WPS programming, and USINDOPACOM remains committed to integrating WPS goals into USINDOPACOM's framework for security cooperation. From conflict prevention, stabilization, peacekeeping, to HA/DR, WPS is a unique smart power asset that advances a Free and Open Indo-Pacific. In support of the DOD's WPS Strategic Framework and Implementation Plan, USINDOPACOM's Office of WPS promotes a gender perspective across our theater plans, programs, and policies to develop security strategies inclusive of the entire population. WPS builds resilience capacity, particularly through civil-military disaster response planning, coordination, and response. USINDOPACOM and partner nations highlight the significance of a gendered security approach to both steady state and emergency operations through programs such as the Women's Mentorship Program and the Rural Women Changemakers Program. These programs emphasize the unique protection needs of women, children, and other vulnerable populations but also underscore women's distinctive contributions to strengthening disaster preparedness and response. Furthermore, USINDOPACOM continues to engage with our Pacific Island Nation Partners through WPS and recently held a virtual summit focused on the nexus of gender, climate, and disaster risk and resilience through a Pacific lens. WPS promotes the values and norms desired by all people: dignity, human rights, and equality under the law. The meaningful inclusion of women in peace processes has led to longer lasting peace agreements, and factoring the perspectives and needs of an entire population into INDOPACOM's security cooperation framework ensures a sustainable and practical approach to achieving lasting security outcomes.
- COVID–19 and Infectious Disease Response. Natural and man-made disasters do not recognize national boundaries, as evidenced by the measles outbreak in Samoa, an outbreak of Dengue Fever in the Freely Associated States in 2020, and the global COVID–19 pandemic. These events remind us how inter-

connected and dependent the world is and the need to work together to solve some of our most challenging humanitarian problems.

We continue to carefully evaluate all operations, exercises, and training events to ensure we can safeguard our personnel, maintain the joint force's readiness, and conduct our defense support to civilian agencies and foreign humanitarian assistance missions. The proactive actions of the USFK and USFJ commanders' led to the mitigation of risks commensurate to their circumstance. Our forward-deployed personnel work closely with national and local governments to coordinate definitive, enforceable actions to combat the Coronavirus spread. Within the Department and across the Department, we have taken many far-reaching measures to slow the virus's spread by closing schools, restaurants, and on-base businesses. We implemented preventive measures to restrict the virus's spread with a telework program and flex schedules, modified meeting protocols, and increased sanitation in communal areas. We have also implemented aggressive quarantine measures that range from individual Restriction of Movement procedures to hospitalization in a local treatment facility if a servicemember tests positive. To date, our forward stationed troops in Korea and Japan are maintaining appropriate levels of readiness.

This is an unprecedented effort, and we remain flexible to meet the evolving challenges the spread of this virus presents. Lab-testing was established in Tripler Army Community Hospital (Hawaii), Brian Allgood Community Hospital (South Korea), United States Naval Hospital (Japan), and the Armed Forces Research Institute of Medical Science (Thailand). We will continue to proactively mitigate the negative impacts of this and all future cases.

The COVID–19 outbreak is a staunch reminder a ready medical force should not be exclusively designed to manage traumatic injuries; indeed, even in armed conflict, disease, and non-battle injuries still comprise the most significant number of casualties.

KEY ADVERSARIAL CHALLENGES

As we pursue a Free and Open Indo-Pacific, we face significant challenges from four key adversaries. The PRC represents our greatest strategic threat. Its rapidly advancing capabilities and increasingly competitive posture underscore its drive to become a regionally dominant, globally influential power. Beijing is growing increasingly confident, and PRC leaders have demonstrated a willingness to accept friction to pursue a more expansive set of political, economic, and security interests. This growing assertiveness is particularly acute concerning sovereignty disputes, as Beijing seeks to steadily and incrementally shift the regional status quo to their advantage.

The United States' other great power competitor, Russia, also seeks to assert itself as a significant military, economic, and diplomatic power in the Indo-Pacific Region. Moscow pursues broad regional engagement, including military engagement, to advance its strategic interests and oppose, challenge, and thwart United States and allied interests.

Meanwhile, until the nuclear situation is resolved on the Korean Peninsula, North Korea will remain our most immediate threat. Pyongyang continues to develop Weapons of Mass Destruction and asymmetric capabilities— including nuclear weapons and associated delivery systems, as well as advanced cyber operations— that threaten our allies and the United States Homeland.

Finally, the regional threat from terrorism and violent extremism continues to evolve with global conditions. Global networks such as the Islamic State of Iraq and Syria (ISIS) inspire attacks motivated by ISIS' ideology or tactics remain a significant concern.

People's Republic of China. The PRC is pursuing rapid, comprehensive military modernization across land, sea, air, space, cyber, and information domains, with a clear focus on systems intended to expand its anti-access/area denial (A2/AD) envelope across the region and enhance the country's force projection and strategic deterrence. This far-reaching strategy aligns with the stated goals for People's Liberation Army (PLA) modernization, which PRC leaders remain highly resolved to achieve. In October, Beijing announced it would seek to accelerate military modernization initiatives in time for the PLA's 100th anniversary in 2027, advancing the PRC's progress toward its previously-stated milestones of completing military modernization by 2035 and transforming the PLA into a "world-class" military by the end of 2049. The PLA is pursuing several initiatives toward this end, including developing highly capable, advanced weapons systems, enhancing its training and exercise program's scope and complexity, and expanding the breadth of its operational space across the Region.

PLA Modernization. The PRC focuses particular attention on PLA Navy (PLAN) and PLA Air Force (PLAAF) modernization, which it sees as key to projecting power and achieving great power status. The PRC maintains the world's largest naval force, which has tripled in size over the past two decades. The PLAN commissioned more than 25 major ships in 2020 alone, including combatants, amphibious warfare ships, and two nuclear-powered ballistic missile submarines.

The addition of these new platforms—which include two new classes of modern warships, the RENHAI guided-missile cruiser, and the LUYANG III MOD guided-missile destroyer—provides the PLAN greater maneuverability and flexibility to perform a diverse set of missions, ranging from littoral warfare to far-seas operations. Meanwhile, the PLA has operationally fielded its first 5th generation stealth fighter, the J–20. It is advancing the development of its first aerial-refuelable bomber, the H–6N, which will complete the country's nuclear triad's final leg. The PLAAF's Y–20 heavy-lift transport aircraft also conducted its first overseas missions in 2020, advancing the PLA's ability to quickly deploy forces and sustain operations across multiple fronts.

PLA Long Range Weapons Development. The PRC is simultaneously developing several modern, long-range weapons intended to strengthen the PLA's standoff precision strike and nuclear deterrence and counterattack capabilities. The PRC is pursuing a range of advanced weaponry, including electromagnetic railguns, hypersonic glide vehicles, and land-attack and anti-ship supersonic cruise missiles, and the PLA Rocket Force conducts more ballistic missile live-fires every year than the rest of the world combined. The PRC is also expanding and maturing its space and counterspace programs. Beijing continues to grow its space-based intelligence, surveillance, and reconnaissance (ISR) constellation and is developing reusable launch vehicle and heavy space lift capabilities that facilitate the insertion of more and larger satellites into orbit. The PLA is also pursuing counter-space technologies such as satellite jammers and directed-energy and direct-ascent kinetic weapons. Significantly, the PRC's Beidou-3 global satellite system reached full operational capability in June 2020, providing the PLA an indigenous system for global positioning, navigation, and timing coverage. Collectively, these developments—particularly as they reduce the PRC's reliance on the United States' space-based infrastructure—facilitate the militarization of space and increase the threat that the PRC will employ counter-space weapons that deny the U.S. and allied access to space during a conflict or crisis.

PLA Training and Exercises. Notably, the PRC is not merely developing advanced weapons systems but is increasingly employing them in training and exercise scenarios to hone PLA warfighting skills and send an unmistakable message to regional and global audiences. In August 2020 for example, the PRC conducted coordinated DF–21D missile launches into the South China Sea. These mid-range, anti-ship ballistic missiles are capable of attacking aircraft carriers in the western Pacific, and their employment during a large-scale PLA exercise demonstrates the PLA's focus on countering any potential third-party intervention during a regional crisis. Likewise, the PLA conducts joint amphibious landing and maritime strike training to simulate a Taiwan invasion scenario and performs large-force maneuvers to demonstrate its ability to intervene in a Korean peninsula crisis. Through complex, realistic training and exercises that emphasize joint tactics and incorporate advanced technologies, the PLA continues to refine organizational and process changes initiated as part of 2015's sweeping reforms. These reforms compensate for the lack of recent combat experience, both critical steps as the PLA prepares for modern warfare.

PRC Threats in the Region. The PRC has adopted an increasingly assertive military posture to exert pressure and expand its influence across the region. This is particularly stark concerning Taiwan. Over the past year, Beijing has pursued a coordinated campaign of diplomatic, informational, economic, and—increasingly—military tools to isolate Taipei from the international community and if necessary, compel unification with the PRC. Throughout 2020 the PLA has amplified its force posturing near and around Taiwan, to include using H–6 bombers to circumnavigate the island and conduct Taiwan Strait centerline crossings and flying military aircraft into Taiwan's air defense identification zone (ADIZ) at the highest rate in nearly 25 years. Over the past 2 years, the PRC has incorporated highly-publicized amphibious assault training into national-level exercises, almost certainly to exert pressure and signal resolve.

Beijing's authoritative messaging has also grown increasingly confrontational and has linked the PLA's military activities near the Taiwan Strait to "separatist" activities in Taiwan. On the diplomatic front, Beijing continues to impede Taiwan's meaningful participation in international organizations. In 2020 for example, Taiwan was blocked from participating as an observer in the annual World Health As-

sembly despite its success in managing the COVID pandemic. Such consistent employment of pressure tactics undermines the Chinese Communist Party claims that it desires a peaceful unification with Taiwan.

Hong Kong experienced a significant decline in autonomy following the PRC's imposition of the Hong Kong National Security Law in June 2020. At Beijing's behest, Hong Kong authorities used mass arrests to silence pro-democracy activists and curb further dissent by eroding the pro-democracy movement's political power, weakening Hong Kong's free press and promoting pro-Beijing education in Hong Kong's schools. Meanwhile, PRC security organizations have established an official presence in the city under the auspices of the Office for Safeguarding National Security, enabling Beijing to closely monitor Hong Kong residents and enforce the National Security Law. Through these heavy-handed efforts to impose authoritarian control over Hong Kong affairs, the PRC has demonstrated the hollowness of its "one country, two systems" model.

The PRC's expansionary territorial ambitions are also on display along its western border, where the PLA has been engaged in a standoff with Indian forces along the Line of Actual Control (LAC) since May 2020. The standoff was predicated by clashes over construction activities near the disputed border PLA ground maneuver and support elements subsequently forward-deployed roughly 50,000 soldiers along the LAC, leading to a counter-deployment by the Indian Army.

The PLA has not yet withdrawn from several forward positions it seized following the initial clash, and the consequent escalation of tensions between the PRC and India has resulted in casualties on both sides. This large-scale PLA mobilization—which is particularly notable considering the elevation, terrain, and distance involved—has stoked regional concerns that the PRC will increasingly use force to achieve desired outcomes.

The *South China Sea* (SCS) situation remains unsettled in light of the PRC's provocative behavior and expansive and unlawful maritime claims. The PRC continues to militarize the region, deploying new equipment to its artificial outposts in 2020 and using forward airfields to support a growing level of military operations by heavy transport, intelligence, and anti-submarine aircraft. The PLA also conducts large-scale exercises in the SCS with an emphasis on amphibious landing, joint fires, and maritime strike scenarios. PLA ships and aircraft maintain a consistent SCS presence and are augmented by an armada of China Coast Guard ships, fishing boats, and other para-military forces that serve as force multipliers. These actions—which are inconsistent with President Xi Jinping's and Defense Minister Wei Fenghe's assurances that the PRC would not militarize the SCS—threaten our allies and partners' autonomy, jeopardize freedoms of navigation, overflight and other lawful uses of the sea, and compromise regional peace and stability.

Meanwhile, the PRC continues to use intimidation to inhibit other claimant nations' access to offshore resources. Beijing maintains its excessive and unlawful maritime claims over a massive area in the SCS, contrary to international law as reflected in the 1982 Law of the Sea Convention. The PRC sought to further bolster its unlawful maritime claims last April, unilaterally renaming over 80 SCS geographic features and establishing two administrative districts with alleged jurisdiction over the region. The PRC is also attempting to solidify its claims by imposing domestic laws across the disputed waters of the SCS. In April, its Coast Guard led an eight-month campaign— dubbed "Blue Sea 2020"—that seized nearly 700 vessels for violations of PRC laws, and in early 2021, the PRC passed legislation that expanded the Coast Guard's legal authority to use force against foreign vessels and destroy other countries' economic structures in disputed areas. Moreover, PRC ships and aircraft continue to harass and disrupt other nations' commercial fishing and resource exploration and extraction activities, even when conducted in areas where China cannot assert a lawful maritime claim within the respective countries' exclusive economic zones (EEZs). The PRC's pursuit of excessive maritime claims at the expense of neighboring states' EEZ rights negatively affects the economies of Southeast Asian nations and threatens to weaken the effectiveness of international laws and norms.

Beijing similarly seeks to advance its territorial ambitions in the East China Sea (ECS), and consistently uses its Air Force, Navy, and Coast Guard to press its sovereignty claims vis-á-vis the Japanese-administered Senkaku Islands, test Japanese and United States resolve, and ratchet up tensions in Northeast Asia. China Coast Guard vessels routinely enter the territorial waters of the Senkaku Islands to assert PRC sovereignty, despite lacking international standing on the dispute. PRC ships conducted presence operations in the contiguous waters around the Senkakus for a record 333 days in 2020, an increase of nearly 20 percent from 2019. In a reprise of its earlier SCS maneuvering, in June 2020, Beijing unilaterally renamed 50 geographic features in the East China Sea, a number of which are near the Senkaku

Islands. The PRC's simultaneous employment of military and administrative measures to pursue its ECS claims is indicative of its broader efforts to steadily and incrementally shift the regional status quo in Beijing's favor. Beijing is increasingly using all instruments of national power to fundamentally remake the rules-based international order into one more aligned with, and amenable to, the PRC. Its signature "One Belt, One Road" (OBOR) strategy, is predicated on building a global economic system that enforces PRC preferences and ideologies while eschewing transparency and internationally-accepted investment practices. Beijing utilizes loans, grants, and monetary gifts to establish economic dependence, corruptly capture elite allegiance, and in some cases, consolidate control. The PRC also leverages OBOR projects and economic pressure as part of a broader strategy to develop overseas PLA bases and support facilities; the naval base currently under redevelopment at Ream, Cambodia, is the latest example of the PRC's global basing ambitions.

To foster a Free and Open Indo-Pacific, the United States, alongside our allies and partners, must stand up to Beijing's coercive economic strategies while providing viable assistance and alternatives to borrowing countries.

Russia is building a better, more capable force in its Far East that is increasingly active across the Indo-Pacific Region. Ongoing Russian Federation Navy improvements include new platforms with advanced weapons systems, and we expect the Russian Pacific Fleet will add its first Kalibr cruise missile-capable ships and submarines to its inventory in 2021, giving it substantially increased anti-ship capabilities and the ability to conduct long-range strikes against land targets for the first time. Russia is also modernizing its Eastern Military District capabilities with air defense and land-based anti-ship cruise missiles, advanced fighters, and upgraded bombers capable of delivering improved and longer-range strikes. These improvements are designed to restrict access to regions of the Pacific Ocean near Russia's coast, while simultaneously expanding Russia's ability to project power across the Region and into the Arctic.

In the *Arctic,* Russia seeks to increase and routinize its presence through exercises and increasing military deployments. During Naval exercise Ocean Shield 2020, Russia tested its ability to defend the Eastern Arctic via amphibious landing training and a series of coastal defense cruise missile and artillery live-fire events. Russian strategic bombers regularly conduct long-range flights off the Alaskan coast and across Russia's northern periphery. In mid-2020, it flew for more than 25 hours in the most prolonged continuous bomber operation over the Arctic.

By late 2020, Russia deployed MiG–31 fighters and associated infrastructure to Anadyr airfield in the far northeast, enabling a continuous air defense, alert, and duty posture in the Arctic. This dynamic military posture underscores Moscow's determination to establish itself as the preeminent Arctic power, capable of controlling foreign access to Arctic resources and transportation routes.

Russia is pursuing military, political, and economic engagement across the Indo-Pacific Region, though the PRC is increasingly Russia's most important partner. This relationship has grown steadily closer since 2019, when the pair agreed to pursue a "comprehensive strategic partnership for a new era." In late December, Presidents Putin and Xi reaffirmed their desire to maintain strong bilateral ties in 2021, which marks the 20th anniversary of the pair's "Treaty of Good-Neighborliness and Friendly Cooperation." The PRC and Russia conducted a combined bomber patrol over the Sea of Japan and East China Sea in late 2020, representing the second such mission for the two countries, following an initial patrol in July 2019. In mid-2020, the PLA also participated in Russia's capstone strategic exercise for the third consecutive year, demonstrating both countries' commitment to messaging bilateral military ties despite COVID concerns. Notwithstanding these symbolic engagements, we have yet to see true integration between Russian and PLA elements. We have no evidence Moscow and Beijing seek to build an interoperable military capability, and both nations have stated publicly they do not intend to create a formal, mutual defense alliance. Instead, we expect Russia and the PRC to continue pursuing limited, coordinated military operations that support both nations' interests.

North Korea poses a significant security risk to the United States and our partners in the Indo-Pacific Region. The country has taken no meaningful steps toward denuclearization, despite promising signs of de-escalation in 2018, and it continues to advance its strategic weapons program. Pyongyang maintains a diverse and growing missile inventory, and North Korea unveiled several new ballistic systems during military parades in late 2020 and early 2021, including two SLBMs and an ICBM. Meanwhile, North Korean leader Kim Jong-un has re-adopted a bellicose posture toward the United States. In December 2019, Kim declared he was no longer bound by a self-imposed moratorium on nuclear and long-range missile tests. In early 2021 he characterized the United States as the North's biggest or principal enemy as he vowed to strengthen its nuclear arsenal. Kim also identified several

new weapon modernization goals in early 2021, to include developing tactical nuclear weapons and hypersonic glide vehicles and improving the readiness and accuracy of North Korea's ICBMs. Pyongyang's missile research and development efforts, coupled with its ongoing pursuit of nuclear material and technology, are consistent with the regime's stated objective of being able to strike the United States Homeland.

Kim Jong Un has historically shown a willingness to undertake provocative, escalatory behavior that foments persistent regional tensions. In 2020, Pyongyang increased its bellicose rhetoric and posturing by destroying the inter-Korean Joint Liaison Office and threatening further retaliation for perceived South Korean transgressions. North Korea pursued a more moderated approach later in the year as it diverted attention toward flood recovery and COVID mitigation efforts.

Nonetheless, it continues to develop new—and upgrade existing—conventional weapons systems that threaten our regional partners' safety and security. At its October 2020 military parade, North Korea unveiled an anti-tank guided missile system, self-propelled artillery, a new SAM system and accompanying radar, and large-caliber rockets/missiles. Further, Kim continues to call for unilateral South Korean adherence to the 2018 Comprehensive Military Agreement—and has reiterated a reduction of United States-South Korean military ties as a precondition of improved inter-Korean engagement—while maintaining a provocative stance toward the South.

In defiance of the United Nations Security Council Resolution (UNSCRs), North Korea continues to import refined petroleum through illicit ship-to-ship transfers and unreported direct deliveries by foreign-flagged vessels. USINDOPACOM supports UNSCR enforcement and works closely with our partners and allies to disrupt the illicit ship-to-ship transfers.

Unfortunately, Pyongyang has been able to mitigate this effort's effects due to Beijing and Moscow's relatively lax sanctions enforcement. Pyongyang's sanctions-evasion strategy relies heavily on PRC shipping networks, and many of the illicit transfers occur in or near PRC territorial waters.

Further, North Korea mitigates the effect of UN-imposed sanctions through a variety of other illicit evasion tactics. Pyongyang exports coal in contravention of U.N. prohibitions, and North Korean laborers continue to work around the world, including in the PRC and Russia—either illegally or through visa loopholes—beyond the December 2019 repatriation deadline provided in UNSCR 2397. Additionally, malicious cyber activity remains a significant source of revenue for the regime. Through cyber-enabled financial theft, extortion campaigns, and cryptojacking—wherein North Korea uses compromised computing resources to mine digital currency—North Korea raises illicit revenue to support its weapons development programs.

Violent Extremist Organizations (VEOs). The Islamic State of Iraq and Syria (ISIS) remains the most active and deadliest terrorist threat in the region, with branches in the Philippines and India and networks of supporters in Indonesia, Maldives, Bangladesh, Malaysia and Sri Lanka. The group's Philippines-based branch, ISIS East Asia, has conducted several high-profile attacks in recent years, including August 2020 twin suicide bombings in Jolo that killed at least 15 people. However, the group lacks the operational capability to plan sophisticated attacks, and its

loss of key leaders caused it setbacks in 2020. Notably, these disparate ISIS and ISIS-inspired groups are not cohesive; they do not collaborate or fall under the same command and control structure. They lack substantial connections to the ISIS core in Iraq and Syria. Although ISIS is the most pervasive VEO in the region, al Qaeda (A.Q.) has historical ties to and followers in several countries. However, the group's priorities remain concentrated in Afghanistan, and regional A.Q. supporters mostly refrain from operational planning due to limited capabilities and a focus on facilitation and recruitment activities. Local groups—such as Indonesia-based Jemaah Anshorut Daulah (JAD) and Jemaah Islamiyah (J.I.), who are aligned to ISIS and A.Q., respectively—continue to operate in the region, but pose a limited threat to United States interests.

However, self-radicalized, ISIS- or AQ-inspired extremists remain a cause for concern.

Meanwhile, regional counterterrorism (CT) capabilities continue to improve. Several countries have modernized their CT legislation, empowering law enforcement to conduct more arrests that lead to convictions. Additionally, in places like the Philippines, host-nation security forces have maintained consistent pressure on extremist networks, further degrading the groups and disrupting planning and attacks. Looking ahead, regional cooperation initiatives, such as the Singapore-based Counterterrorism Information Facility (CTIF), will be critically important to lessening the threat from violent extremism on a multilateral basis.

CONCLUSIONS AND IMPLICATIONS

The greatest danger for the United States is the erosion of conventional deterrence. Without a valid and convincing conventional deterrent, the PRC will be emboldened to take action in the region to supplant United States interests. As the military balance in the Indo-Pacific becomes more unfavorable to the United States, we are accumulating additional risk that may embolden our adversaries and competitors to attempt unilaterally changing the status quo.

USINDOPACOM's focus is to ensure access, freedom of maneuver, and our ability to project power in the shared domains, which enables USINDOPACOM to deter and deny our adversaries' and competitors' ability to engage in acts of aggression, coercion, or other malign behavior towards our allies and partners along the First Island Chain. Ultimately, the steps we take must convince our adversaries and competitors they simply cannot achieve their objectives with force.

PDI provides a pragmatic and economically viable approach for implementing a deterrence strategy for defending U.S interests in the Indo-Pacific while mitigating risk and avoiding escalation. Funding levels in PDI for fiscal year 2021 equates to seven-tenths of 1 percent of the DOD's Total Obligating Authority in fiscal year 2021, and just two-thirds the amount spent on the European Defense Initiative in fiscal year 2020 ($5.9 billion).

USINDOPACOM must field an integrated Joint Force with precision-strike networks along the First and Second Island Chains; an integrated air and missile defense in the Second Island Chain; and an enhanced force posture that provides the ability to preserve regional stability, and if needed, disperse and sustain combat operations for extended periods.

Chairman REED. Thank you, Admiral. Before we begin questions let me remind everyone how we will proceed with remote participants. Since it is impossible to know exactly when our colleagues who will be joining via the computer arrive, we will not be following our standard early bird timing rule. Instead, we handle the order of questions by seniority, alternating sides, until we have gone through everyone. Once we reach the end, if there is anyone we missed we will start back at the top of the list and continue until everyone has had their turn.

We will do the standard five-minute rounds. I ask my colleagues on the computers, and at their desk, to please keep an eye on the clock, which you should see on your screens.

Finally, to allow for everyone to be heard, whether in the room or on the computer, I ask all colleagues to please mute your microphone when not speaking.

Admiral, again, thank you for your service and thank you for your testimony. As you indicated, one of the principal initiatives of this Committee over the last several years was the PDI, and I would ask you, in your view, how is the Department, and in particular the services, responded to the establishment of PDI?

Admiral DAVIDSON. Thank you, Senator, for the question. I am quite encouraged, as you know, the budget for fiscal year 2022 alone is under review by the new administration, and I was quite encouraged by the Deputy Secretary of Defense's memo of two weeks ago, where she articulated that the PDI was absolutely a priority that would be addressed during the budget review.

I think the Pacific Deterrence Initiative, funded in fiscal year 2021 for about $2.2 billion, was a good first start. I recognize that the Committee has put a cap of $5.5 billion on the fund going forward. I understand from the draft budgets that there is certainly recognition of the funds that need to go into PDI. I have been encouraged by much of the draft material I have seen, but there is a long way to go before the budget is finalized, and we'll continue to engage with the Department to see it through.

Chairman REED. Let me shift focus. How have our allies and partners responded to PDI?

Admiral DAVIDSON. I think quite positively. Our allies and partners in the region are looking for the surety that the United States is a reliable partner in the region and is here to stay. The investments that we make specifically towards the PDI will be recognized, and I think are being recognized, at least as we have talked about them, in their own advances and their own defense budgets, where you see Japan, Korea, and Australia, for example, all increasing their defense budgets.

Chairman REED. Well, thank you, Admiral. In your independent assessment, you suggested a $4.7 billion Federal funding level. Would that be sufficient for all your needs?

Admiral DAVIDSON. As we have articulated for fiscal year 2022, sir, if that was to be fully resourced it would assess our needs to put in place the deterrent posture that I am advocating for.

Chairman REED. Thank you very much. One of the big challenges, not just in the Pacific but across the military services is joint capabilities, particularly secure and uninterrupted communication. I do not think it takes a lot of expertise to understand that the first wave of assault will probably be cyberattacks on communications and other sensitive instruments. We have problems getting our services jointly connected, and you can allude to them, but our greatest comparative advantage in the Pacific is our allies, and so not only do we have to solve the problem of joint communications with our forces, we have to extend that to our allies. If we do, that investment, I think, would probably be the most fundamental one we could make, because a fully integrated force that can fight together is probably the greatest deterrent in the Pacific.

Can you comment on that, sir?

Admiral DAVIDSON. Thank you, Senator. Indeed, I agree. One of the things that we have advocated for in the PDI and our 1251 assessment that we submitted last week is the need for a mission partner environment, which is information technology that is available to us today, that extended to our allies and partners in the region would give us confidence in the cybersecurity of all those systems and the resiliency against attack, and it would greatly enhance our ability to plan, our ability to collaborate in operations and planning, certainly in peace time but then in crisis and conflict as well.

Chairman REED. Is that your number one priority?

Admiral DAVIDSON. After the defense of Guam, Mission Partner Environment (MPE), and then advancement for our ranges, absolutely, sir. Those are the three big requirements I have for this fiscal year.

Chairman REED. Just a final question and a quick response. Most of our relationships, going back several decades, have been bilateral in the Pacific, and we have to move to a multilateral approach. Is there any progress in that direction?

Admiral DAVIDSON. I am quite encouraged by the potential power of an organization like the Quad might bring. In my view, India, Japan, Australia, and the United States, that is a diamond of democracies that could bring so much more, not only to the region but to the globe, not in terms of security alone, but in terms of how

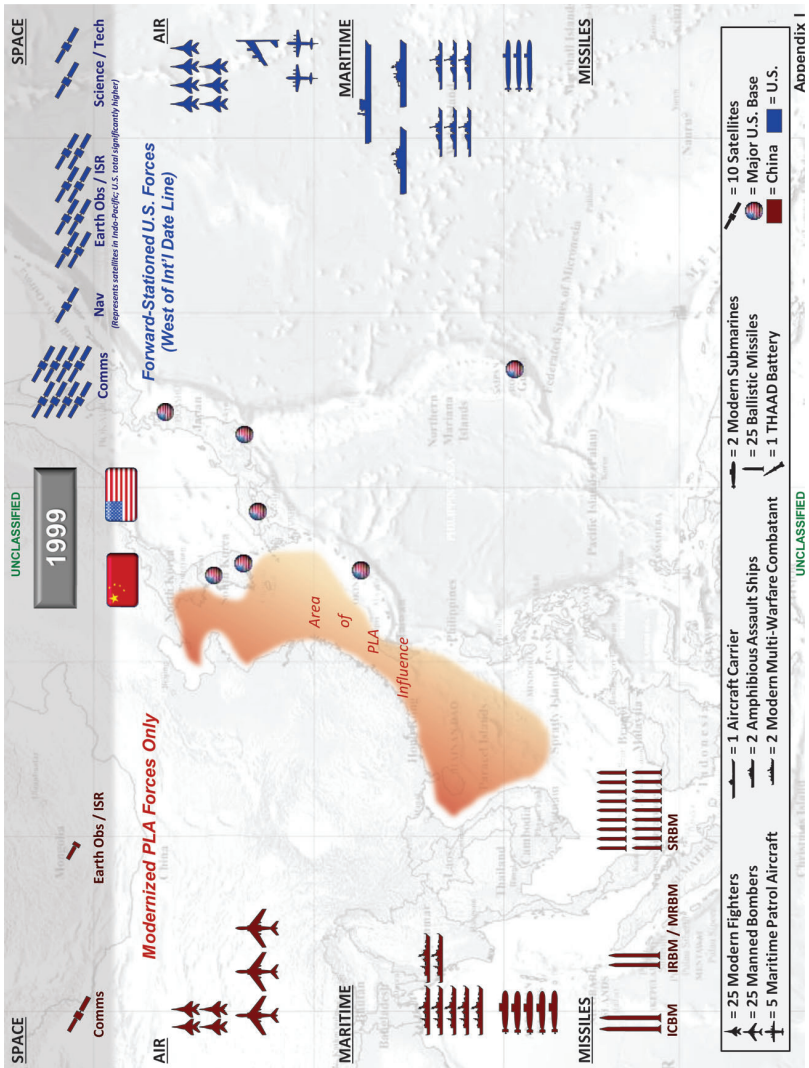
we might approach the global economy, critical technologies like telecommunications and 5G, collaboration on the international order. Just much to be done diplomatically and economically, and I have great hope that our ministerial-level meetings with the Quad, as it is known and returned, will build into something much bigger for the sake of the globe.

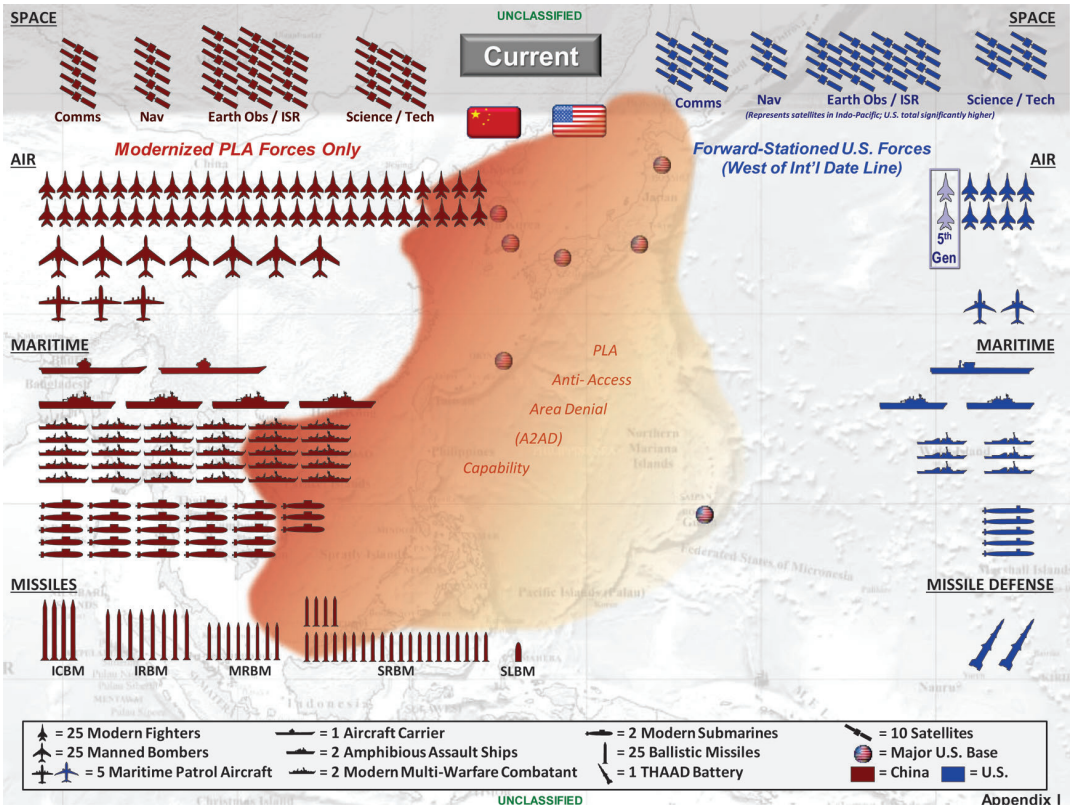
Chairman REED. Thank you very much, Admiral. Senator Wicker, please.

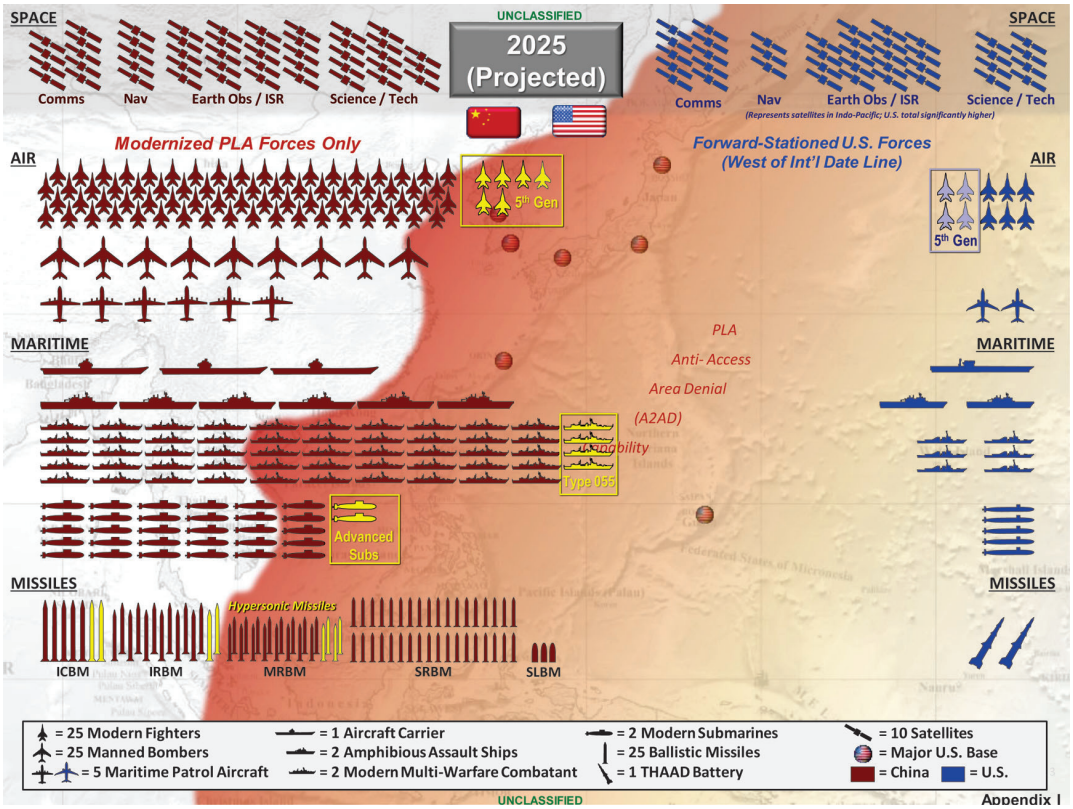
Senator WICKER. Thank you very much, and at this, Mr. Chairman, I want to enter into the record three unclassified documents which amount to Appendix 1 of the 1251 report.

Chairman REED. Without objection.

[The information referred to follows:]




UNCLASSIFIED
SPACE
Current
SPACE
Comms
Nav
Earth Obs / ISR
Science / Tech
Comms
Nav
Earth Obs / ISR
Science / Tech
(Represents satellites in Indo-Pacific; U.S. total significantly higher)
Modernized PLA Forces Only
Forward-Stationed U.S. Forces
(West of Int'l Date Line)
AIR
AIR
5th Gen
MARITIME
MARITIME
PLA
Anti- Access
Area Denial
(A2AD)
Capability
MISSILES
MISSILE DEFENSE
ICBM
IRBM
MRBM
SRBM
SLBM
= 25 Modern Fighters
= 25 Manned Bombers
= 5 Maritime Patrol Aircraft
= 1 Aircraft Carrier
= 2 Amphibious Assault Ships
= 2 Modern Multi-Warfare Combatant
= 2 Modern Submarines
= 25 Ballistic Missiles
= 1 THAAD Battery
= 10 Satellites
= Major U.S. Base
= China
= U.S.
UNCLASSIFIED
Appendix I


UNCLASSIFIED
2025 (Projected)
SPACE
Comms
Nav
Earth Obs / ISR
Science / Tech
Modernized PLA Forces Only
AIR
5th Gen
MARITIME
Type 055
Advanced Subs
MISSILES
Hypersonic Missiles
ICBM
IRBM
MRBM
SRBM
SLBM
Forward-Stationed U.S. Forces (West of Int'l Date Line)
(Represents satellites in Indo-Pacific; U.S. total significantly higher)
PLA
Anti- Access
Area Denial
(A2AD)
= 25 Modern Fighters
= 25 Manned Bombers
= 5 Maritime Patrol Aircraft
= 1 Aircraft Carrier
= 2 Amphibious Assault Ships
= 2 Modern Multi-Warfare Combatant
= 2 Modern Submarines
= 25 Ballistic Missiles
= 1 THAAD Battery
= 10 Satellites
= Major U.S. Base
= China
= U.S.
UNCLASSIFIED
Appendix I

Senator WICKER. Basically, Admiral, we talked about this earlier, it shows, in an unclassified way, the balance between the communist Chinese and the United States in 1999, currently, and projected for 2025, four short years from now. With regard to the projected 2025, it shows that at that point, China will have three aircraft carriers to our one in the region. Is that correct?

Admiral DAVIDSON. Yes, sir.

Senator WICKER. With regard to amphibious assault ships, it is projected in 2025 that they will have six to our two.

Admiral DAVIDSON. Yes, sir.

Senator WICKER. Then with regard to modern multi-warfare combatant ships, 54 to our 6. Is that correct?

Admiral DAVIDSON. Yes, sir.

Senator WICKER. What is the significance of that last figure, Admiral?

Admiral DAVIDSON. Really, the three charts work together, Senator, one to show the change in capability and capacity that the Chinese have undertaken during the course of the 21st century, and the relatively static nature of our own forward-positioned forces. As I described, our effort to do a deterrence, to sustain a deterrence posture in the region is so important on our ability to respond in time, and without question, you know, as an old novel in the 1970s used to say, the importance of United States presence forward is incredibly important. Perfect speed is being there. It is to show that if we do not make changes in our posture forward, it will demonstrate that the Chinese have much greater capacity than we have.

Senator WICKER. Now let's look at it on a little brighter side. If you take everything projected that our allies in the area will have, and also you consider what we have in Alaska, which is not west of the International Date Line but it is still fairly close, can you tell us what that does, say, to the amphibious assault ships, which is projected to be six Chinese and two for us?

Admiral DAVIDSON. Certainly that gap closes with us and the Japanese, with our ambition, but the important factor here is time. It takes almost 3 weeks to respond from the West Coast of the United States and 17 days to respond from Alaska, to get all the way to the first island chain and to conduct operations within the second island chain.

Senator WICKER. Now——

Admiral DAVIDSON. So—go ahead, sir.

Senator WICKER. No, go ahead.

Admiral DAVIDSON. But clearly, Japan brings amphibious capability. They have combatant capability, fighter aircraft, maritime patrol aircraft. To me, the Japanese are the number one ally in the region and they are critically important to the security of the region as well.

Senator WICKER. Can you supply us then with another map, taking those considerations that I mentioned into account?

Admiral DAVIDSON. Absolutely.

Senator WICKER. You will do that for the record?

Now the Chinese are projecting a 6.8 percent defense budget increase for the next fiscal year. Is that correct?

Admiral DAVIDSON. Yes, sir.

Senator WICKER. We are not prepared to match that, are we?

Admiral DAVIDSON. Not from what I have heard so far, sir.

Senator WICKER. So we are going to have to spend our money smarter.

Admiral DAVIDSON. Yes, sir.

Senator WICKER. I am afraid to get what you say you need in the PDI, we are going to have to take money from somewhere else in the defense budget, at this point. Is that correct? Is that your assessment?

Admiral DAVIDSON. Yes, sir. The way the PDI is constructed, it will have to come out of the base budget, yes.

Senator WICKER. With regard to the PDI, I think you are telling us there are three things that are yet unfunded in the budget plan. Is that correct?

Admiral DAVIDSON. Again, sir, the budget is not final, it is undergoing a review, but I am certainly advocating for Aegis Ashore in Guam, the mission partner environment as well as the Pacific Missile Test Center (PMTC)—the Pacific Missile—excuse me, the Pacific Range improvements that I seek for our structure in Alaska, Hawaii, Guam, and so forth.

Senator WICKER. In a nutshell, how do you feel about our ability, right now, to defend Taiwan?

Admiral DAVIDSON. Well, sir, as I articulated in my opening comments, I think our conventional deterrent is actually eroding in the region, and it is because of the vast advances, on the charts that you were just looking at, that the Chinese have undertaken in both terms of capacity over the last 20 years, and then in the next few years, the improvements they will make in their capabilities as well. We need to work more forthrightly.

We have described, in that 1251 assessment that you referenced, which is reflective of our regaining advantage brief, that improvements in capability, our joint lethality out there, enhancements in our design and posture, where we are, our ability to operate from more dispersed places, a strengthened, allied and partnered network, and improvements in our exercises, experimentation, and innovation will make vast improvements for really less than 1 percent of the defense budget, going forward, and help regain the advantage for us, put that conventional deterrent in the field, and prevent Chinese designs on its neighbors.

Senator WICKER. Thank you so much.

Chairman REED. Thank you, Senator Wicker. Now, via Webex, Senator Shaheen is recognized.

Senator SHAHEEN. Thank you, Mr. Chairman. Hopefully you can hear me at this point.

Chairman REED. We can hear you, Senator.

Senator SHAHEEN. Great. Admiral Davidson, thank you for your testimony this morning and for your amazing service to the country.

I would like to change the topic a little bit and talk about information and the challenges that information warfare presents. In Europe, disinformation, cyber hacking has been so important in Russia's ability to make inroads that North Atlantic Treaty Organization (NATO) has developed a center to respond to that.

Can you talk about what you are seeing in the Indo-Pacific region with respect to cyber warfare and disinformation, from both Russia and China, and how INDOPACOM is responding to that?

Admiral DAVIDSON. Thank you very much for that question, Senator. Without question, China has a vast disinformation machine. They use both regular media and social media, and have nearly a million people in their propaganda machine, to undermine United States interests, to capture the narrative to their own benefit, and to, as I mentioned in my opening remarks, you know, corrupt the environment in a way that creates doubt amongst our allies and partners in the reliability of the United States.

Russia, in the region, acts much more like a spoiler. As opposed to putting forth their own vision, they look to deny the visions of others, and are very active as well, especially in the diplomatic space but in social media. We see the same kind of effects that, you know, the rest of the globe has seen from the Russian machine.

In terms of our INDOPACOM capability and return, you know, we are highly dependent on what is a military function, the Military Information Support Operation (MISO) operations. We are engaged deeply with the State Department on the kind of messaging that would reinforce what the United States does in the region, and as opposed to providing disinformation, would highlight the ills that others have in the region. I think that's supportive of the kind of normalized information needs that any nation has. Back to you.

Senator SHAHEEN. So as you are talking about the effort that is underway, do we need to do more? Should there be more collaboration with the State Department? You and Senator Reed discussed the Quad as being one of the multilateral potential institutions that could respond to particularly the Chinese threat. Is this something that the Quad should take up in a major way, as we look at the threats? Because as you describe it, our threats are not just from conventional weapons. They are also from that cyber warfare and disinformation space.

Admiral DAVIDSON. To your point, Senator, you know, disinformation is part of the new geostrategic fabric that is making the competition so difficult. So a return of capability, to the State Department primarily, but certainly to the interagency, and what it's able to message across the globe I think is critically important. It has immense power, just as a historical example, back during the Cold War. I am not trying to imply that this is—and I don't want you to infer that this is a Cold War advocacy again. But truth, as it moves around the globe, is critically important in everything we do and should be part of this competition that is being articulated from the White House. Back to you.

Senator SHAHEEN. Well, thank you very much. I am out of time. But thank you also to INDOPACOM for your support for the Women, Peace, and Security Act. I hope we will hear more about next steps in that area.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Shaheen. Let me recognize Senator Fischer via Webex.

Senator FISCHER. Thank you, Mr. Chairman, and thank you, Admiral, for your dedicated service to this country and your constant vigilance in defending our security and keeping us safe.

Last year, the Strategic Forces Subcommittee authorized an additional $77 million to begin fielding a persistent air and missile defense on Guam. Unfortunately, this funding was removed in conference and replaced with language requiring the Department to study the issue. Can you walk us through the need for this system?

Admiral DAVIDSON. Yes, ma'am. Thank you for the question. I am a key advocate for persistent, fixed, 360-degree air and missile defense that would be capable of meeting cruise missile threats, ballistic missile threats, certainly anything to be a cruise missile launched from a bomber, from the land, from the sea, and from the air in the region. The structure that is out there right now, the Terminal High Altitude Area Defense (THAAD) radar, is not capable of meeting the current trajectory of threats from China, as I have articulated, nor the size of those raids. A persistent capability, given what we are observing in the theater, advancements in Chinese capability, are critically important, and it must be delivered in a 360-degree fashion to protect from the kind of activities we are seeing China conduct, which is circumnavigations of Guam, the Commonwealth of the Northern Mariana, et cetera.

Most importantly, we all have to understand, Guam is a United States territory. We have 170,000 United States citizens living on Guam. Their defense is homeland defense. We have 21,000 U.S. service men and women and DOD employees as well, plus their families. It is a deep-water strategic port, major fuel stores, munitions stores, command and control. It is a major power projection airfield for us in the region. It has been evidenced, by me, and displayed by the Chinese, in a propaganda video of their own bomber forces attacking Andersen Air Force Base on Guam.

Guam is a target today. It needs to be defended and it needs to be prepared for the threats that will come in the future, because it is clear to me that Guam is not just a place that we believe that we could fight from, as we have for many decades. We are going to have to fight for it in order to be able to do that.

Senator FISCHER. We've already developed systems that can meet this need. Is that right? We are not talking about any kind of new development program here, are we?

Admiral DAVIDSON. In partnership with the Missile Defense Agency, we believe that the Aegis Ashore system, as is being put to sea right now, and has been constructed previously in Romania and Poland, delivers the kind of capabilities that would meet the threat that is extant here, by mid-decade, and will help us pace the threat into the future. Yes, ma'am.

Senator FISCHER. We always talk about missile defenses as having a deterrence by denial effect. Do you see that applying here, and would this make the conflict less likely by undermining the adversary's confidence that they could achieve their goals?

Admiral DAVIDSON. Absolutely. We have to demonstrate that any ambition that China might have, and any threat it might put forth towards Guam, would come at cost, and that would be really by the collection of not only this defensive capability, which I think is so critical because it prevents a cheap shot, but also the rest of the capabilities that I have described in the 1251 assessment, which includes some offensive capabilities, to let China know that the costs

of what they seek to do are too high and to give them doubt in their success.

Senator FISCHER. Admiral Davidson, in 2018 you testified, quote, that "PACOM only has about a quarter of the intelligence, surveillance, and reconnaissance (ISR) it needs in the area of responsibility (AOR)". Does that remain the case today? I can say that in visiting with all of our combatant commanders there is never enough ISR to meet the needs in your area. Is that true? Can you compare what we have to the investments that China is making in their ISR?

Admiral DAVIDSON. We have a continued need for ISR to monitor the day-to-day activities in the region, certainly, but also to understand Chinese designs in the region, what they are doing in the training sphere, and things like that. My ISR posture has improved slightly since 2018. There has been some action taken in just the last few months to restore some of that ISR capability. But if Indo-Pacific Command is indeed the priority theater, we need to continue to look at our total intelligence apparatus—signals intelligence, communications intelligence, our imagery that comes from space, for airborne assets and all that we gather there—to make sure that we have the warning that is required to get our forces to respond, alert our allies and partners, and prevent any kind of Chinese external attack in the region.

Senator FISCHER. Thank you, Admiral. Thank you for your service. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Fischer. Let me recognize Senator Gillibrand via Webex.

Senator GILLIBRAND. Thank you, Mr. Chairman. Admiral, the Department of Defense has recently outlined China's military strategy known as Military-Civil Fusion, aka Civil-Military Integration, to develop the PLA into a world-class military by 2049. The 2019 DOD report on China stated that, quote, "China uses a variety of methods to acquire foreign military and dual-use technologies, including targeted foreign direct investments, cyber theft, in expectation of private Chinese nationals' access to these technologies, as well as harnessing its intelligence service, computer intrusions, and other illicit approaches."

Because these efforts by China will certainly affect business and people across the region, what would you recommend we work with, with our allies, to counter this strategy while maintaining the principles of a free and open Indo-Pacific?

Admiral DAVIDSON. Thank you for your question, Senator. To your point, the Chinese Military-Civil Fusion approach, which is underpinned by Chinese law that says any state or commercial business enterprise with concerns in China must provide any information that the state seeks for its benefit. That has made for particularly, you know, complex global engagement and global economic scenario, I think, for not only the United States, but as you said, our allies and partners.

It has been very important that, you know, laws like Foreign Investment Risk Review Modernization Act (FIRRMA), the Committee on Foreign Investment in the United States (CFIUS) process that has been established in the United States, is meant to help deny that fusion within China. I know that many of our allies and

partners in the region have begun to pass laws in that direction and are debating them as well.

Senator GILLIBRAND. Well, related, in last year's NDAA we included language requiring the DOD to look into better cooperation with our allies in the Pacific. Specifically, we recognized our cooperation is to, quote, "enhance through more proactive planning and cooperation with allies and partners that capitalize on each country's comparative strengths." The study requires determining what comparative advantages our allies have and what barriers exist to fully realize them.

So what barriers did you face in working with our allies, and what could Congress to do facilitate these relationships?

Admiral DAVIDSON. Well, one, there has to be not just an explanation from the security side but on the economic side as well, you know, complete clarity in what China's military-civil fusion threat does to partnered multinational companies and things like that, that might have a presence or subsidiaries in China. So I think there needs to be, you know, clear dialogue about that.

Transparency and the kind of laws we have passed and the rationale for them, like CFIUS and FIRRMA, and we need to drive understanding with our allies and partners that this threat is real and that if we do not see change from our allies and partners that we may have to determine whether many of our technologies can be shared with them, to prevent their just outright conveyance to China alone.

Senator GILLIBRAND. Thank you. I also want to continue on this line of question from Senator Shaheen. As new technologies have been developed rapidly, and nontraditional threats such as COVID and climate change begin to bear greater relevance, it has been crucial that we are able to work in a proactive manner to coordinate and respond to their allies. What lessons would you say the COVID–19 pandemic has taught INDOPACOM about coordinating with allies in the face of emerging nontraditional and transnational threats? Further, do we balance our approach, or how do we balance our approach to these particular threats in contrast to the traditional ones that we face in the Indo-Pacific?

Admiral DAVIDSON. Thank you, Senator. I absolutely agree there's opportunity for deepened relationships with our allies and partners on transnational issues. This is a whole-of-government opportunity for us, because, you know, there are economic components of the government, law enforcement, health and human services, et cetera, when combined with some of the capabilities we can bring to deliver, add capacity in diagnosing and delivering vaccines, for example, collaborating with our allies and partners in the region for those nations in need is hugely powerful. I think there should be deepened relationships across the whole U.S. Government with their counterparts in these other countries.

I am finding, just, you know, in the transnational threat alone, that some nations have legal means and relationships with countries that would be incredibly effective to help undermine things like Chinese corruption on the Belt and Road Initiative, for example. So deepening partnerships there with our allies and partners across our whole-of-government I think is a key part of the competition that we are all talking about.

Senator GILLIBRAND. Thank you so much. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Gillibrand. Senator Cotton, please.

Senator COTTON. Admiral Davidson, thank you for your appearance again here today. Thanks for your service to our Nation. I want to talk a little bit about the balance of power in the Western Pacific when it comes to missiles. For decades, the United States belonged to something called the Intermediate-Range Nuclear Forces (INF) Treaty, which prohibited us and Russia, the only two parties, from building ground-based, intermediate-range missiles, roughly speaking like 300 to 3,000 miles of range.

China was never a party to this. That is why they have stockpiled thousands of these missiles that, as you have testified, can threaten not only our allies in places like Taiwan and Japan and South Korea, but also our own troops and citizens in places like Guam and other islands in the Western Pacific.

We finally left the INF Treaty a couple of years back, in part because Russia was cheating on it for years, in part because of this imbalance of power. How important is it that the United States continues to build up our missile forces so that we can hold China, you know, in deterrence and at risk in the Western Pacific?

Admiral DAVIDSON. I think it is very important, Senator. I think a wider base of long-range precision fires, which are enabled by all our terrestrial forces, not just sea and air but by land forces as well, is critically important to stabilizing what is becoming a more unstable environment in the Western Pacific.

I have been encouraged by the enthusiasm by the Army and the Marine Corps to embrace some of the capabilities that Navy and Air Force have already developed. I think that is a low-cost way to quick capability that can be fielded potentially in the region and I think we ought to stay after it.

I say to people all the time, missile defense is the hardest thing we do, and if I am the manager of a baseball team, you know, I could have the best defenses in the world, but if I cannot score some runs I cannot win the game. We have got to have offensive capabilities that threaten—you know, that cause a potential adversary to think twice about any malign activities that they might take in the region, militarily, and that is where offensive fires come into play.

Senator COTTON. To drive this home again, the importance of ground-based precision fires. The Navy and the Air Force have great capabilities, but you can only put so many missiles on a ship or on an aircraft. Ground-based fires allow you to build up a stockpile, the same way China has done on its mainland, where they have thousands of missiles aimed at Taiwan or Japan or Guam, and that is one reason why it is so important to continue to build up those ground-based fires. Is that correct?

Admiral DAVIDSON. Yes, Senator. The U.S. fights as a joint force, and long-range precision fires delivered to the ground force I think are critically important to enhance the maneuver and positional advantage of U.S. forces in the theater.

Senator COTTON. Let's turn from missiles to payloads. Do you agree with Admiral Richard at Strategic Command that China

could triple or even quadruple its nuclear weapon stockpile in the years ahead?

Admiral DAVIDSON. Yes, sir, I do.

Senator COTTON. Presumably, if they are going to build all those nuclear warheads they are also going to build the delivery systems for those warheads as well. Correct?

Admiral DAVIDSON. Yes, sir. They have quadrupled their nuclear capability since the turn of the century and they will at least double it during the course of this decade, and I have seen the same estimates that Admiral Richard is talking about.

Senator COTTON. Whereas the United States, because we just gave a no-strings-attached extension to the New Strategic Army Reduction Treaty (START), is limited to 800 deployed nuclear weapons. So China, unconstrained by this treaty, if they triple or quadruple their stockpile, could possibly have nuclear overmatch against the United States before the end of this decade. Is that correct?

Admiral DAVIDSON. If they were to quadruple their stockpile, yes, sir.

Senator COTTON. When you combine the strategic forces of both Russia and China, then they certainly would have overmatch against the United States when it comes to our nuclear arsenal.

Admiral DAVIDSON. Yes, Senator.

Senator COTTON. It is very expensive and hard work to win an arms race, but it is much better to win an arms race than to lose a war.

Chairman REED. Thank you, Senator Cotton. Senator Blumenthal, please.

Senator BLUMENTHAL. Thank you, Mr. Chairman. I think that the thrust of this hearing and your testimony is to emphasize the ongoing and increasing threat and danger of Chinese military buildup and potential aggression. We have been talking, I guess, mainly about the conventional threats and nuclear threats, but recently the Chinese launched a cyberattack on this country. What should the American public know about that attack involving Microsoft, recently disclosed?

Admiral DAVIDSON. I am sorry. I will have to take that one for the record, sir. I have not had direct conversations with Microsoft about that.

Senator BLUMENTHAL. Would you agree that China represents a threat in the cyber domain?

Admiral DAVIDSON. Oh, absolutely.

Senator BLUMENTHAL. Would you agree also that what you just said about nuclear capacity applies to cyber as well, namely that defense is not enough. You need offense and you need to draw lines so that adversaries will know what they cannot do, lines they cannot cross, and offense is necessary to deter them from crossing those lines.

Admiral DAVIDSON. I absolutely agree, Senator. China is advancing its cyber capability in leaps and bounds. I do not think I could articulate it in a quantified manner like the discussion we just had with Senator Cotton. But they are vastly improving that cyber capabilities, and we are witnessing some of that malign activity amongst our own capabilities here in the country, as you implied.

Senator BLUMENTHAL. Do you continue to believe, as you said in 2019, shifting to another domain, the undersea domain, that, quote, "Continuing to build submarines is critically important," end quote, and, quote, "It is our most significant advantage in all domains right now," end quote, referring to submarines.

Admiral DAVIDSON. Yes, sir. Our advantage in the undersea, our submarine force, absolutely. But also what we can do in what we call anti-submarine warfare to deny other nations use, and that is the use of maritime patrol aircraft, that is the kind of sonars and sensors we put on our surface ships, we have to absolutely sustain that advantage going forward.

Senator BLUMENTHAL. So you would strongly endorse, I hope, the continued construction of two *Virginia*-class submarines a year, and the continued development and construction of the *Columbia*-class as well?

Admiral DAVIDSON. Yes, sir. The *Virginia*-class, what is coming with the *Virginia* payload module, I think are critically important to continue U.S. deterrence in the theater, and there is no doubt that the strategic deterrent needs to be recapitalized, and the *Columbia* is the way to do that for our *Ohio*-class submarines.

Senator BLUMENTHAL. Thank you. You know, I would like to turn to a nontraditional source of concern, first of all, the COVID pandemic. I understand that the ship, the USS *Theodore Roosevelt* has had several coronavirus cases recently, following the outbreak that occurred. Is that true? To what extent is COVID a continuing danger in your command?

Admiral DAVIDSON. Thanks for that, Senator. Yes, a few weeks ago the *Theodore Roosevelt* identified three positive cases out of their normal surveillance testing. Those three positive cases were sent ashore in Guam. There were some 40-odd close contacts that were in quarantine. They have continued to test negative in that time frame, and the ship remains at sea, and continues at sea. In the meantime, we have tested the whole of the crew and there are no other positive cases.

Senator BLUMENTHAL. So it is a relatively contained, isolated outbreak.

Admiral DAVIDSON. Yes, sir. Yeah, the three positive cases are off the ship and ashore at this point.

Senator BLUMENTHAL. Thank you, and in the closing short time I have left, do you regard climate change as a security threat in the command that is under your control?

Admiral DAVIDSON. Yes, sir. It is something I hear about quite frequently from my peers, particularly in the Pacific Island chain, who can describe for you, during the course of their own lifetimes, you know, the changes that they observe and have observed in their island nations.

Much of what we do at Indo-Pacific Command helps enable their ability to combat some of the ill effects that are immediately manifested, whether it is severe storm. We have an organization called the Center for Excellence in Disaster Management that helps train not only our military folks, certifying my own military folks to do disaster management, but we make it available to non-governmental organizations as well as other governments, and we do it

virtually, we do it in person, we bring them to Hawaii, all kinds of methods. It is very important for us.

Senator BLUMENTHAL. I thank you for your testimony today and for your service to our Nation. I am not going to be able to follow up now on the climate change question but I will submit more for the record. Thank you, sir.

Chairman REED. Thank you, Senator Blumenthal. Senator Sullivan, please.

Senator SULLIVAN. Thank you, Mr. Chairman. Thank you, Admiral, for your service. You mentioned about deterrence eroding in the region, and in your testimony this morning in the classified session and then also in this focused on the Pacific Deterrence Initiative. That was a bipartisan initiative that came out of this Committee, actually. So I think most of the Members of this Committee, Democrats and Republicans, are certainly supportive.

So is it your testimony today that you need full funding of that $4.6 billion as something that can help with regard to this eroding deterrence? Can you explain about that a little bit more?

Admiral DAVIDSON. I would say absolutely yes, sir. I think it fulfills what the law has asked for in the entablement of the PDI.

Senator SULLIVAN. That was in last year's NDAA, so we all agreed to it.

Admiral DAVIDSON. In last year's NDAA, and meets the strategic vision that I have in the theater to present a conventional deterrent that would give China pause from any malign military activity that they would undergo against any of our allies and partners in the region.

Senator SULLIVAN. Well, I really appreciate that. If there was one kind of takeaway from this hearing, you have the Indo-Pacific Commander, the entire Armed Services Committee, the NDAA, all pushing for this. I certainly hope the Biden administration is focused on this hearing and recognizes that they should fully fund the PDI, which is what most of us wanted and what we all voted for last year when we passed the NDAA.

Let me next talk about the issue of the force posture in the region. You know, I just started my second term here as a senator and I was asked, 6 years ago, by our former chairman of this Committee, Senator McCain, to really focus on this issue of force posture, which I have been doing a lot. I just got home from Alaska, so that is actually being out in the region, as you know, when I am home in the great state of Alaska.

One of the things I have noticed is that our force posture seems to be somewhat, I would say, stale, when you look at where our forces are—Okinawa, Korea, Guam—because they have been there for so long, and we have this issue that you have talked about, first and second island chain, the vulnerabilities. What is the right mix as you look at dispersal of forces, wanting them to be there quickly, in the region, but also the vulnerabilities that you have, first, second island chain?

I will give you an example. Alaska will soon have over 100 fifth-generation fighters stationed there. If you have the right mix of tankers, those assets could be in, for example, the South China Sea or Taiwan Strait within hours, with the right tankers. How do you

think about dispersal of forces and the different vulnerabilities that we have when it comes to force posture?

Admiral DAVIDSON. Thanks, Senator. I think about it much like I have described in the Regain the Advantage, that a more dispersed design and posture in the region is going to be required in order to achieve the positional advantages that we seek. That is done through permanently based forward-deployed forces—Japan, Korea, Guam, and elsewhere in the theater—and the use of contiguous United States-based forces, Hawaii and Alaska forces, that will rotate through the theater.

That combination of rotating presence and permanent presence has to be robust enough in order buy us the time to deny any quick action going forward. That is a mix of capabilities, and certainly the fifth-gen fighters, I would tell you, are the backbone of any of our planning for a crisis forward in the theater, and would be needed at dispersed locations within the first and second island chain.

But it also means maritime forces, it means ISR, you know, intelligence, surveillance, and reconnaissance forces, things like that, that have to be made available as well.

Senator SULLIVAN. Let me ask, you know, when I talk to officials, and I would love your view on this, our intel community, the common theme I hear with regard to China's actions under Xi Jinping's leadership is alarm. That is a phrase that is used a lot—alarm, and they point to things, just within the last year, the COVID outbreak and the non-cooperation that China has had with the rest of the world; the border conflict with India, and cyberattacks that were probably launched by China against India, major cyberattacks; an economic embargo against one of our most important allies in the region, Australia; crushing dissent in Hong Kong; very aggressive military actions in the Taiwan Strait, South China Sea; Japan's exclusive economic zone (EEZ). Do you agree these are alarming maneuvers? This is within the last year.

Admiral DAVIDSON. Yes, sir.

Senator SULLIVAN. What does this kind of do to your timeline if you are extrapolating out with regard to any potential conflict or timeline in the Taiwan Strait, when you look at how aggressive Xi Jinping's leadership has been?

Admiral DAVIDSON. I think our concerns are manifest here during this decade, not only on the development, the numbers of, you know, ships, aircraft, rockets, et cetera, that they have put in the field, but the way they are advancing those capabilities as well, in combination with everything that you just cited—Hong Kong, Xinjiang, and Tibet, and the Line of Actual Control, and the South China Sea and the East China Sea. I worry that they are accelerating their ambitions to supplant the United States, and our leadership role in the rules-based international order, which they have long said that they want to do that by 2050, I am worried about them moving that target closer. Taiwan is clearly one of their ambitions before then, and I think the threat is manifest during this decade, in fact, in the next 6 years.

Senator SULLIVAN. Thank you, Admiral. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Sullivan. Let me recognize Senator Hirono via Webex.

Senator HIRONO. Thank you, Mr. Chairman. Admiral Davidson, welcome. This is probably going to be the last time that you will be testifying before our Committee, so I want to add my thanks to you for your service, and, of course, we will miss you in Hawaii.

Admiral Davidson, do you support Homeland Defense Radar-Hawaii as an important part of the region's layered missile defense system to protect Hawaii from long-range missiles fired from rogue states such as North Korea?

Admiral DAVIDSON. Absolutely, Senator. It raises the confidence of any employment of a ground-based interceptor, and will help as any advancement in North Korean capabilities might put forth. It is critically important to the overall defense of the country.

Senator HIRONO. Thank you. You focused on two areas in your recent PDI report that, in my opinion, are vital to our national security strategy in the Indo-Pacific area. One, strengthening our allies and partners, and two, funding joint coalition military exercises and updating and networking our tests and training ranges in this area of responsibility, including two major training areas in Hawaii, the Pacific Missile Range Facility, or PMRF, and the Pohakuloa Training Area, PTA.

I noticed that you significantly increased the requested amount from last year's PDI report to this year's report to strengthen our allies and partners over the next 5 years in the region, from over $300 million to about $2.8 billion. Can you discuss your rationale for this significant increase and what that additional funding is intended to do, or where will it go?

Admiral DAVIDSON. Well, you highlighted the key aspects, ma'am. It is to enhance and make improvements in our joint exercise program, and that is principally because not only the United States but our key allies and partners—Japan, Korea, Australia, as just three examples—are buying important capabilities that match ours—integrated air and missile defense, for example, fifth-generation fighters like the F–35. They are being actually delivered in the theater.

We have got to advance our exercise program in a way that allows us to exercise those capabilities deliberately. That is going to require not only changes in our joint exercise program, and I will come back to that in a minute, but also changes in our range structures, to make sure that we can put forth the threats in a live, virtual, constructive format, that will stress the force and stress a coalition force, if it were to come about.

But additionally, that joint exercise program needs to be improved to do precisely what Senator Sullivan was talking about, to help us put more robust forces quickly in the field, to test them under concepts like contested logistics, in which we might have our cyber connectivity restricted and things like that. We have really got to advance from what I view as kind of 20th Century exercises into the 21st century capabilities and concerns we need to be worried about.

Senator HIRONO. I assume that some of the money that you are requesting to enhance or exercise capabilities will, of course, go to PMRF and PTA in Hawaii.

News reports have indicated that around 15 percent of the persons involved in the recent riots at the Capitol had military experi-

ence, either currently or were on active duty, retired, or recently separated. Secretary Austin recently order a 60-day stand-down to address troubling reports of extremism in the ranks, and the DOJ IG is currently investigating violent extremism within the armed forces after myself and several of my colleagues sent a letter asking for action.

As you finish over 35 years of service, Admiral Davidson, in your opinion, are there steps, other steps that the DOD should take to root out violent extremism in the ranks?

Admiral DAVIDSON. Well, I think certainly, Senator, the stand-down was intended just to be the first step on this. There is absolutely no place for extremism in the United States military.

I can tell you, at my own headquarters, we have already conducted the stand-down. We came together not only to have the leadership discuss what our expectations are, which is, you know, well guided by DOD instruction alone, you know, beyond the oath, but also to bring in other experts. We even had the Federal Bureau of Investigation's (FBI's) Joint Terrorism Task Force come in to talk to us about the kind of behaviors we might see, as leaders and as peers, and as subordinates and others, that might indicate extremist behaviors. We also recommitted to our oaths, and then we broke down to small groups.

We are going to have to continue to communicate on this with the force, to make sure that our expectations are well known. There is just absolutely no place for that in the United States military.

Senator HIRONO. I am considering legislation to create a stand-alone punitive article in the Uniform Code of Military Justice to address violent extremism in the ranks, and to send a message of deterrence that this kind of conduct will not be tolerated in the military. Do you think that this kind of legislation is warranted?

Admiral DAVIDSON. I think it should be certainly part of the discussion to examine. You know, I would have to defer to the Department, ma'am, about the approaches that we would take going forward.

Senator HIRONO. Yeah. I just want to note that there are certain entities such as the Oathkeepers who actively recruit from the military to join their extremist ranks.

I think I am out of time. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hirono. Let me recognize now Senator Tillis.

Senator TILLIS. Thank you, Mr. Chairman. Admiral Davidson, thank you for being here and for your years of service. Just a question, and I apologize. I have three hearings going on at the same time, so if someone has covered this it probably still bears repeating.

Talking specifically about protection of U.S. troops and bases in Indo-Pacific and our low-density, high-demand rotational capabilities are what we are relying on today. So if China were to initiate a kinetic operation somewhere in the Indo-Pacific, do you believe the relatively short notice and the warning timelines would make it particularly either very difficult or virtually impossible to defend critical locations like Guam?

Admiral DAVIDSON. Yes, sir. One of the reasons that we have made a point of advocating for sufficient ISR—intelligence, surveillance, reconnaissance—that buys us that warning in order to respond, is critically important. We have capacity needs there, and our war gaming has shown that if it is insufficient we cannot respond in time.

Senator TILLIS. In the INDOPACOM report, section 1251 of the fiscal year 2021 NDAA, you all state, "The most important action the U.S. can take to increase joint forces' lethality is to introduce a 360-degree persistent and integrated air defense capability in Guam. Guam is our most crucial operating location in the Western Pacific and its defense remains the number one unfunded priority." I think you are requesting somewhere around $350 million for that purpose.

Can you explain how China's missile arsenal threatens Taiwan and why Guam is so important to defend, and how a missile defense system permanently stationed in Guam, would help towards that end?

Admiral DAVIDSON. I think the most visible means that we have seen is China's own air force has put out a propaganda video showing their H–6 bomber force attacking Andersen Air Force Base at Guam, and distributed that quite publicly. We are seeing Chinese naval deployments of surface task groups and submarines that make circumnavigations of Guam and the Commonwealth of the Northern Marianas, and, of course, you know, we see the vast asymmetry, the very large ballistic missile force that China has.

As one component of our deterrence strategy, but again, my number one priority, because it has been unfunded and I think critical to our needs, is a defensive system that would defend against all those threats. In our work with the Missile Defense Agency, only one system can do that, meet the threats as they will be evident in mid-century, and help us leap to the future as well, and that is an Aegis Ashore-like system there on Guam.

You know, I am not Pollyanna-ish about this. It is not the sole solution. We had discussions about offense capabilities, earlier warning, the ability to disperse fighter aircraft—all that is critical components as well. But I have been very encouraged by the individual services' transformation approaches, what their support is in the theater, but one of the key shortcomings is not having this defensive system, and we need it going forward.

Senator TILLIS. Maybe in my time remaining you can talk a little bit about the need for permanently stationed forces in the region. Do you think it is adequate now? I think the answer is no, but what does it look like if we were at some level of critical mass with actually personnel west of the International Date Line?

Admiral DAVIDSON. Because so much dialogue would have to happen with allies and partners in the region, sir, although there is one modification in effect that would result in more troops, Marines, actually relocating from Japan to Guam and elsewhere, I am pretty satisfied with the permanent stationing of forces in the region right now.

If situation were to avail us, I think more capabilities in Southeast Asia and South Asia would be a priority. But in the meantime, what is achievable is to help with dispersal locations and with the

accommodation of rotational forces within U.S. territories and the freely associated states in the region, principally, as well as our key allies in the region.

Senator TILLIS. Thank you, Admiral.

Chairman REED. Thank you, Senator Tillis. Senator Kaine, please.

Senator KAINE. Thank you, Mr. Chair, and Admiral Davidson, I want to echo Senator Hirono's comments. We will miss you. I have really enjoyed working with you, being on this Committee, and in your various capacities.

You answered a number of great questions this morning in our classified briefing that my colleagues put on the table and so I am not going to repeat those.

In your military judgment, would it be in the United States' security interest if we were to ratify the U.N. Conference on Law of the Sea?

Admiral DAVIDSON. Yes, sir. I am on record saying that that would be good for us. I think you would be hard-pressed to find a Navy admiral that's said otherwise.

Senator KAINE. The convention would allow us to assert, for example, defensive claims in international tribunals to Chinese island-building or Russian activity in the Arctic, and it would also allow us to assert some offensive claims to, for example, mineral rights in the Arctic, that we cannot currently do. I would hope that the Committee might revisit whether we should finally do this, to try to gain a better footing in the INDOPACOM and elsewhere.

Second, with respect to China and the competition with China, as much as they are worried about any innovation, weapons system that the United States is developing, wouldn't you say that in some way their greatest worry about the U.S. is the network of allies and alliances we have, in their region and elsewhere?

Admiral DAVIDSON. Absolutely. I think the network of alliances, the partnerships that we have, not only in the region but across the globe, are hugely powerful, and the potential of deepening relationships strategic to defense partnership with a country like India, or in a multilateral formation like the Quad—India, United States, Japan, and Australia—I think is a key strategic opportunity for the United States, and those three other countries. But it could be so much more than just a security apparatus, and I think we ought to be thinking about it in terms of all the capabilities that it might help the globe with.

Senator KAINE. It is interesting because I think China and Russia, though very different nations, both are very afraid of the United States' network of alliances, and they have not yet been able to cobble together the kinds of alliances that are based upon mutual regard and mutual work. You know, China uses debt diplomacy to get folks in hock to them, but that is not the same thing as a significant alliance, and Russia uses, you know, availability of natural gas in sort of the same way. But the networks of alliances, they just are not anywhere near where we are.

So I hope as we are trying to maintain strategic match or overmatch in tactical weapons systems, we never lose sight of the fact that strengthening alliances is ultimately about the best guarantee we have against aggression by China.

The last question I will ask you is this. Sometimes on this Committee, and in Congress generally, we get into a mindset where we think about the defense budget as very different than the non-defense budget, and on budgetary matters we assume that the sort of non-defense budget is not as critical in national security as the defense budget. I was struck by your testimony in the classified setting this morning—this is not classified. Again and again you said it is not just defense. If we are going to be strong in the INDOPACOM, vis-á-vis China, it has got to be defense, and diplomacy, and humanitarian aid, and trade, and economic aid. These are items that are not included in the defense budget but I gather you think they are every bit as important to maintaining a robust American presence and leadership in the INDOPACOM, they are as important as the defense budget.

Admiral DAVIDSON. Yes, sir. When I engage with any of the countries in the region, whether they are an ally or it is part of the partner network, their assessment of U.S. reliability is not based on the military presence alone. It is based on our interactions, diplomatically, in the information sphere, where we are economically, our foreign direct investment, our trade. All those elements is how the allies and partners want to engage with the United States and how they view our reliability.

Indeed, to do a competition like we are talking about with China, it is going to take a whole-of-nation approach, not just a whole-of-government approach, and all of those elements come into play.

Senator KAINE. One program that I was not really aware of, but I am sure other Members of the Committee were, the Department of Interior has a program that provides financial assistance to American Samoa, Guam, Virgin Islands, Commonwealth of Northern Mariana Islands, and the freely associated states of the Federated States of Micronesia, Republic of Marshall Islands, and Palau. The compact with Palau will expire in 2024. These are non-defense budget items within Interior, but they can have a significant effect upon this question that you mentioned, our reliability, which is really, really important.

So as if we did not have enough work to do on this Committee, we have to also pay attention to the non-defense budgetary items that are strong evidence of America's desire to be a leader in the region.

Again, thank you, Admiral Davidson. Thank you, Mr. Chair.

Chairman REED. Thank you, Senator Kaine. Let me recognize Senator Cramer via Webex.

Senator CRAMER. Thank you, Mr. Chairman, and thank you, Admiral, for your service and for being with us today. This has been most interesting.

I am going to drill down maybe a little bit on some of the things related to the allies and their trust in us and how we build a stronger alliance of free people that are concerned about China. I do not think there is any question China is the topic of the day in lots of places, not just here. But I also know that a lot of these matters get out there on the fringe a little bit, sometimes things we may not think about.

So I want to ask you specifically, there was a recent Reuters story that said Iran has quietly moved record amounts of crude oil

to its top client, of course, China, in recent months, at the same time that India, India's state refineries added Iranian oil to their annual import plans on the assumption that the United States is going to lift their sanctions.

Does INDOPACOM, do you guys track Iranian oil shipments within your area of responsibility, and if so, does that information get back to the Pentagon, the White House, decision-makers that are making lots of big decisions about things domestically and around the world that might have an impact on our relationships?

Admiral DAVIDSON. Certainly, Senator. We track the Iranian trans-shipment of oil across the theater. You know, the interactions with China are indicative of China's willingness to ignore sanctions and international norms to do that kind of thing.

Senator CRAMER. But with regard to India, then, do you see a risk if we lift the sanctions on Iran, that they are able to now sell oil to an important ally, I mean, obviously very much in the region. I am just, again, thinking about all of the relationships and all of the factors that enter into the relationship. I know I am asking you now to probably opine on a policy question as opposed to whether or not you are tracking it. But it seems to me that these decisions, things like lifting sanctions on Iran, could have ramifications that we maybe have not thought of yet. If you want to comment, you can. Otherwise, I can move on.

Admiral DAVIDSON. No. Sir, it is an important policy issue for the United States. Iran is, no doubt, a net exporter of oil and it will have to be considered.

Senator CRAMER. Thank you. I want to follow up on a line of questioning that Senator Fischer asked as well, about ISR and the importance of it, and I will probably just skip some of the easy stuff that she was asking about, easy for me, not necessarily for you.

I will just ask this. Adding on to her line of questioning, do you think that the sale of ISR platforms to allies in the region might help our ISR needs in the region? In other words, I know that there have been some restrictions, there are some sales pending, there is, I know, a lot of desire by both allies and some of our American contractors. Could we help the ISR picture a little bit by opening up sales, maybe speeding them up a little bit to allies in the region?

Admiral DAVIDSON. I would say it depends on some of the exact capabilities that we are talking about. But I will tell you, broadly, we share information with our allies in the region and many, many partners. They benefit from the information that we generate. I can tell you, in the East China Sea, in the South China Sea, we, the United States benefit from much of what our allies and partners do there as well.

So it would certainly add capacity to the picture, and as we deepen our information-sharing agreements, which is dependent on a lot of factors, we will share that information amongst us. It is going to make us better.

Senator CRAMER. I do not know if you are hearing me but I stopped hearing you suddenly. I will ask one more question, in case you are listening and can hear it, and it is a pretty basic one. Do you consider China a developing country or a developed country?

That is a question I just started exploring. What is the difference, whether we consider it developing or developed?

Admiral DAVIDSON. Sir, I imagine economists, you know, have a standard for that description. I mean, certainly they have lifted hundreds of millions of people out of poverty just since the turn of the century, but I would say that they still have hundreds of millions to go. But I would have to defer to an economist to give you the exact characterization.

Senator CRAMER. Yeah, and you are right. There are some standards that economists use relating to, you know, gross versus net and all these economic points. They are relevant—do not get me wrong. But what I am more concerned about is how the rest of the world treats a developing nation versus a developed nation, and I guess I would submit to you whether they are considered developed or in transition, they are, as the chairman said in his opening comments, an emerging threat and a near-peer ally prepared for some pretty serious confrontations.

So anyway, all of that said, again, thank you for your service and thank you for being with us today, and I see my time is up, Mr. Chairman.

Chairman REED. Thank you, Senator Cramer. Let me recognize Senator King.

Senator KING. Thank you, Mr. Chairman. Admiral, you spent a lot of time in this region in the last several years. You have thought a lot about China, as you have indicated today. Here is a kind of mind-reading question. Why are they militarizing? Why are they suddenly spending so much money? Is it because of paranoia about being attacked or is it because of preparing for aggression? Do you see the difference?

Admiral DAVIDSON. Yes, sir, absolutely. I appreciate the question. That is exactly the issue at hand. I see them developing systems, capabilities, and a posture that would indicate that they are interested in aggression, and what they have committed, in their nearest abroad—Hong Kong, Line of Actual Control, Xinjiang, the kind of pressure they are putting on Tibet and others in the region—I think it is dramatically misplaced. The West has greatly assisted in the development of China, to the last conversation that we have had, over the course of the last 35 years or so. I cannot, for the life of me, understand some of the capabilities that they are putting in the field unless it is an aggressive posture, and frankly, I think they have told us that with their ambition to supplant the rules-based international order and replace it with one with Chinese characteristics, which they said they intend to do by mid-century.

Senator KING. I think that is a key question we have to continue to examine—what does China want?

Next question. What do you see, strategically, militarily, technically, in terms of cooperation between Russia and China? In the '50s and '60s, they were considered a monolith. Then they split. Are they moving toward a greater degree of cooperation? Is that something we should be concerned about?

Admiral DAVIDSON. In a tactical and operational space I have seen some collaboration there. China has participated in Russia's Pacific/Eastern Military District capstone exercise for three

straight years. We have seen co-bomber flights as recently as last fall, where Chinese and Russian bombers joined on each other and flew through the Sea of Japan, East China Sea, and into the Philippine Sea. We are seeing some exchanges like that.

I think that there is less cooperation, although frequent discussion, at the strategic level. Through all of it, I view it with some alarm. While we could consider some of the tactical and operational cooperation nascent, they are building towards improvement. There is no doubt in my mind.

Senator KING. Which it seems to me, if that continues is a matter of serious concern.

Admiral DAVIDSON. I would agree, absolutely.

Senator KING. Developing a higher level of cooperation.

Speaking of alliances, I spent some time in Asia a few years ago and met, bilaterally, with a whole range of countries in that region. I came away with the conclusion, we have allies; China has customers. One of my questions is, you have mentioned India several times. India has always been a neutral country, if you will. Are we developing a stronger alliance with them? You mentioned them as part of the Quad. Do they consider themselves a member of something of that nature?

Admiral DAVIDSON. India has long had an approach called strategic autonomy, you know, a non-aligned approach with others. But I think certainly the activities along the Line of Actual Control with China has opened their eyes to what cooperative effort with others might mean for their own defensive needs. We have provided some information to India in that crisis—cold weather closing, clothing, some other equipment, some things like that—and over the last several years we have been deepening our maritime cooperation.

I think you will see India, in the very near term, you know, remain committed to their non-aligned approach, but I think they will deepen their engagement with the Quad, and I think that is a key strategic opportunity for us, Australia, and Japan.

Senator KING. That would be a geopolitical major development if India were closely aligned with those other countries.

One final short question. My concern is accidental conflict. A destroyer is in the South China Sea. A Chinese pilot miscalculates and runs into the destroyer. There is escalation from there. What do we have in place in the way of mil-to-mil contact or other mechanisms for defusing accidental conflict? Some very serious worldwide conflicts have begun with accidents.

Admiral DAVIDSON. Thanks, Senator, for that. You know, first, the Chairman of the Joint Chiefs and all of our service chiefs, as well as the Secretary of Defense, have routine communications with their counterparts in China. There is no doubt about it. But I would assure you that, you know, 99.xx percent of the encounters we have with the Chinese, at sea and in the air, are safe and professional. That goes down all the way to the communications that transpire between our two nations when we are occupying the same tactical space. Those remain safe and professional.

The repeated narrative of miscalculation, you know, was really borne from China, because I hear it through diplomatic means. They are threatening other nations of a miscalculation in order to

deter us from doing what is rightfully the international operations that we do in the East China Sea and South China Sea. We will continue to endeavor to keep our aviators and our mariners properly informed of the risks that were out there. But make no mistake about it, our expectation is that China conduct themselves safe and professionally at sea, and should going forward.

Senator KING. Thank you. Thank you, Admiral.

Chairman REED. Thank you, Senator King. Senator Scott, please.

Senator SCOTT. Thank you, Chairman Reed. Admiral, thank you for your service and the men and women you command for what they do every day to defend the freedom of this country.

My first question is about Taiwan. I think you agree that we have got to prevent Communist China from controlling Taiwan. It is a strategic necessity for the United States, and the loss would devastate our ability and the ability of Japan to counter China's aggression. You agree with that, right?

Admiral DAVIDSON. As a combatant commander out there in the Indo-Pacific, I have an obligation to support the Taiwan Relations Act, and in a geostrategic sense I think it is critically important to the United States' global status, yes.

Senator SCOTT. I introduce the Taiwan Invasion Prevention Act to end the United States strategic ambiguity about Taiwan. I think it is time for the United States to state clearly that we are not going to allow Communist China to invade and subdue Taiwan, and that both in Taiwan and the United States we have got to invest the right resources—weapons, training, and dialogue—to ensure that General Secretary Xi understand that he is not going to gain anything.

So what are your thoughts on that?

Admiral DAVIDSON. Sir, I wake up every day, you know, trying to assess the dynamic nature of the geostrategic environment, and, you know, frankly, we ought to be thinking about these things every day. I would submit that we have got more than 40 years of the strategic ambiguity has helped keep Taiwan in its current status. But, you know, these things should be reconsidered routinely. I would look forward to the conversation.

Senator SCOTT. Do you feel comfortable that both the United States and Taiwan are moving forward in a manner that they are going to be able to defend, with our support, if there was an invasion?

Admiral DAVIDSON. I think it takes our continued support, Senator, and key to that is consistent and persistent arms sales to Taiwan in order for them to continue their capability going forward.

Senator SCOTT. How much effort or time do you put into Indonesia, and can they be a check on Communist China's aggression?

Admiral DAVIDSON. I am sorry. Could you say the question again?

Senator SCOTT. On Indonesia, can they be much of a check on Communist China's aggression?

Admiral DAVIDSON. I have cooperative efforts with Indonesia, in the maritime especially, and a deepening relationship. We do a number of exercises together. I would say Indonesia is very concerned about Chinese activities, particularly when they infringe in or around the waters of Indonesia going forward, and I think that

Indonesia is an opportunity for the United States to deepen our relationship with. With China, it is just one of the things we need to be thinking about together.

Senator SCOTT. How well is the ability to communicate being done with our allies there, whether it is Taiwan or South Korea or Japan? I mean, like what Senator King was talking about, the chance that there would be an inadvertent mistake, and is there the ability to, even on our side, share information well enough to help prevent something?

Admiral DAVIDSON. We proposed, in our 1241 assessment for the PDI, a multi-partner environment, which is information technology (IT) that I think would raise the surety of the cybersecurity of what we transmit back and forth between our allies and partners in the region. It would enable us to, as well, not only protect information but deepen collaboration on key strategic and military issues like this as well, yes.

Senator SCOTT. How well is Huawei or other companies, Chinese companies, been able to infiltrate the communications systems in these countries that we rely on as allies? Or are we giving China the ability to be able to shut down communications pretty easily, which would impact our own ability for our military to discuss things with our allies?

Admiral DAVIDSON. That is certainly something that we have to be on the lookout for. We have been deeply engaged over a couple, 3 years about the vulnerability that Huawei equipments would present in any kind of allied structure. To be frank, given what I know of the threat I would want to withhold any information-sharing or equipments that would rely on that.

Senator SCOTT. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Scott. Let me now call on Senator Peters via Webex.

Senator PETERS. Admiral, thank you for being with us today. Thank you for your continued service to our country, as well. I appreciate all of your efforts.

Admiral, Chinese hostility towards Taiwan and of aggression in the South China Sea and certainly the military growth that we are seeing from the Chinese requires a conventional deterrent. But unrestricted warfare also requires comprehensive deterrence, as you know. I think Admiral Mullen described it as "two challenges and one fleet."

So to my question to you, Admiral, is, where do information warfare and low-intensity conflict fit into your priorities within your command? I ask because the PDI does not appear to project growth for the Joint Task Force Indo-Pacific (JTFIP), and the question, is it simply a low-cost endeavor or does it reflect a more limited role in the overall strategy that you are pursuing?

Admiral DAVIDSON. Well, it is not meant to be a limited role at all, Senator. I do think it is a low-cost effort. That said, much of what we have accomplished with Joint Task Force Indo-Pacific, looking backwards, in the years past, has been taken out of hide in order to properly man it and equip it. I am trying to round out the investments there so that the shortcomings I have taken in the rest of the portfolio, you know, that JTFIP does not come at that

expense into the future. But I think it is actually key to our deterrent approach going forward.

Senator PETERS. Thank you, Admiral. You know, a partner of government that shares our view on regional security landscape, that may not necessarily reflect the majority view of its own society, even when it is combined with security cooperation, so a constant tension for those governments. So my question is related to how INDOPACOM can actually bridge this gap through civil-military initiatives. So my question for you, Admiral is, to what extent do you see initiatives such as Pacific Angel and the Embassy Civil-Military Support elements playing a role in your command strategy towards China, specifically?

Admiral DAVIDSON. I think they are key efforts as well, Senator. We were talking earlier about a whole-of-nation approach to meet these challenges, and those two organizations you highlighted help knit together multi-agency efforts in that particular regard.

Senator PETERS. So a U.S. Army Pacific element, Task Force Oceana, has a continuous presence on ten Pacific islands, using two-person augmentation teams that kind of shape the physical and the informational environments in those places. How do you believe we can better enable these units to make sure that our strategic message is having the impact that we would like it to have?

Admiral DAVIDSON. Well, it is an element in my 1251 request for the PDI. We call it Operation Pacific Resolve writ large. But the proper resourcing of it is to do precisely what you have asked for, to deepen, first, our interagency relationships, and then, as well, to deepen our partnerships with other nations on matters of concern to those other nations, because that is really the basis of our relationships across the region. The Army's involvement, and indeed, all the service components have an approach out here that is very similar. Their execution of it is critical to our overall strategy in the region, and frankly, it is the day-to-day connectivity with counterparts on the ground, in the air, and in the maritime, and all those places.

Senator PETERS. Well, thank you, Admiral. I appreciate those responses. Mr. Chairman, I yield back.

Chairman REED. Thank you very much, Senator Peters. Now let me recognize Senator Blackburn via Webex.

[No response.]

Chairman REED. It appears that we have some communications issues, and I will recognize Senator Tuberville.

Senator TUBERVILLE. Thank you, Mr. Chairman. Admiral, thank you for your testimony today. I am glad to hear you call it Indo-Pacific. You know, I am sure China would prefer we not use that word because of a democracy and how big of an ally they are for us. I have heard several people, even in this building, call it something else.

But, you know, we heard for years the United States needs to turn its attention to the Indo-Pacific, and the U.S. has invested $20 billion since 2014 in the European Deterrence Initiative, but we have not done much in the Pacific.

Here are my questions. Explain very briefly, the Aegis Ashore system. Could you explain that, explain the Aegis Ashore system? Could you explain that?

Admiral DAVIDSON. Thank you for the question, Senator. Aegis Ashore is a system that has, in fact, already been developed. We have built and are employing one actually already in Romania, and there is one building and imminently operational in Poland as well, and it is to help NATO with the defense of Europe. It is, essentially, a radar. The command and control, the information technology, communications connectivity, and the interceptors, missiles, that are capable of defeating ballistic missile, cruise missile threats in and around today.

You know, an Aegis Ashore system on Guam, a fixed site on Guam, would enable 360-degree defense of Guam from any military attacks from China, whether they come by sea, by air, or by ballistic missile, in the future. It is technology that is available today. We have built it ashore, we have built it at sea, and it is our number one priority for funding in Guam.

Senator TUBERVILLE. I am sure Putin is real fired up about us putting one in Poland, but that is all right. That is one of your priorities. Is that still going to be your priority for Guam?

Admiral DAVIDSON. We need to have a mix of operational and defensive capability out there, and in my own analysis and my work with the Missile Defense Agency it is the key shortcoming for the defense of Guam at this point.

Senator TUBERVILLE. Yeah. Thank you, Admiral. I yield.

Chairman REED. Thank you very much, Senator Tuberville. I will now call upon Senator Manchin. Senator Manchin, please.

Senator MANCHIN. Thank you, Mr. Chairman, and thank you, Admiral, for your service, and I am sure you are looking forward to your retirement. That has to be good for your family, but I know we will be seeing more of you in a different light, I am sure.

Sir, basically on Japan, has Japan changed its position on Aegis?

Admiral DAVIDSON. Japan has reconsidered its pursuit of two Aegis Ashore sites. It has already committed funds to it. They are still working their way through really a base of alternatives that I think include both a disaggregated posture between land and sea as well as sea and land options.

Senator MANCHIN. Was it mostly from just public opinion, public discourse with it, more so than military decisions?

Admiral DAVIDSON. The reason to roll it back?

Senator MANCHIN. Uh-huh.

Admiral DAVIDSON. The siting of the initial Ashore sites that they established I think ran into some local political concerns that had not been worked through before they made the decisions, so they are trying to work through those local politics.

Senator MANCHIN. Beyond the Aegis Ashore system in Guam, what further missile defense capabilities do we need in the Pacific, and where do you believe they should be located?

Admiral DAVIDSON. You know, for fixed sites, I mean, that is the one I am advocating for. You know, one of the benefits it provides us is it frees up our sea-based assets, our destroyers, to move with the maneuver forces, protect the carriers, protect the amphibious forces, and to protect more widely dispersed land sites that we

might be operating from, on behalf of the Air Force, the Army, the Marines, et cetera. That is why I am pursuing that, and that is the sole major structure at this point.

We do have existing capabilities, as do our allies and partners, when it comes to some shorter-range air defense threats.

Senator MANCHIN. Hypersonic weapons may be one of the biggest threats, based on Russian and Chinese development and the lack of defenses against these types of weapons. Acknowledging that we are not in the classified portion of our hearing, which we were this morning, can you tell us, are United States capabilities in hypersonic weapons sufficient, based on the capability of Chinese defenses against our conventional assets? How are we able to defend ourselves against hypersonics?

Admiral DAVIDSON. If you do not mind, Senator, I would like to take that one for the record and do it in a classified way, so that it is clear.

Senator MANCHIN. So I do not know whether this might be in the same category. How vulnerable are we to Russia and Chinese hypersonic weapons in the Pacific theater, and are you satisfied with the capabilities being developed to counter the threat? Do we consider that a threat in the Pacific theater, and are we developing anything that we can help protect in that area?

Admiral DAVIDSON. Both China and Russia are developing hypersonic weapons. We are in the research and development (R&D) stages of development as well, and much more work needs to be done to provide for the defenses, you know, an operational system that would provide for the defenses. Frankly, it is going to take a mixture of what we put on land and at sea as well as what we can put in space to actually defend against those going forward.

Senator MANCHIN. According to the World Economic Forum, by 2030, your area of responsibility, or that you have had, your area of responsibility, will be home to many of the world's megacities, that will continue to present vast, complicated governance issues, and my fear is that these governments will look to an authoritarian China as a model, rather than the United States. So my question would be, from a military perspective, what are some meaningful steps that can be taken to help leaders in India, Indonesia, Japan, and the Philippines so that they don't start looking at authoritarianism as the way to go?

Admiral DAVIDSON. I think we have to recognize we are in a competition here, Senator. China's Belt and Road Initiative actually has a component that is trying to enable smart cities globally, where all cyber connections would lead back to China, which we have to highlight the threat that that presents to others. Again, a whole-of-government approach—have to be willing to compete in that environment to help the infrastructure and advances in these other cities, even if it is only advice.

Senator MANCHIN. Where do we need to expand the programs to ensure allies are capable and that we have appropriate interoperability in the case of a conflict in the Indo-Pacific region?

Admiral DAVIDSON. My key objective in this year's budget is to pursue this mission partner environment, to help raise the information technology connections between our allies and partners in the region, build collaborative efforts in operations and planning,

highlight concerns to these individual nations, and have the kind of resiliency in the networks that we need.

Senator MANCHIN. Has any thought been given to increasing those programs with India and our partners in the Indo-China peninsula, to provide a barrier and distraction to China's efforts in the South China Sea?

Admiral DAVIDSON. Absolutely. That is at the core of our effort.

Senator MANCHIN. Thank you, Admiral.

Chairman REED. Thank you, Senator Manchin. Now I would like to recognize Senator Blackburn via Webex.

Senator BLACKBURN. Thank you, Mr. Chairman, and Admiral, thank you for your time this morning. I know that we are talking a lot about the Indo-Pacific and China and the problems that we have there, and I am going to stay kind of with the same line of questioning that you have had with Senator Manchin.

Our nuclear triad, do you agree that we should be modernizing, that that would be a valid and convincing deterrent?

Admiral DAVIDSON. Yes, absolutely, ma'am.

Senator BLACKBURN. Taiwan, let's talk a little bit about that. I know you mentioned that earlier, in one of your responses. What should we be doing to increase our bilateral military exercises with Taiwan, or multilateral exercises with others in the region or professional military development?

Admiral DAVIDSON. You know, to your last point first, ma'am, I think there is opportunity to help in professional development when it comes to Taiwan. We think that they have some specific issues that could help provide for their defense, you know, better reserve corps, for example, better response. I can tell you, Sergeant Major Shorter, who is sitting behind me here, has had a longstanding professional development dialogue with his counterparts in Taiwan as well.

When it comes to exercises, we at U.S. Indo-Pacific Command, we do periodically provide—actually, it is annually provide some exercise support to Taiwan's major exercise, Han Kuang, during the course of the year. We help provide some observers to help understand how Taiwan thinks about their defense, what their exercises exercise, you know, what that exercise contribution is to the advancement in their doctrine within Taiwan, and then to deepen our relationships as well.

Senator BLACKBURN. On the fusion centers, I had included some language in the 2021 NDAA to support an increased funding for these regional fusion centers. I would like for you to talk just a little bit about what opportunities arise for China if we do not continue an aggressive support for these, and then if you want to highlight the changes that you think we should be making as we look at the Indo-Pacific region in helping to strengthen our allies using these fusion centers.

Admiral DAVIDSON. Yes, ma'am. Thank you for the question. Setting China aside, which really is not at the core of these fusion centers, what we envision in the region is three collaboration networks, one focused mostly on the Indian Ocean, one focused on counterterrorism and centered in Southeast Asia, and then one to be sited somewhere in the Pacific as well. But it is really to knit together—as we have articulated earlier, we do not have a multi-

lateral alliance network. We have a series of bilateral alliances and partnership, and some of the concerns of the Nations that would be involved in these individual centers, you know, there is kind of a common concern that would enable dialogue and cooperation.

So, you know, just speaking of the Counter-Terrorism Information Facility (CTIF) in Singapore, the Counter-Terrorism Information Facility, they are concerned about Islamic State of Iraq and Syria (ISIS) in East Asia, ISIS in the Philippines, the potential of some ISIS foreign fighters returning to that area. It is just an opportunity for military and civilian entities in Indonesia, Singapore, Thailand, Malaysia, Brunei, with United States and Australian support, to come together and speak about it.

In the Pacific, as just one other example, it is really to focus on illegal, unregulated, unreported fishing and other trafficking threats in the region, like narco-trafficking and human trafficking and things like that, and to provide a reliable network where multiple bilateral partners can come together and speak in these area.

You know, because of the very bilateral nation-to-nation nature of the region, finding areas of common cause I think are critically important, and we are trying to fill that need.

Senator BLACKBURN. Thank you so much. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Blackburn, and now let me recognize Senator Duckworth via Webex.

Senator DUCKWORTH. Thank you, Mr. Chairman. Admiral Davidson, it is good to see you again. I am sorry I was not able to come visit in 2020, but hopefully 2021 I will be back in the Indo-Pacific region.

I don't have to tell you about the unique challenges, the tyranny of distance in the Indo-Pacific's geography and great power competitors and what they present to our supply chain and logistics enterprises. I know we have to invest in long-range fires and other critical capabilities, but I hope that you share my concern that we will not be able to build a combat-credible deterrence if we do not have the logistics capability and capacity to realistically support our complex military op plans.

Admiral Davidson, please elaborate on your request for funding for a Pacific movement and coordination center. What would this funding provide for you and why is it critical for achieving your objectives in the Indo-Pacific region?

Admiral DAVIDSON. Thank you very much, Senator. We had hoped to see you out in the Indo-Pacific as well.

You have laid the basis for this quite well. We have added a fifth pillar into the 2022 budget because we did not think that joint logistics and sustainment was getting the requisite focus as we talked about all these other issues.

So the movement center, in and of itself, is to enable our ability to work with the tyranny of distance, have more resiliency in all the multiple processes that go into logistics, from multiple sources. Some are governmental, some are commercial, et cetera, and then to start to deal in the contested environment, the kind of threats that we might see disrupting our logistics writ large.

So we have highlighted it in the 1251 report for this year and we will keep joint logistics on there as a pillar that we need to focus on, going forward.

Senator DUCKWORTH. Thank you. So let's go further into this. How can the military services and other DOD agencies play a role in developing the logistics systems capabilities and capacity required to support these op plan? You know, I am thinking of everybody can play a part in this. Can you speak a little bit to what the other agencies can do? What can we do right now to address these issues?

Admiral DAVIDSON. Well——

Senator DUCKWORTH. I speak to things like, you know, U.S. Transportation Command (TRANSCOM), and we do not have enough tanker aircraft, we do not have enough hulls in the water, that sort of thing.

Admiral DAVIDSON. Yeah, no, you have got it exactly right. I mean, there is deep need to recapitalize the military sea lift and anything that—plus those assets, not anything, those assets that Maritime Administration provides. I think recapitalization there is necessary. We are closely partnered with TRANSCOM on the tanker network around the globe. I think writ large you will see the Air Force and TRANSCOM working together, trying to figure out where new capability like the KC–46 should be added, what is the best positioning for it in order to make its availability and sustainability sound while contributing to the overall transportation network as well. You know, that needs to be recapitalized—excuse me, examined. The posture needs to be examined as it goes forward as well.

There is a deep focus on the issue of contested logistics as well. It is one of the doctrinal concepts that the Joint Staff is trying to advance. We are deeply involved in that conversation and look forward to its output here during the course of this year.

Senator DUCKWORTH. Could we carry out the op plans for the Indo-Pacific region without the fifth pillar that you are proposing?

Admiral DAVIDSON. Oh, ma'am, all the combatant commands depend highly on logistics. In our theater, I do not have the benefit of internal lines of communication. We have got to be able to protect these external lines of communication, you know, deliver some actually to our allies and partners in the region as well, and then defend it all in order to maintain the posture that we have out there in the region.

Senator DUCKWORTH. Thank you. I yield back, Mr. Chairman.

Chairman REED. Thank you very much, Senator Duckworth. Let me recognize Senator Hawley via Webex.

Senator HAWLEY. Thank you very much, Mr. Chairman. Admiral, thank you for being here and congratulations on your many decades now of outstanding service. On behalf of your fellow Missourians I just want to say thank you for all that you have done for the country, and we are very proud of you in the state of Missouri, so thank you for your service.

Let me ask you a question that I posed to Deputy Secretary of Defense Kathleen Hicks in her testimony a couple of weeks ago. She testified that it is essential for the United States to maintain the ability to defeat a Chinese fait accompli against Taiwan in

order to strengthen deterrence against China. Do you agree with Deputy Hicks on this point?

Admiral DAVIDSON. Absolutely.

Senator HAWLEY. Do you agree with Deputy Hicks that a strategy of denial is essential for deterring Chinese aggression?

Admiral DAVIDSON. Yes, and that is core to our approach in the 1251 report.

Senator HAWLEY. Yes, it is. Let me just give you a second to explain to the Committee why it is important you think to strengthen our forces west of the International Date Line in order to effectively achieve deterrence by denial.

Admiral DAVIDSON. Thanks, Senator. You know, our posture in the region must be demonstrative of the capabilities that the United States could and would bring to bear in a crisis—its capacity, numbers, and the will of the United States to prevent the fait accompli that you highlighted.

We fulfill that not only through—and this goes back a little bit to what Senator Duckworth had to say—not only through people focused so much on fires and platforms, but it is the whole of the apparatus that makes that sound. It is the logistics, it is the intelligence and warning, it is all that stuff that buys you the time in order to present options to the national security apparatus here, and the Nation, should the day-to-day competition turn to crisis.

Importantly, what we are trying to do is every day that China gets out of bed and peels back the curtain and sees the United States and its allied and partner network out there in the Western Pacific, assuring its own access, that it thinks I do not want to mess with that capability and that capacity and what I know to be the will, and closes the curtains, and is not going to fight. You know, that is what we are trying to achieve.

Senator HAWLEY. Yeah, let me just ask you about the window of conflict with regard to China. Some are saying that we do not really need to worry about potential conflict with China until 2035, or even later. You said last week China could achieve military overmatch in the region as soon as 2026, and that if it does—and I am quoting you now—it could like choose to forcibly change the status quo in the region.

Can you just elaborate on those comments?

Admiral DAVIDSON. Yeah. We have indication that the risks are actually going up. I have to be a little delicate here, Senator, because of the classified nature of some of the material, but I think, demonstratively, what you are seeing China do in the region—in Hong Kong, in the South China Sea, and the East China Sea, some of the malign military actions that have taken in and around Taiwan and elsewhere in the East China Sea and South China Sea, are indicative that China's pace is quickening, and we need to be postured to prevent that quickening from happening.

Senator HAWLEY. You also said that if China does succeed in changing the status quo that that change would likely be permanent. Tell us what you meant by that.

Admiral DAVIDSON. Well, they have made it quite plain that they would wish to supplant U.S. leadership around the globe. I am seeing a whole-of-government effort in trying to fulfill that ambition, and they are trying to do that by mid-century. They are knocking

down waypoints that they think stand in their way of achieving that. I would say the most waypoint that they have knocked down is the establishment of the—or the revocation of the national security law in Hong Kong, and the obliteration of one country and two systems there. That, fundamentally, is, you know, I think sending a chill across the region about what Chinese ambitions might be and who might fall ill of Chinese design.

Senator HAWLEY. I have got just a few seconds here. Let me ask you—actually, give you the opportunity actually to comment about the Guam defense system. You have spoken about the need for this on a number of occasions. Just give us a sense of what will happen to our ability to deter Chinese aggression if we do not strengthen Guam's air and missile defense systems.

Admiral DAVIDSON. It is the key piece that we are missing that signals to the region that the U.S. is a reliable and committed security partner, that we are there to defend not only U.S. territory but our interests abroad, and in combination with other capabilities. A more distributed posture, a higher level of lethality in our air and maritime and ground forces that might be rotating or present in the region puts forward that total deterrent posture that helps the deter-by-denial objective, that they cannot knock Guam out with an easy shot and keep us out of the fight to present that fait accompli that Deputy Secretary Hicks talked about.

Senator HAWLEY. Great. Thank you, Admiral. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hawley. Now via Webex I would like to recognize Senator Rosen.

Senator ROSEN. Thank you, Mr. Chairman, and thank you, Admiral, for being here, for your service, you and your team, all the work that you have done.

I would like to focus today a little bit on how using technology can potentiate our strategic planning and, of course, the Pacific Deterrence Initiative. So let's talk about regional data-sharing for a moment. America's longstanding advantage in the Indo-Pacific relies on our network of alliances with regional democracies. These partnerships are the cornerstone of promoting a free and open region. As part of the mission partner environment, U.S. INDOPACOM seeks to develop an integrated architecture to expand data-sharing amongst like-minded nations through the use of information fusion centers, joint centers where allies can share information using cloud-based technologies, integrated systems, and secure access control.

So, Admiral Davidson, can you outline your plans to establish an interoperable, digital network in the Indo-Pacific, and how does an integrated IT architecture strengthen our ability to share information and really fight together with our allies and partners?

Admiral DAVIDSON. Thank you for the question, Senator, very much. We have described the MPE in our 1251 assessment, and we hope it will be resourced by the PDI initiative. It is technology and capability that is actually evident, you know, now. It is not new development that we need to do.

But sharing with our allied and partner network around the region would do a few things, to your last point. One, raise the cyber resiliency of the information that we share and others share with

us and with each other, and then, in turn, provide reliable connectivity for us to collaborate, to cooperate, to plan, to highlight threats in the region to the level of concern that the Nations participating would have, all the way from illegal, unregulated, and unreported fishing on to the higher threat concerns in the region with other partners. But it would give us the assurance that the information that were being shared couldn't be disrupted or could not be shared outside the confines of the network as well.

Senator ROSEN. Thank you. I would like to move to, and we spoke about this a little bit earlier, but virtual military exercise, because we have to overcome the challenge of joint training across long distances in the Indo-Pacific. So U.S. INDOPACOM, I know that you are seeking to initiate Pacific Multi-Domain Training and Experimentation Capability, or PMTEC. This initiative would include creating virtual coalition training complexes, linking together testing and training ranges in the United States, like Nellis Air Force Base and Fallon Range Training Complex in my home state of Nevada, with allies like Japan and Australia.

So can you talk a little bit about how the virtual training environment can transform the way U.S. Forces train with allies in the region, how it allows us to model and try different things out in a virtual setting with our allies and partners, and maybe even increase the frequency of these training missions.

Admiral DAVIDSON. Yes, ma'am. Thank you very much. As our own joint force has brought in now what we call multi-domain capabilities, meaning space and cyber capability as well as what we see in the terrestrial environment, right—air, land, and sea—as well as adapt the capabilities, or modernize the capabilities in the terrestrial environment, fifth-generation fighters like the F–35 and the F–22, integrated air and missile defense like our Aegis ships, THAAD radars, and things like that. We need to be able to stress the joint force in a dynamic training range in a way that cannot occur in what was 20th century-developed ranges.

Each one of these ranges that we have talked about—Alaska, what you have highlighted in Nevada at Fallon and Nellis, what we have in Hawaii, for example, at PTA and PMRF in Kauai, and what we hope for at the Commonwealth of the Northern Mariana Islands, Joint Military Training Initiative (CJMT), the training range out in Guam, and Commonwealth of Northern Mariana Islands (CNMI)—we want to deliver some connectivity, range to range, and the ability to inject, you know, computer-generated, virtual and constructive, as we call it, capabilities in there so that we can more widely stress the joint force, test it, train it, and, oh, by the way, if we wanted to keep anything secret that we did not want a satellite or an intelligence-gathering ship to observe, do it in an entirely virtual environment.

We need to extend PMTC as we have developed it to these ranges. We think it is transportable, we think it is sharable between these ranges, and we think it will bring a much higher level of fidelity of training to the very disparate forces we have over vast areas, from Alaska to California to Hawaii and westward, going forward.

Senator ROSEN. Thank you. I appreciate that. I look forward to working with you on developing all the new skill sets that our military needs to perform these operations. Thank you.

Chairman REED. Thank you, Senator Rosen. Now let me recognize Senator Kelly.

Senator KELLY. Thank you, Mr. Chairman, and thank you, Admiral, for joining us today. I have got a couple of questions here about command and control and communications, and we rely heavily on satellites to do that.

In January of 2007, China conducted an anti-satellite test against one of their own nonoperational weather satellites with a kinetic kill vehicle, and it has been reported that in the years since China has an operational capability that can attack satellites in low-earth orbit and that they are developing the capability that goes all the way out to geosynchronous orbit.

So how does this affect the strategic balance of power in the region, from your perspective?

Admiral DAVIDSON. Thanks for that, Senator. Yes, both China and Russia have demonstrated capability to disrupt satellites, you know, testing capabilities on their own assets in the past, as you have articulated. It clearly, I think, demonstrates that space, which we have long considered a domain in which would be unthreatened for the United States, the potential is there, actually, for it to be threatened.

We have to build resiliency into our space apparatus. That happens with other space assets, it happens with creating airborne and other terrestrial alternatives to fulfill that, and it changes the calculus in space as well. We have to recognize that, again—and this goes back to some earlier comments I made about deterrence theory. We are not going to be able to play defense alone in this particular regard. If we cannot demonstrate to others that their capabilities in space might be at risk, then we run the risk of a deterrence failure.

That said, the space layer is critically important to how we sense in the strategic nuclear deterrent, how we communicate across the joint force, and even how we sense and distribute information to the conventional forces as well. Its resiliency is incredibly important to us.

Senator KELLY. As you are gaming out scenarios with the PLA, do you consider this capability that they have obtained?

Admiral DAVIDSON. Yes, absolutely.

Senator KELLY. Okay, and then do you have sufficient intelligence and surveillance capability to keep up with the changes that they are making with regards to their space systems now?

Admiral DAVIDSON. I would have to allow General Raymond at the Space Force and General Dickinson to respond at Space Command (SPACECOM) as well. But writ large, over all the capabilities that we see China developing there is a need for more intelligence, surveillance, and reconnaissance of their test and development, in particular, and then, you know, observing what they are doing in the training and exercise realm as well, writ large. I would be surprised if General Raymond and General Dickinson did not agree that that was necessary in space too.

Senator KELLY. All right. Thank you. I yield back.

Chairman REED. Thank you very much, Senator Kelly. Admiral Davidson, thank you again for your distinguished service in the Navy and the Nation, to your family who endured as much as you, in many cases, and once again, please convey our appreciation and profound respect for the men and women under your command. Thank you, Admiral Davidson. This is the end of the hearing.

[Whereupon, at 11:50 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR RICHARD BLUMENTHAL

SUBMARINES

1. Senator BLUMENTHAL. Admiral Davidson, how important is it for your forces to have the most advanced technological capabilities in the undersea domain?

Admiral DAVIDSON. It is critical for USINDOPACOM to remain on the leading edge of advanced undersea technology. The *Virginia* and *Columbia*-class submarines ensure the United States maintains its advantage in undersea warfare for the foreseeable future. The *Virginia*-class represents our most advanced asymmetrical advantage in countering the PRC's anti-access area denial strategy, guaranteeing the United States ensures access to the sea-lanes of communication in the first-island chain. The *Virginia*-class submarine's advanced technology is difficult to detect and has the offensive capability to hold any maritime or terrestrial target at risk.

Meanwhile, the *Columbia*-class ballistic missile submarine provides the most survivable leg of the nuclear triad and provides an invaluable multi-mission platform as a replacement for the aged *Ohio*-class submarine.

2. Senator BLUMENTHAL. Admiral Davidson, what has China been doing, that you are aware of, to close the technological gap in undersea capabilities with the United States?

Admiral DAVIDSON. China recognizes the importance of the undersea domain and is pursuing a range of capabilities to close the gap. China is fielding and integrating dedicated anti-submarine patrol aircraft and surface ships, installing and operating undersea monitoring systems, and investing heavily in unmanned I autonomous sensors to improve situational awareness. Many modem PLA Navy multirole surface warships feature advanced anti-submarine weapons and sensors. Additionally, the PLA Navy continues to field improved submarines, such as the Type 039A/B *Yuan*-class diesel-electric air-independent-powered attack submarine, and will add its first guided-missile nuclear attack submarine by the mid-2020s. In combination, these developments provide the PRC with improved undersea awareness, more lethal anti-submarine warfare capabilities, and a greater offensive strike capability.

3. Senator BLUMENTHAL. Admiral Davidson, do we have the capability to counter these emerging threats from China?

Admiral DAVIDSON. Based on current threat reporting, USINDOPACOM is poised to counter the emerging threats from China provided we fulfill our current requested force requirements within the AOR. Currently, United States Anti-Submarine platforms are more technically advanced and provide the ability to counter Chinese submarine emerging threats. The United States must continue to resource all Anti-Submarine warfare platforms, including submarines, cruisers, destroyers, and maritime patrol aircraft. The United States must also maintain funding for new platforms such as the *Virginia*-class submarines to ensure adequate margin as new Chinese threats emerge.

NON-TRADITIONAL NATIONAL SECURITY THREATS

4. Senator BLUMENTHAL. Admiral Davidson, what steps would you recommend the Department of Defense (DOD) take in the Indo-Pacific to swiftly respond to emerging nontraditional national security challenges, including global health and climate change issues?

Admiral DAVIDSON. The United States should leverage DOD capabilities as an important player to address the global health security issues we currently face. While DOD can provide unique capability for rapid response to a global threat, this must be carefully regulated with our capacity to maintain the readiness of the joint force. This requires the United States to leverage existing global health security mechanisms such as the Global Health Security Agenda (GHSA) and the Global Partner-

ship Against the Spread of Weapons and Materials of Mass Destruction with U.S. national security priorities.

5. Senator BLUMENTHAL. Admiral Davidson, in your view, are the installations in your area of responsibility (AOR) prepared to face non-traditional threats such as extreme weather due to climate change?

Admiral DAVIDSON. Our installations need work to mitigate the impacts from natural disasters and extreme weather. In particular, the DOD must invest in critical infrastructure that is used to store and maintain our most critical weapon systems and platforms.

6. Senator BLUMENTHAL. Admiral Davidson, DOD's 2019 Climate Change report mentioned that "at Naval Base Guam, recurrent flooding limits capacity for a number of operations and activities . . . that support mission execution." How does this flooding jeopardize U.S. Indo-Pacific Command (INDOPACOM) operations?

Admiral DAVIDSON. The 2019 DOD Climate Change Report states that recurrent flooding impacts operations and activities in Guam not only at the Naval Base, but also at Andersen Air Force Base.

Degraded mission capacity can affect submarines, air mobility and combat aircraft, security forces, and communication units. Guam is a critical element for United States Homeland defense in terms of deterrence, crisis planning, and response to potential adversary actions. Climate change mitigation, protection, and preparedness measures are essential in supporting DOD mission assurance and minimizing the impact to INDOPACOM operations.

7. Senator BLUMENTHAL. Admiral Davidson, do you require additional resources to effectively combat the effects of climate change?

Admiral DAVIDSON. Yes. The Indo-Pacific region experiences frequent natural and manmade disasters, including the negative impacts of climate change. Our Center for Excellence and Disaster Management collaborates with our partners throughout the Inda-Pacific to increase disaster resilience, to include climate change resilience, through humanitarian assistance and disaster response (HADR). I welcome additional resources to expand science and technology (S&T) in areas such as food, water, environmental security, waste treatment, marine environmental management, renewable energy, and HADR.

8. Senator BLUMENTHAL. Admiral Davidson, what can be done to further increase that resiliency of critical installations, such as those in Guam?

Admiral DAVIDSON. To increase resiliency, the DOD must fund critical infrastructure projects on installations consistent with service-prioritized installation MILCON requirements. In addition, the DOD must leverage Energy Savings Performance Contracting (ESPCs) and/or Utility Energy Service Contracts (UESC). These services enable budget-neutral facility improvements options that build resilient base load co-generation power plants to sustain critical mission loads in the event of outages.

CHINA

9. Senator BLUMENTHAL. Admiral Davidson, recently the Chinese launched a large scale cyber-attack on Microsoft's email service, what should the American Public know about that attack and what does that tell you about China's ability and intent to attack the United States?

Admiral DAVIDSON. [Deleted.]

10. Senator BLUMENTHAL. Admiral Davidson, you recently stated that by 2026 the Chinese military could reach the point of "strategic overmatch" with the United States—what do you think needs to be done to counter that projection?

Admiral DAVIDSON. My 1251 assessment lists five focus areas to counter PRC "strategic overmatch":

1) Increase joint force lethality, including investments in integrated Air and Missile Defense, like the Guam Defensive System, which is my number one priority; long-range precision fires; and ISR augmentation.
2) Enhance design and posture, including investments in strategic locations to project power, and dispersal locations to distribute forces.
3) Strengthen our allies and partners, principally by increasing interoperability and information sharing.

4) Modernize exercises, experimentation, and innovation to integrate Service recommended weapons and capabilities that deters adversaries and trains the force.
5) Improve joint logistics and sustainment, including munitions provision, fuel distribution, recapitalization of lift assets, and command and control of those capabilities.

11. Senator BLUMENTHAL. Admiral Davidson, how can we prepare to counter the potential threat of Chinese aggression in all domains, including less kinetic domains such as cyber and disinformation?

Admiral DAVIDSON. Great Power Competition requires USINDOPACOM to compete across multiple domains simultaneously, and none are more competitive than the information and cyber domains. This requires USINDOPACOM to provide a resilient, secure, adaptable, and interoperable information architecture for the United States and its Allies and Partners. This can be achieved by fully resourcing the Mission Partner Environment and accelerating the pursuit of information advantage to include, but not limited to: technologies and concepts that embrace artificial intelligence (AI), machine learning (ML), quantum computing, and more discretion with regard to executing Military Information Support Operations (MISO).

F–35 AND STRATEGIC CAPABILITIES

12. Senator BLUMENTHAL. Admiral Davidson, when you look at the strategic challenges in the INDOPACOM area of responsibilities, is a 5th generation fighter capability like the F–35 is critical to mission success?

Admiral DAVIDSON. Yes, 5th generation fighters, in particular the F–35, are critical for USINDOPACOM to deter its adversaries. 4th generation fighters do not provide the capabilities needed in combat against a near peer adversary or the multi-domain superiority required in the Western Pacific. The integration of stealth and advanced sensors provided by 5th generation fighters is essential in an Anti-Access/Area Denial (A2/AD) environment. Additionally, 5th generation fighters contribute to the necessary multi-domain superiority and increased interoperability with allies and partners.

13. Senator BLUMENTHAL. Admiral Davidson, do you believe the Joint All-Domain Command and Control concept is going to be the most effective way to counter China's emerging technology and enhanced defense posture?

Admiral DAVIDSON. The DOD is still developing the Joint All-Domain Command and Control concept and Services are rapidly developing required capabilities. However, the joint force will likely not fully implement the concept by 2026, which is when China could achieve military overmatch within the region. Regardless of system, USINDOPACOM requires the capability to sense, make sense, and act at all levels across all domains with allies and partners to maintain an advantage over adversaries.

14. Senator BLUMENTHAL. Admiral Davidson, what role does the Air Force play in strategic deterrence, including within the Pacific Deterrence Initiative?

Admiral DAVIDSON. The Air Force plays a significant role in strategic deterrence, most notably in the context of the nuclear triad. Within the context of the Pacific Deterrence Initiative (PDI), the requirements I identified in my Independent Assessment enhance key strategic power projection locations, and improve survivability through divert locations that enhance a distributed force posture. The Independent Assessment also identifies improvements to ranges in the Indo-Pacific that will provide fully instrumented, live-virtual training areas that will enhance all domain integration and improved functional ranges.

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

FREE AND OPEN INDO-PACIFIC STRATEGY

15. Senator HIRONO. Admiral Davidson, China's navy has rapidly grown in recent years—they currently have two operational aircraft carriers in their fleet with a third under construction. At the same time, they have undertaken increasingly provocative actions in the South China Sea, after decades of building artificial islands there. Can you talk about the importance of routine freedom of navigation operations in the South China Sea to support our "Free and Open Indo-Pacific" strategy?

Admiral DAVIDSON. Implemented in 1979 to protect U.S. navigation, overflight, and related interests on, under, and over the seas against excessive maritime

claims, the Freedom of Navigation (FON) program combines diplomatic action and non-confrontational, operational assertions of navigation and overflight rights to maintain U.S. operational flexibility around the globe. FON operations, including regular passage by U.S. warships through strategic waterways, are essential for maintaining internationally recognized rights at sea. U.S. national security and commerce depend upon the freedoms of navigation and overflight of the seas and international law. A significant number of coastal states assert maritime claims that are inconsistent with international law, which-if left unchallenged-could evolve into customary use and thereby limit navigational freedoms that are vital to U.S. national security and global economic prosperity.

PACIFIC DETERRENCE INITIATIVE

16. Senator HIRONO. Admiral Davidson, in what ways does the Pacific Deterrence Initiative (PDI) incorporate environmental security issues into its relationships with key regional allies and partners?

Admiral DAVIDSON. PDI requirements incorporate environmental security objectives in the Significant Security Cooperation Initiatives (SSCI) with our key regional allies and partners. SSCis include capacity building activities as the primary vehicle to inform and educate the intended audience. Typically these activities consist of symposiums, training forums, and subject matter exchanges. PDI requirements will also include fusion centers that promote advanced information sharing and interoperability intended to address common security challenges, including environmental issues.

17. Senator HIRONO. Admiral Davidson, how would proposed PDI spending address the range of environmental challenges facing the United States and our allies and partners, to include sea level rise, coastal erosion, destructive invasive species, and illegal, unreported, and unregulated fishing in the AOR?

Admiral DAVIDSON. According to the NDAA, the PDI intends to enhance deterrence and defense posture in the Indo-Pacific. Current requirements identified in my 1251 Independent Assessment include a networked architecture of fusion centers to address common challenges, such as the effects resulting from climate change and illegal, unregulated, and unreported (IUU) fishing. Reinvigorating funding for the Defense Environmental International Cooperation (DEIC) and aligning within PDI would enhance and strengthen our Environmental Security Program that influences partner nations in the competition sphere. DEIC has been without funding since 2017 causing our Environmental Security Program to compete with Security Cooperation efforts under the Asia Pacific Regional Initiative.

18. Senator HIRONO. Admiral Davidson, thank you for emphasizing the importance of our allies and partners in the AOR—as a follow-up to your answer during our colloquy on this subject in the hearing, can you also discuss in detail how the PDI funding you are requesting would support the Freely Associated States (FAS) and why our FAS partners are so critical to our collective security in the region?

Admiral DAVIDSON. The Freely Associated States (FAS) are strategically located across our economic and defense sea lines of communication. The requirements I identified for PDI effecting the FAS include the Tactical Multi-Mission Over-the-Horizon-Radar (TACMOR) and multiple facilities at airfields and ports. Identified PDI requirements will improve information fusion and data-sharing initiatives that address the effects of climate change; illegal, unregulated, unreported (IUU) fishing; human and narcotics trafficking; transnational crime; and other security threats that are key security challenges for our regional partners. Finally, identified PDI requirements will provide for Security Cooperation programs to build ally and partner capabilities.

QUESTIONS SUBMITTED BY SENATOR ELIZABETH WARREN

INTERMEDIATE RANGE MISSILES

19. Senator WARREN. Admiral Davidson, you recently submitted a report of your investment priorities for the INDOPACOM theater that included $3.3 billion for "highly survivable, precision-strike fires" with a range greater than 500km. You were recently asked at the American Enterprise Institute about access to allied territory west of Guam for these missiles and you said, "there would have to be a policy interaction to do these things going forward." I recognize that the State Department would be formally responsible for leading these negotiations, but have you had any discussions, formal or informal, with your counterparts amongst our Western Pacific

allies and partners specifically on their willingness to host a new class of intermediate range missiles? Based on your experience working closely with our allies and partners, do you believe that there are any who will be willing to host this new missile system(s)?

Admiral DAVIDSON. Expanding ground-based fires helps to enable the maneuver of our maritime and air forces in the Western Pacific, deters our adversaries, improves the stability in the region, and, operationally, forces our adversaries to work harder to find, fix, and finish our maneuver forces. Any formal negotiations to posture ground based long-range precision fires west of Guam is Department of State led. USINDOPACOM routinely conducts military-to-military consultations with allies and partners and welcomes conversations about specific posture initiatives in the Western Pacific. Japan's leadership is anticipating approval of a new missile defense policy that might open the door to increased deterrence cooperation with the United States. It is too early to determine if Japan will host United States missiles; however, any increase in opportunities with Japan for bilateral defense, deterrence, and combined capability development supports efforts to ensure a free and open Indo-Pacific.

20. Senator WARREN. Admiral Davidson, among possible ground-launched missile options with a range beyond 500 km, do you believe that missiles with a longer-range and higher speed capable of striking deep within China would be more contentious with allies than shorter-range anti-ship missiles?

Admiral DAVIDSON. For allies and partners potentially interested in hosting missile strike capability, short-range anti-ship systems are less contentious because these largely represent coastal defense - defending a nation's territory and territorial waters. My 1251 Independent Assessment does include the requirement for long-range strike capabilities to establish a credible deterrent in the Indo-Pacific. Long-range precision strike capabilities, when combined with defensive capabilities, reassures our allies and partners and gives our adversaries pause.

CHINA

21. Senator WARREN. Admiral Davidson, during your testimony you asserted that China "quadrupled their nuclear capability since the turn of the century and they will at least double it during the course of this decade." You also said that if China were to "quadruple their stockpile" they could possibly have nuclear overmatch over the United States by the end of this decade. The United States maintains a total of approximately 3,800 nuclear warheads in its active stockpile according to open source estimates, approximately 1,500 of which are deployed in accordance with New START [Strategic Arms Reduction Treaty]. According to last year's China military power report, China currently has an operational nuclear warhead stockpile in the "low 200s". Can you clarify what you meant in stating that China has "quadrupled their nuclear capability since the turn of the century"? Has China quadrupled the size of its warhead stockpile? Has China quadrupled the number of nuclear or nuclear-capable delivery systems? Has China quadrupled the number of intercontinental ballistic missiles (ICBM) that can target the United States Homeland?

Admiral DAVIDSON. China has at least tripled and probably quadrupled its nuclear warhead stockpile since 2000, from 70 to 200–300. According to a Congressional Research Service report, in 2000 the PRC had approximately 70 nuclear warheads. The China military power report estimate of "low 200s" would represent a three-fold increase. United States Strategic Command estimates the PRC has up to 300 nuclear warheads, representing a four-fold increase.

China has tripled the number of nuclear delivery systems since 2000, from 70 to 210. The same CRS report estimated China had approximately 70 delivery systems (50 silo-based nuclear-capable ICBMs and 20 mobile nuclear-capable MRBMs). Since then, the PRC has greatly expanded the number of mobile missile launchers and added ballistic missile submarines. The China military power report states China's current nuclear arsenal includes all of its land-based ICBMs, some nuclear-capable IRBMs and MRBMs, and *JIN*-class SSBNs. This equals an estimated 210 delivery systems.

China has doubled the number of ICBMs that can target the Homeland since 2000, from 50 to 100.

During my Senate Armed Services Committee appearance, the terms "stockpile" and "delivery systems" were used, sometimes interchangeably. To clarify, over the next 10 years, the PRC will substantially increase both its nuclear stockpile (i.e., warheads) and delivery systems. However, it is only in the latter category that China could exceed the United States.

Stockpile (Warheads): If China quadruples its warhead inventory (800–1200), it would remain below the U.S. total of 1500 deployed warheads under New START.

Delivery Systems: If China quadruples its inventory of delivery systems (840), it would exceed the United States total of 675 deployed systems under New START by 165.

22. Senator WARREN. Admiral Davidson, do you believe that China intends to at least double the size of its warhead stockpile? If so, why do you assess that leaders in Beijing feel the need to pursue a larger store of nuclear warheads?

Admiral DAVIDSON. Yes, I agree with DOD estimates that China will at least double its nuclear capability over the next decade. This is part of Beijing's broader focus on expanding and diversifying its nuclear force, to include developing a nuclear triad with land-, sea-, and air-based delivery platforms. These developments highlight China's strategic intent to maintain a survivable nuclear force as a global power and may portend a shift away from what it has previously termed as a "minimum deterrent" capability.

Beijing's lack of transparency regarding the scope and scale of its nuclear program should be a concern to all nations. I strongly support continued efforts to encourage Chinese participation in nuclear arms control discussions.

23. Senator WARREN. Admiral Davidson, given your assessment of China's nuclear force plans over the next decade, do you believe the United States should increase the number of nuclear warheads in its stockpile? If so, how do you think leaders in Beijing would respond?

Admiral DAVIDSON. Any reduction in U.S. nuclear delivery capabilities to include reduction from a triad, stagnation of the development of modern delivery systems, or reductions in the United States nuclear stockpile could prompt China to question our commitment to safe, secure, and effective nuclear deterrent capabilities. As the threat and associated defenses evolve, our capabilities to defeat those targets must evolve as well.

Beijing believes the United States is pursuing a strategy of containment, and will evaluate any change to U.S. strategic force posture, placement, or quantity through this lens as it determines whether and how to reconfigure its own nuclear forces. Regardless of U.S. actions, China will continue its nuclear modernization initiatives.

24. Senator WARREN. Admiral Davidson, you have repeatedly said, including in your hearing testimony, that the greatest danger to the future of the United States continues to be an erosion of conventional deterrence with respect to China. In its fiscal year 2021 Budget Request, the Trump administration proposed to cut the Navy's shipbuilding account—in particular a second *Virginia*-class attack submarine—to fund an unplanned, multi-billion dollar cost overrun for the National Nuclear Security Administration's nuclear weapons program. Did you support that decision?

Admiral DAVIDSON. Maintaining the build rate for the *Virginia*-class submarine should remain one of the United States' top DOD priorities. The *Virginia*-class submarine provides significant conventional deterrence through its capability to help control the seas and project power in a highly contested environment and has a high rate of survivability, which is absolutely necessary in an Anti-Access/Area Denial (A2/AD) environment. These innovations must be balanced with other top DOD priorities such as the erosion of the United States' nuclear deterrence capability.

25. Senator WARREN. Admiral Davidson, you believe that mitigating an erosion of conventional deterrence with respect to China should be the Defense Department's top priority?

Admiral DAVIDSON. Yes, I do. The erosion of conventional deterrence is the greatest danger for the United States in its strategic competition with the People's Republic of China (PRC). History shows that the People's Liberation Army typically undertakes military operations when it has a size and capability advantage. As we see U.S. conventional deterrent erode, the PRC will likely take on more risk to challenge the United States and its allies in the region.

26. Senator WARREN. Admiral Davidson, do you believe that the United States can safely mitigate an erosion of conventional deterrence by relying more heavily on nuclear weapons?

Admiral DAVIDSON. No, the United States needs to reestablish its conventional deterrence capacity. A conventional deterrent posture is necessary to prevent conflict, protect U.S. interests, and to assure allies and partners. The PRC has a growing nuclear arsenal. The expansion and modernization of their nuclear arsenal carries

with it a growing risk of inadvertent escalation, underscoring the need to maintain and improve conventional deterrence. To simply rely on nuclear deterrence could effectively remove all other options short of nuclear exchange, should conflict occur.

QUESTIONS SUBMITTED BY SENATOR JAMES M. INHOFE

ROLE OF F–35 IN INDOPACOM SCENARIOS

27. Senator INHOFE. Admiral Davidson, some Members of Congress have recently expressed skepticism on the need for and value of 5th generation fighter aircraft—specifically the F–35. Meanwhile, China has established a formidable integrated air defense network, particularly across the Taiwan Strait, and has operationally fielded its first 5th generation stealth fighter, the J–20. Your written testimony highlighted 5th generation fighters as helping create the opportunity to "Regain the Advantage" vis-á-vis China. Given China's expanding anti-access/area denial (A2/AD) capabilities, can you tell us what you've seen in the intelligence estimates and/or war game results when 4th generation vice 5th generation aircraft attempt to operate inside of the A2/AD bubble. In your estimation, how important are 5th generation aircraft like the F–35 to deterring Chinese aggression?

Admiral DAVIDSON. In war-gaming, 5th generation fighters exceedingly out-perform 4th generation fighters in an Anti-Access/Area Denial (A2/AD) environment and suffer significantly less losses. The lack of advanced sensors and stealth in 4th generation fighters makes them vulnerable in the A2/AD environment. 5th generation fighters, specifically the F–35, are therefore vitally important in deterring Chinese aggression. Furthermore, Japan, Korea, Australia, and Singapore have all purchased F–35s, which will inevitably increase interoperability with the United States and the ability to share information in time of crisis.

PACIFIC DETERRENCE INITIATIVE

28. Senator INHOFE. Admiral Davidson, Secretary Lloyd Austin, Deputy Secretary Kathleen Hicks, and General Mark Milley have all said the Indo-Pacific is the priority theater. If that is true, you would expect the Biden administration budget to fully fund the $4.6 billion PDI request for fiscal year 2022 as outlined and justified in the section 1251 report you submitted this year. In your opinion, if the President's budget request for fiscal year 2022 in early May does not reflect the priorities you've said you need for PDI, does that undermine the policy that the Indo-Pacific is the "priority theater"?

Admiral DAVIDSON. I am encouraged by the Armed Services Committees' efforts to establish and resource the PDI. I am equally encouraged that the Deputy Secretary of Defense articulated that PDI is a priority and that the Department will address this initiative during the budget review. I provided recommended capabilities and a funding profile in my Independent Assessment to inform PDI. We will continue to provide the prioritized requirements for PDI to inform the fiscal year 2022 budget. I anticipate that the Department will take deliberate action to resource the needed investments.

29. Senator INHOFE. Admiral Davidson, some Members of Congress have publicly commented they are undecided about what, if any, additional investments need to be made to improve U.S. military posture in the Indo-Pacific. The worry expressed is that improving our posture in the Indo-Pacific overemphasizes that the only way to deal with China is to build a military large enough to dominate them, which is "unnecessarily provocative" and impossible in the modern era of warfare. Meanwhile, the Associated Press (AP) reported that China announced last week an increase in defense spending by 6.8 percent. How do you answer the question from skeptics that we don't need PDI to improve our posture in the Indo-Pacific?

Admiral DAVIDSON. PDI requirements focus on vital military capabilities needed to deter China. Deterrence is the combination of will and capability, communicated in such a way that the adversary assesses the cost of initiating hostilities outweighs potential gains. PDI requirements modernize capabilities required for 21st century warfare and communicate the United States' dedication to the region. The investment cost is much less than the costs should deterrence fail and conflict result. Diplomatic leaders must be able to rely on the strength of the U.S. military and collective militaries of allies and partners as a credible last resort to complement diplomacy, development, and economic statecraft.

30. Senator INHOFE. Admiral Davidson, if we maintain our status quo posture rather than improving, in your opinion, does that make military conflict more likely or less likely?

Admiral DAVIDSON. Maintaining our status quo posture makes military conflict more likely because we will cede the initiative to our competitors and adversaries in the region and fail to deter aggression.

Conversely, increasing our persistent presence through forward-based and rotational joint forces inside the first island chain is the most credible way to demonstrate our commitment and resolve to competitors, deter unwanted aggression, and assure allies and partners.

Current capacity and capability gaps related to force protection, homeland defense, joint force lethality, long range fires, ISR, training, and logistics enablers should be a part of our future efforts to make military conflict less likely in the Pacific.

GUAM DEFENSE SYSTEM

31. Senator INHOFE. Admiral Davidson, the top item on your unfunded requirements list is missile defense capability for Guam, which you call the "Guam Defense System"(GDS) and that you requested $350 million to begin acquiring in fiscal year 2022. Can you please explain: A) why protecting Guam is important to defending allies and partners like Taiwan; B) how China's missile arsenal threatens Guam, and C) how the Guam Defense System would provide protection?

Admiral DAVIDSON. A) Guam is a United States Territory and is part of the United States Homeland. Guam provides the most capable and important force projection and logistics capabilities in the Western Pacific. Guam enables our ability to mitigate the tyranny of distance in the Indo-Pacific' s geography as a critical hub in our supply chain and logistics enterprise. It also provides a deep-water strategic port, major fuel stores, munitions stores, command and control, and is a major power projection airfield for the United States in the region. Guam is essential to deterring China's aggression and assuring United States allies and partners in the region.

B) China understands the importance of Guam to the United States' ability to project power in the Westem Pacific and has developed a credible missile force capable of attacking Guam and all of the United States' major allies in the region. In September 2020, the PRC showcased this capability in a propaganda video of their own bomber forces attacking Anderson Air Force Base in Guam.

C) The nucleus for the Guam Defense System is the Aegis Combat System (ACS). ACS provides point and area defense. It can integrate Navy and Army current Programs of Record land-based sensors, interceptors, and command and control systems to provide 360-degree defense of Guam from the full range of PRC threats.

32. Senator INHOFE. Admiral Davidson, your Fiscal Year 2021 National Defense Authorization Act (NDAA) section 1251 report proposes to use a version of Aegis Ashore as the solution to defend Guam against Chinese ballistic, cruise, and advanced cruise missiles. What are the reasons you selected the Aegis Ashore system over other options?

Admiral DAVIDSON. The solution I recommend represents the only capability within our current inventory of systems that will meet a 2026 delivery timeline.

33. Senator INHOFE. Admiral Davidson, the cost of the Guam Defense System as proposed in the Fiscal Year 2021 NDAA section 1251 report is about $1.65 billion over the Future Years Defense Program (FYDP), $350 million of which would be in fiscal year 2022. What components of a full missile defense capability does the cost include (e.g. does it include the interceptors, launchers, and other components)?

Admiral DAVIDSON. The Guam Defense System (GDS) initial configuration, includes Aegis Baseline (B/L) 10, solid state radar (SPY–6 or SPY–7 variant), MK–41 VLS, Aegis Ashore, and SM3/SM6 missiles to mitigate known defensive and offensive gaps for the defense of Guam. It also incorporates a separate elevated sensor, Naval Integrated Fire Control-Counter Air (NIFC–CA) capability, and Cooperative Engagement Capability (CEC) that provides a baseline architecture to set the 'standards and protocols' for a 21st century Joint Fires Network (JFN).

TAIWAN

34. Senator INHOFE. Admiral Davidson, Xi Jinping has been clear he does not rule out the use of force as a potential means of achieving the unification of Taiwan. Oriana Mastro, a respected scholar on China, recently wrote that "For the first time in Chinese history, Xi will have at his disposal a military capable of forcing unifica-

tion." She goes on to say that while many Western observers think China will able to take the island in the next 5 to 8 years, Chinese military leaders have told her that they will be ready within a year. When does the Communist Party leadership in Beijing believe the Chinese military will be ready to invade and successfully occupy Taiwan?

Admiral DAVIDSON. We do not know when Xi or other Party leaders believe the PLA will be ready; however, they are clearly pressing the PLA to be ready "sooner" rather than "later." The recent announcement that 2027 is a new milestone for PLA modernization may be a reflection of increased urgency. 2027 is a notable year because it will mark the centennial of the PLA and the end of Xi Jinping's presumed third term. Xi also stated that they cannot prolong the Taiwan issue indefinitely, and the only acceptable resolution is unification.

PLA leaders are undoubtedly looking at all aspects of the problem—capacity, capability, readiness, level of training, and will to fight for the PLA, Taiwan, and the United States—to determine when conditions are likely to lead to PLA success. Under certain circumstances, the PRC would almost certainly order military action immediately, regardless of assessed risk, such as a Taiwan declaration of independence.

35. Senator INHOFE. Admiral Davidson, how is China using its exercises to prepare for a Taiwan conflict?

Admiral DAVIDSON. China focuses much of its training on preparing for a military contingency against Taiwan. PLA leaders, especially those in the Eastern Theater Command—which is responsible for Taiwan—design exercises to rehearse and improve critical aspects of a Taiwan contingency, including amphibious landings, air and missile support, maritime interdiction, electronic warfare, and space and cyber support. Many of these exercises occur in the Taiwan Strait or nearby for realism and to familiarize PLA forces with the operational environment. China attempts to amplify such training with heavy media coverage, touting PLA proficiency and overmatch against Taiwan. PRC state media said a September 2020 event was "not a warning, but a rehearsal for a Taiwan takeover."

36. Senator INHOFE. Admiral Davidson, as General H.R. McMaster said last week at a hearing on global security challenges, "Taiwan may represent the most dangerous flashpoint for war". He then went on to say because of that very real threat, "it is immensely important to keep forward positioned capable forces [in the Indo-Pacific]". As Co-Chair of the Taiwan caucus, I'm worried that a Chinese invasion of Taiwan would present a hard test for United States military response times. Can you talk about why United States forward positioned forces are so important, and what you mean by forward positioned—where do those forces need to be?

Admiral DAVIDSON. Forward positioned forces includes permanently-based and rotational joint forces that are west of the International Date Line. The combination of forward-based and rotational forces provides persistent presence that is the most credible way to demonstrate U.S. commitment and resolve to potential adversaries while simultaneously assuring allies and partners. In the event of crisis or conflict, forward forces are able to respond more quickly.

37. Senator INHOFE. Admiral Davidson, at a Senate Armed Services Committee hearing last week on global security challenges, General McMaster said "There's a race ongoing right now to help Taiwan harden its defenses to make itself indigestible prior to the period of . . . greatest danger which is from 2022 onwards, based on the conclusion of the Beijing Winter Olympics and based on the Communist party congress." The Trump administration removed many obstacles to cooperation and engagement with Taiwan. It's now up to the Biden administration to build on this new opportunity. What kind of activities and arms sales should be pursued to help Taiwan "make itself indigestible"?

Admiral DAVIDSON. Consistent with the Taiwan Relations Act, the United States provides Taiwan defense articles and services to allow Taiwan to maintain sufficient self-defense capabilities commensurate with the threat that Taiwan faces. Given the growing disparity in the cross-Strait balance of military power, we encourage Taiwan to purchase large quantities of asymmetric systems that are highly mobile, lethal, and survivable, to include coastal defense cruise missiles (CDCMs), short-and medium range air defenses, and sea mines. I also believe Taiwan needs to modernize and sustain critical conventional capabilities like F–16V; Patriot missiles; and modem ships, submarines, and aircraft. We also encourage Taiwan to expand Reserve Forces integration, improve irregular warfare capabilities, prioritize service interoperability, and develop and implement joint doctrine and a professional noncommissioned officer corps.

INDOPACOM SECURITY ASSISTANCE

38. Senator INHOFE. Admiral Davidson, on 4 February 2021, President Biden said "our alliances are our greatest asset" and that they have "atrophied" over the past few years. One of the primary PDI lines of effort is to strengthen allies and partners. As I understand it, you've requested about $425 million for security assistance in fiscal year 2022 to help strengthen allies and partners. We have been "pivoting to the Pacific" for many years now. There is bipartisan support for the statement that "allies and partners are our asymmetric advantage" against China. But somehow the percentage of security assistance that goes to Indo-Pacific to strengthen allies and partners has, at best, remained level. Do you agree it ought to be growing? Why do you think it hasn't?

Admiral DAVIDSON. USINDOPACOM works closely with our allies and partners on proposals and potential solutions that address their security concerns in an achievable and maintainable way. The annual requested amount for USINDOPACOM security assistance increases at a measured rate year to year, in keeping with what our allies and partners can take on, and what USINDOPACOM can reasonably execute in one to two fiscal years. As our ally and partner political, military, and/or logistics infrastructure situations improve, USINDOPACOM requests will increase commensurate with the security challenges.

QUESTIONS SUBMITTED BY SENATOR ROGER F. WICKER

GRAPHIC DEPICTING FORCE LAYDOWN OF UNITED STATES AND PACIFIC ALLIES VS. CHINA

39. Senator WICKER. Admiral Davidson, Appendix 1 to Enclosure (1) of your section 1251 report includes a graphic comparing Chinese forces and United States Forces (stationed west of the International Date Line). Can you provide a similar graphic that contrasts Chinese forces with both United States and Pacific ally forces?

Admiral DAVIDSON. I provided the requested graphic to SASC staff on 16 March 2021. They will control or disseminate the document in accordance with the appropriate procedures for the applicable classification.

TAIWAN

40. Senator WICKER. Admiral Davidson, your third command focus area is "strengthening allies and partners." A key strategic partner who shares our interest in deterring Chinese aggression is Taiwan. Although they benefit from foreign military sales, we do not conduct bilateral training exercises or personnel exchanges with Taiwan that we do with other important partner nations. Admiral, would you like to see greater official coordination between our military and Taiwan?

Admiral DAVIDSON. USINDOPACOM will continue to advise Taiwan on military capabilities, interoperability, readiness, and professional development through security cooperation and foreign military sales in accordance with the Taiwan Relations Act. Greater official coordination between the United States and Taiwan through bilateral or multilateral military exercises could prove beneficial. I would look forward to the discussion.

41. Senator WICKER. Admiral Davidson, what measures do you think could be taken in the near term to strengthen the United States-Taiwan military partnership?

Admiral DAVIDSON. Consistent with the Taiwan Relation Act, in the near term USINDOPACOM will provide Taiwan defense articles and services that allow Taiwan to maintain sufficient self-defense capabilities. Given the growing disparity in the cross-Strait balance of military power, we encourage Taiwan to purchase large quantities of asymmetric systems that are highly mobile, lethal, and survivable, to include coastal defense cruise missiles (CDCMs), short- and medium-range air defenses, and sea mines. I also believe Taiwan needs to modernize and sustain critical conventional capabilities like F–16V; Patriot missiles; and modem ships, submarines, and aircraft. We will also focus on improving the Taiwan military' sjoint interoperability, readiness, and non-commissioned officer corps professional development through subject matter expert exchanges, key leader visits, steering groups and working groups.

AMPHIBIOUS WARSHIPS

42. Senator WICKER. Admiral Davidson, the Marine Corps is shifting their operational concepts to focus on smaller, more distributed forces. Part of their proposal includes building large numbers of what is being called the Light Amphibious Warship—a much smaller, lightly armed ship than our current amphibious classes. I'm concerned that these shorter range vessels, in addition to being less survivable, will create a need for more forward bases. These forward bases would themselves be vulnerable to attack, especially by ballistic missiles. This vulnerability seems to be exactly one of the concerns the Pacific Deterrence Initiative (PDI) is trying to address. Are you comfortable with your ability to protect these widely dispersed Marine Corps forces?

Admiral DAVIDSON. With the right investments we can protect our forward-based and rotational forces. Operating from dispersed locations requires a sophisticated balance of distributed locations to sustain the Joint Force. A more distributed, smaller footprint is better to defend against adversary efforts to find, fix, track, and ultimately target our forces operating from large, fixed bases in contested environments.

43. Senator WICKER. Admiral Davidson, what role do you foresee the larger amphibious classes of ships playing in future competition with China?

Admiral DAVIDSON. U.S. amphibious ships are key enablers. They provide a specific capability that can be used both during peacetime, such as to enable Humanitarian Assistance and Disaster Relief operations, and in armed conflict, to provide a rapidly deployable forcible entry capability and visible deterrent. Based on the large number of island and archipelago nations in the AOR, the large amphibious ships will support operations across the spectrum of conflict. The United States must continue to procure new large amphibious ships, while also modernizing our existing platforms.

DESTROYERS

44. Senator WICKER. Admiral Davidson, you have established the Guam air and missile defense system as your top priority for PDI funding. I understand that at present we rely on the DDG 51 class ships to provide much of the missile defense in that area. The terrible collisions involving the destroyers USS *Fitzgerald* and the USS *John S. McCain* in 2017 highlighted how hard we are working those ships and their crews. With the quantitative imbalance growing every year between our naval forces and China's, have we been able to reduce the operational demands on the crews of our forward deployed ships?

Admiral DAVIDSON. The Comprehensive Review on USS *Fitzgerald* and USS *John S. McCain* collision led to an Optimized Fleet Response Plan Japan (OFRP–J) for the Forward Deployed Naval Force Japan (FDNF–J) ships assigned to Commander, U.S. Pacific Fleet. OFRP–J mandates dedicated time for maintenance, training, and certification prior to operational employment. OPNAV has issued updated PERSTEMPO I OPTEMPO policy for all operational units to include FDNF–J ships. The OFRP–J and PERSTEMPO I OPTEMPO Policy supports the overall readiness of an FDNF–J ship that is sustainable. However, it does not reduce the overall operational demand for ships.

The deployment of a fixed Guam Defense System would help alleviate the operational demands that ships now undertake in their ballistic missile defense of Guam mission, and the three likely required during any conflict.

45. Senator WICKER. Admiral Davidson, do you have enough DDGs to carry out your missions today?

Admiral DAVIDSON. No. We have some shortfalls in availability, and there are challenges to scheduling because of worldwide requirements.

ELECTRONIC WARFARE IMPROVEMENTS

46. Senator WICKER. Admiral Davidson, what is the importance of the Navy Growler to the survivability of our forces and the fielding of the Next Generation Jammer to the Indo Pacific Theater?

Admiral DAVIDSON. The Navy EA–18G Growlers are a critical part of our airborne electromagnetic attack (AEA) capability supporting Operation Plan (OPLAN) and scheme of maneuver survivability. The complex threat of emitters produced by near-peer competitors contest freedom of maneuver in the electromagnetic spectrum (EMS). The Growler and Next Generation Jammer (NGJ) are required AEA capabilities for the foreseeable future, to include supporting 5th and 6th generation air-

craft. To maintain U.S. military overmatch in the EMS, NGJ provides new capabilities to ensure spectrum dominance.

47. Senator WICKER. Admiral Davidson, are you concerned about the extended use of the legacy jammer system (ALQ–99)?

Admiral DAVIDSON. Yes, I am concerned. The sole Airborne Electromagnetic Attack Tactical Jamming System replacement -Next Generation Jammer (NGJ) -must not fall behind in fleet delivery. NGJ

will provide new capabilities to the fleet to ensure spectrum dominance. The Airborne Electromagnetic Attack community has been relying on the ALQ–99 Tactical Jamming System for decades but is facing material and technological obsolescence that cannot counter all current threats.

48. Senator WICKER. Admiral Davidson, is there an acceptable level of risk between continuing to operate the legacy system and accelerating new technology deliveries like the ALQ–249 mid band pod?

Admiral DAVIDSON. There is always a balance between fiscal realities and developing/fielding advanced capabilities. Our current schedule for the ALQ–249 (Next Generation Jammer [NGJ]), if it remains on-plan, will balance the risk against our adversary's pace of technological development and our advantage in airborne electromagnetic tactical jamming capability. The Engineering and development for the NGJ includes three increments: #1 mid-band, #2 low-band, #3 high-band. The three increments take into account assessed capabilities of developing threats, shortfalls of the legacy system, and risk mitigation.

49. Senator WICKER. Admiral Davidson, would you support a more accelerated and cost effective solution to field the high band technology?

Admiral DAVIDSON. Yes. I would support a cost-effective approach that accelerates the timeline for the Next Generation Jammer increment #3 high-band capability. I do not support changing the order of increments, delaying the current schedule, or reducing capability of mid-band or low-band to accelerate high-band. While the high-band capability remains a priority to cover a portion of the threat, mid-band and low-band remain the preeminent capability to cover the most critical threats.

QUESTIONS SUBMITTED BY SENATOR THOM TILLIS

FORCE DESIGN

50. Senator TILLIS. Admiral Davidson, noted China scholar Oriana Skyler-Mastro postulates that "if Beijing thinks the U.S. will intervene on Taiwan's behalf, then time becomes crucial. Chinese military strategists believe that if you let the United States fight the way it is used to, which includes time to mobilize and amass firepower in theater, then victory is unlikely." Given that Chinese strategists do not intend to let the United States build up military power in the Indo-Pacific if they decide to use military force in the region, how important are U.S. Forces west of the international dateline and can you defend those forces as currently postured?

Admiral DAVIDSON. My primary responsibility is to deter adversary aggression and prevent conflict. Persistent presence through forward-based and rotational joint forces is the most credible way to demonstrate our commitment and resolve to potential adversaries and deter aggression. With the right investments we can protect our forward-based and rotational forces. In the most austere environments, forces may rely more on inherent capabilities and passive defensive measures. In more established environments, forces may rely on a balanced mixture of passive defensive measures, active defenses, and hardening of critical infrastructure. Finally, we are implementing many measures to allow for more agile and distributed operations from multiple smaller locations to increase survivability.

51. Senator TILLIS. Admiral Davidson, the Department of Defense is prioritizing contested logistics as part of the forthcoming Joint Warfighting Concept. From your seat as commander of INDOPACOM, how big of an issue is contested logistics and can you give us some examples of how investments could improve our ability to conduct contested logistics operations?

Admiral DAVIDSON. Current INDOPACOM posture and Joint Logistics Enterprise capabilities are neither agile nor resilient enough against a peer competitor, such as the PRC. The Indo-Pacific is a vast, archipelagic theater with long lines of communication (LOC). We must transition from an obsolete North East Asia-heavy posture to a more forward, lethal, distributed and robust presence throughout the re-

gion, ideally including the Philippines and Oceania. This will require significant investments in basing infrastructure especially at key ports of debarkation.

We must invest in intra-theater airlift, sealift, and land-based distribution that utilize an array of capabilities to include a mix of autonomous, shallow draft, and surface and submersible vehicles, as well as the ability to rapidly and selectively self-discharge. Intra-theater sealift must be able to swiftly facilitate cargo transfers to other vessels, and ground transports.

These vessels also must be able to onload and offload in degraded or non-existent infrastructure and must have resilient, secure communication and navigation suites to mitigate cybersecurity vulnerabilities. Finally, more flexible and responsive bulk fueling capabilities is required. Refueling vessels must conduct fast replenishment at sea, and delivery to port fuel terminals and units over the shore.

52. Senator TILLIS. Admiral Davidson, Marine Corps Force Design would possibly reduce the number of F–35 Joint Strike Fighters per squadron from 16 to 10. There has been no official change to the program of record, however, General David Berger is signaling to the industry that we have to be prepared to adjust as the operating environment adjusts. Facilitation of contested logistics depends largely on operational enablers that allow maneuver within the battlespace. One such enabler in the region is the 5th generation fighter, specifically Marine Corps F–35s. Service level force design initiatives look to reduce the number of Marine Corps F–35s per squadron. Can you address how this reduction in aircraft may affect operations within your area of responsibility?

Admiral DAVIDSON. USINDOPACOM maintains the requirement for the F–35, in all its variants. 5th generation aircraft provide the most advanced ability to access, maneuver, and survive in Anti-Access and Area-Denial (A2/AD) environments. We incur severe risk to executing joint operations without 5th generation capability.

GROUND-BASED LONG-RANGE PRECISION FIRES

53. Senator TILLIS. Admiral Davidson, one of your top unfunded priorities is ground-based, long-range precision fires. Can you discuss why this is a key priority and explain some of the specific capabilities you believe the new system will need to have?

Admiral DAVIDSON. Long-range Chinese air-to-air, air-to-surface, and surface-to-surface weapons currently challenge United States freedom of maneuver. Ground-based, precision fires will help enable maneuver in the air and maritime domain. New capabilities must include: anti-ship capabilities; survivable ISR that can track large numbers of mobile targets; resilient Joint All Domain Command and Control (JADC2); new, Joint, advanced, distributed battle management systems with rapid sensor-to-shooter timelines; and a range of land, sea, and air deployed long-range weapons able to target ships and mobile and fixed land systems.

54. Admiral Davidson, which of the current service long-range precision fire research and development (R&D) programs do you believe hold particular promise in meeting your combatant command requirements?

Admiral DAVIDSON. We support all the Services' R&D efforts for long-range and hypersonic weapon systems. Critical for the Army and USMC long-range fires capability is the development of Tomahawk and SM6 missiles, capabilities advocated for by USINDOPACOM since the introduction of Regain the Advantage. USINDOPACOM's priority for hypersonic systems include Air-launched Rapid Response Weapon (ARRW), Navy Conventional Prompt Strike (CPS), and Long Range Hypersonic Weapon (LRHW). Other systems of interest in development are the Hypersonic Air-launched Cruise Missile (HACM); Southern Cross Integrated Flight Research Experimentation (SCIFiRE), a bilateral partnership with Australia; Ground Based Anti-Ship Missile (GBASM); and Contender Torpedo. In addition to R&D programs, we are strong proponents for our Pacific Multi-Domain Test and Experimentation Capability (PMTEC) to enable advanced experimentation, testing, training, and coupling of capabilities.

DEFENSE POSTURE REALIGNMENT INITIATIVE (DPRI)

55. Senator TILLIS. Admiral Davidson, DPRI is the program of record negotiated with the Government of Japan, which also provided $3.1 billion, to relocate Marine Corps Forces from Okinawa to Guam. The executive summary of the INDOPACOM report for section 1251 of the Fiscal Year 2021 NDAA indicates that getting INDOPACOM's force design and posture " . . . begins with completing the Defense Posture Realignment Initiative (DPRI), the current program of record enables

sustainment operations and provides the necessary lift for Marine forces scheduled to relocate from Okinawa to Guam." Japan is providing $3.1 billion in contributions (in fiscal year 2012 dollars) or about 1/3 of the estimated cost. On 6 January 2021, the Navy awarded $990 million of Government of Japan funded multiple award construction contract for work primarily in Guam. INDOPACOM has indicated that forward-based forces within the second island chain are important to deterring Chinese aggression, and if necessary, responding to it. From your interaction with the Japanese, how important is the execution of the DPRI program as negotiated with and partially funded by the Government of Japan—how closely are they watching the execution of this program?

Admiral DAVIDSON. The Government of Japan (GOJ) strongly supports the DPRI program's relocation of Marines from Okinawa to Guam, and has committed significant financial contributions toward this end. Since its inception, successive GOJ administrations have prioritized execution of the DPRI program. The GOJ views DPRI's moves as critical to improving local support for the Alliance in Okinawa. The GOJ works collaboratively with all USG execution and planning agencies to include United States Forces Japan, Naval Facilities Command, U.S. Army Corps of Engineers, and Marine Corps Installations Command, among others.

56. Senator TILLIS. Admiral Davidson, there are some concerns about the ability of Marine Corps to train for full spectrum combat when they are moved to Guam. Does the program of record adequately addresses this concern and mitigate potential issues from your perspective?

Admiral DAVIDSON. Relocating Marines from Japan to Guam requires significant investment in training ranges for full-spectrum training. Those requirements include all forms of training, from static small arms to aerial gunnery and convoy live fire. To address these requirements, USINDOPACOM developed the Combined Joint Marianas Training (CJMT) concept and the Pacific Multi-Domain Test and Experimentation Capability (PMTEC). These two efforts, when resourced and complete, combined with training in Northwest Australia provided by Marine Rotational Forces-Darwin (MRF–D), will adequately meet the full-spectrum training requirements for the Marines in Guam.

57. Senator TILLIS. Admiral Davidson, so the Committee can better understand some of the tradeoffs involved, what would be the impact, in your opinion, of moving those 5,000 marines and their dependents to locations east of the international date line rather than putting them in Guam on: a) deterrence, b) their ability to do full spectrum training, and c) the confidence of our partners and allies in the region?

Admiral DAVIDSON. Time and lift capacity are critical for enabling the Joint Force with a Marine force capable of responding to a crisis. Allies and partners would likely interpret moving the Marines and their dependents east of the International Date Line as a lack of United States commitment to the region given the distances to the South and East China Sea. Meanwhile, our adversaries could be emboldened by decreased United States presence. Keeping expeditionary training in Guam while maintaining a solid footprint in Japan provides for responsible, politically stable, and timely options to maneuver inside the First Island Chain during crisis. Presence matters—both permanent and rotational.

58. Senator TILLIS. Admiral Davidson, what is the current status of Futenma base relocation, the current challenges as you see them, and how worried are you that the construction won't be successfully completed?

Admiral DAVIDSON. The 2013 Okinawa Consolidation Plan designates the target date for completion of the Futenma Replacement Facility (FRF) program as 2022 or later. In 2020, the Okinawa Defense Bureau estimated completion in 2032, but that is a best-case estimate given current progress and anticipated obstacles. Currently, the FRF has approximately 10 percent of an estimated 206 projects complete. Another 13 projects (6 percent) are currently under construction. Approximately 4 percent of the total landfill required is complete. The Government of Japan is also resolving local construction and engineering issues. We are confident in the Government of Japan's ability to complete the project and the Government of Japan has repeatedly and publicly committed to doing so.

59. Senator TILLIS. Admiral Davidson, what would be the impact if the project is not completed?

Admiral DAVIDSON. The FRF will have significant deterrence capability in the AOR and will also provide for enhanced defense of Japan. This FRF gives USINDOPACOM a substantial power projection platform for Marine forces. Any

barriers to completion inhibit United States treaty obligations with Japan and negatively impact credible deterrence in the region.

TAIWAN

60. Senator TILLIS. Admiral Davidson, due to People's Liberation Army's (PLA) escalating military coercion against Taiwan over past years, this Committee has strongly supported maintaining the stability and prosperity across the Taiwan Strait. Moreover, the exchange of senior officers and military personnel in all levels between the United States and Taiwan are critical to the development of Taiwan's asymmetric defense strategy and capability. Does INDOPACOM plan to support future personnel exchanges?

Admiral DAVIDSON. USINDOPACOM will continue engagements with Taiwan that focus on improving joint interoperability within Taiwan's military, enhancing Taiwan training and exercises, improving Taiwan's readiness, and supporting Taiwan's military professional development. Current and planned engagements include virtual key leader engagements, senior leader visits, institutional dialogues and steering groups at the Flag/General Officer level; academic and professional military education exchanges; subject matter expert working groups; conferences and symposia. Taiwan personnel also attend a variety of United States intermediate and senior service schools and enlisted professional military education courses.

5TH GENERATION FIGHTER

61. Senator TILLIS. Admiral Davidson, can you confirm that 5th generation airpower is a requirement for your mission in INDOPACOM, and can you explain how 5th generation aircraft, like F–22 and F–35, meet that requirement?

Admiral DAVIDSON. The F–35 and F–22 aircraft are vital to our USINDOPACOM mission to counter a near-peer's highly advanced, multi-dimensional, integrated defense networks. Stealth technology, combined with other formidable 5th generation capabilities, increases survivability and effectiveness in an A2/AD environment. The F–35 combined with the F–22's air dominance allows the US the ability to achieve air superiority in a contested environment.

62. Senator TILLIS. Admiral Davidson, many of our key allies in the Indo-Pacific region are participants in the F–35 program. In your opinion, has the F–35 program had a positive impact on both military and diplomatic relations with these key allies?

Admiral DAVIDSON. The F–35 program demonstrates the positive impacts of working with allies and partners on modem weapon platforms. The F–35 program has allowed the United States to increase its level of collaboration and interoperability, which is also increasing ally and partner willingness to be net security providers. Furthermore, this level of shared technology improves interoperability with our allies and partners, which will enhance our combined exercises, training, operations, and ability to enhance coalition and joint force readiness.

63. Senator TILLIS. Admiral Davidson, China's advanced air defenses and fighter capabilities are rapidly increasing in capability and capacity. These capabilities are pushing 4th generation aircraft to greater stand-off ranges, often times beyond the targeting ranges of their weapons and sensors. Can you explain the importance of stand-in capabilities, such as 5th generation aircraft, and what advantages they provide if an engagement with China were to occur?

Admiral DAVIDSON. 5th generation fighters provide deterrence and operational capabilities like stealth and advanced avionics specifically designed to operate in an Anti-Access and Area-Denial (A2/AD) environment. 5th generation capabilities allow for better detection, targeting, and jamming of threats to achieve air superiority, suppression of enemy air defenses, and precise air-to-surface targeting. All of these requirements are essential to minimize losses if an engagement with China were to occur.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

OPERATING IN AN A2/AD ENVIRONMENT

64. Senator SULLIVAN. Admiral Davidson, the People's Republic of China has the capability, capacity and reach to employ thousands of missiles within the first island chain and hundreds of missiles in the second. This vast, asymmetrical arsenal will likely increase over the next several years. With that in mind, what do you consider

to be the right mix of forward, blunt forces west of the International Date Line (IDL) and surge forces east of the International Date Line?

Admiral DAVIDSON. The force posture recommendations identified in the Section 1251 Independent Assessment provide the foundation for fielding an integrated joint force west of the IDL and a sophisticated improvement in interoperability with our regional allies and partners. The permanent forces currently located in Japan; rotational forces sequenced through viable locations in the Philippines and the Ryuku islands; and command and control, logistics, integrated air missile defense and Marine Littoral Combat Regiments in Guam provide the foundation for blunt forces needed west of the IDL.

65. Senator SULLIVAN. Admiral Davidson, considering the robust Anti Access/Area Denial (A2/AD) environment of the Indo-Pacific, and the over 100 combat coded 5th generation fighter aircraft postured in Alaska, does it not makes sense to also base the next generation tanker (e.g. KC–46) in that state to serve as an air bridge to rapidly surge those fighters to the forward edge of a conflict in the Indo-Pacific?

Admiral DAVIDSON. USINDOPACOM needs the most modem, capable platforms strategically positioned to best support forces west of the International Date Line to ensure a ready and responsive deterrent force posture. This includes a distributed force posture that ensures rapid employment and survivability of joint forces. Given the force posture and robust training activities in Alaska, which will be further enhanced by the Pacific Multi-domain Training and Experimentation Capability (PMTEC), the need to distribute logistics capability as well as the 5th generation fighters also exists.

66. Senator SULLIVAN. Admiral Davidson, what concerns do you have regarding our ability to resupply and sustain operations—especially across a distributed posture—in an A2/AD environment?

Admiral DAVIDSON. The tyranny of distance requires a distributed capacity to sustain the Joint Force across the islands and archipelagos of the first island chain and the Pacific Island Nations in the second and third island chains. The right composition of logistics platforms, nodes, ports, and supplier networks, along with appropriate protection is critical. The Joint Force must have sufficient visibility and interoperability within the network to prioritize and sustain the Joint Forces. We must achieve the same level of integration and interoperability with our allies and partners to conduct anticipatory logistics sustainment in every domain.

67. Senator SULLIVAN. Admiral Davidson, what recommendations do you have to mitigate those concerns?

Admiral DAVIDSON. PDI requirements provide the foundation for establishing a distributed posture designed to deter aggression, assure our allies and partners, and if needed, transition to crisis or combat operations. We should continue to increase our joint force lethality by fielding systems and capabilities such as highly survivable, precision-strike networks along the first island chain, 5th generation F–35 capabilities, resilient and redundant joint/multinational command and control networks, enhance logistics capability with prepositioned stores and Service agnostic infrastructure, and investments to re-posture fuel in the theater at point of need. These investments are key to ensuring U.S. freedom of action or access to vital waterways, airspace, and other lines of communication in an A2/AD environment.

68. Senator SULLIVAN. Admiral Davidson, what concerns do you have regarding operational concepts—such as agile combat employment—the Services are developing to achieve a theory of victory in the region?

Admiral DAVIDSON. I am encouraged by the Service operational concepts but concerned with the ability of the Joint Force to integrate the Service-specific capabilities. The three functional areas we must address to close the gaps and make these Service operational concepts viable include the need to address the joint iterdependencies in the areas of command and control, integrated fires (offensive and defensive), and theater logistics.

69. Senator SULLIVAN. Admiral Davidson, what risk are we assuming provided the services cannot execute those concepts for a sustained period of time today?

Admiral DAVIDSON. As the Indo-Pacific's military balance becomes more unfavorable, the United States is assuming significant risk of an outcome that is unfavorable to the United States and our allies and partners.

DEFENSE POSTURE REALIGNMENT INITIATIVE (DPRI)

70. Senator SULLIVAN. Admiral Davidson, DPRI is the program of record negotiated with the Government of Japan, which provided $3.1 billion or about 1/3 of the estimated cost, to relocate Marine Corps Forces from Okinawa to Guam. The executive summary of the INDOPACOM report for section 1251 of the Fiscal Year 2021 NDAA indicates the force design and posture effort: " . . . begins with completing the Defense Posture Realignment Initiative (DPRI) . . . " From your interaction with our host nation counterparts, how important is the execution of the DPRI program to the Government of Japan?

Admiral DAVIDSON. The Government of Japan (GOJ) strongly supports the DPRI program's relocation of Marines from Okinawa to Guam, and has committed significant financial contributions toward this end. Since its inception, successive GOJ administrations have prioritized execution of the DPRI program. The GOJ views DPRI's moves as critical to improving local support for the Alliance in Okinawa. The GOJ works collaboratively with all USG execution and planning agencies to include United States Forces Japan, Naval Facilities Command, U.S. Army Corps of Engineers, and Marine Corps Installations Command, among others.

71. Senator SULLIVAN. Admiral Davidson, there are some concerns about the ability of Marine Corps to train for full spectrum combat when they are moved to Guam. Can you outline what shortfalls currently exist if the move were to occur today?

Admiral DAVIDSON. Relocating Marines from Japan to Guam requires significant investment in training ranges for full-spectrum training. Those requirements include all forms of training, from static small arms to aerial gunnery and convoy live fire. To address these requirements, USINDOPACOM developed the Combined Joint Marianas Training (CJMT) concept and the Pacific Multi-Domain Test and Experimentation Capability (PMTEC). These two efforts, when resourced and complete, combined with training in Northwest Australia provided by Marine Rotational Forces-Darwin (MRF–D), will adequately meet the full-spectrum training requirements for the Marines in Guam.

72. Senator SULLIVAN. Admiral Davidson, does the current DPRI program of record adequately address these shortfalls?

Admiral DAVIDSON. The current DPRI program includes development of the CNMI Joint Military Training (CJMT) complex. The Government of Japan is contributing approximately $300M (33 percent cost sharing with the United States) to the development of CJMT. Upon completion, CJMT will provide the joint force its most robust, multi-domain training capability in the Western Pacific. In an unprecedented way, it will build readiness while simultaneously retaining viable deterrent forces west of the International Date Line. CJMT will address forty-two joint training opportunities, to include amphibious assault, combined arms maneuver, and individual skills training, including military operations in urban terrain. This training, along with the lift capabilities described in my 1251 report, will improve current-training capabilities and will introduce all-new joint and multi-national training opportunities in the Western Pacific.

73. Senator SULLIVAN. Admiral Davidson, so that I can better understand some of the tradeoffs involved with respect to: a) deterrence, b) ability to do full spectrum training, and c) the confidence of our partners and allies—what would be the impact, in your opinion, of moving those 5,000 marines and their dependents to locations east of the International Date Line—say for instance, Alaska?

Admiral DAVIDSON. Time and lift capacity are critical for enabling the Joint Force with a Marine force capable of responding to a crisis or conflict. It would take approximately 15 days to move 5,000 Marines from Alaska to East Asia by sea compared to approximately five days from Guam. Allies and partners would likely interpret moving the Marines and their dependents east of the International Date Line (IDL) as a lack of United States commitment to the region given the distances to the South China Sea. Meanwhile, our adversaries could be emboldened by decreased U.S. presence. Keeping expeditionary training in Guam while maintaining a solid footprint in Japan provides for responsible, politically stable, and timely options to maneuver inside the First Island Chain during crisis or conflict. Presence matters -both permanent and rotational.

NORTH KOREA MISSILE CAPABILITIES AND COOPERATION WITH IRAN

74. Senator SULLIVAN. Admiral Davidson, in your statement for the record, you highlight: " . . . North Korea will remain our most immediate threat." You go on to

state: "Pyongyang maintains a diverse and growing missile inventory, and North Korea unveiled several new ballistic systems . . . including two SLBMs [submarine-launches ballistic missiles] and an ICBM." Finally, you conclude that: "Pyongyang's missile research and development efforts . . . are consistent with the regime's stated objective of being able to strike the U.S. Homeland." Can you broadly discuss how North Korea's missile program has advanced over the course of your assignment as the INDOPACOM commander?

Admiral DAVIDSON. When I assumed command in May 2018, the tensions that had spiked in 2017 when North Korea conducted a series of long-range missile launches had subsided greatly. However, at no time did Kim Jong Un reduce his support for his missile program or continued ballistic missile development. North Korea resumed short-range missile tests in mid-2019, likely for research and development purposes and to remind the international community of the North's capabilities. During parades in October 2020 and January 2021, North Korea displayed several previously unseen new missiles, including several short-range missiles, two submarine-launched ballistic missiles, and a larger, possibly longer-range ICBM, as well as several previously tested missiles. In all, North Korea paraded 10 ballistic missile systems, all of which they have developed in the past 5 years.

75. Senator SULLIVAN. Admiral Davidson, how would you characterize North Korea's missile program advancement—in terms of risk—to both our regionally based forces and the U.S. Homeland?

Admiral DAVIDSON. North Korea's missile program is a clear threat to the region and a growing threat to United States Homeland, including Guam, Hawaii, and the continental United States. The risk to regionally based United States Forces and our allies and partners has increased in recent years with the testing and fielding of short-, medium-, and intermediate-range ballistic missiles. North Korea has demonstrated improved mobile missile launch tactics, improved missile accuracy, and rapid-fire capabilities. Kim Jong Un maintains modest, but almost certainly growing, inventories of theater-strike missiles. His intercontinental-range missile program is still only partially proven, but Kim Jong Un is committed to developing a nuclear-armed ICBM capable of threatening the continental United States.

76. Senator SULLIVAN. Admiral Davidson, provided you are able to answer in this forum—how long would you estimate until North Korea's missile capability and range can reach the continental United States?

Admiral DAVIDSON. North Korea is committed to developing a nuclear-armed ICBM capable of posing a direct threat to the continental United States. Pyongyang conducted its inaugural series of ICBM flight-tests in 2017, marking a significant developmental milestone, and during an October 2020 military parade unveiled a new and larger ICBM that has not yet been flight-tested.

ICBMs are complex systems that require multiple flight tests to identify and correct defects and ensure the survivability and operational performance of the reentry vehicle and warhead. As such, while we lack confidence in the reliability and accuracy of North Korea's ICBMs, we must assume that they are capable of reaching the continental United States and plan accordingly.

77. Senator SULLIVAN. Admiral Davidson, the United Nations provided a report to the Security Council in February that confirmed North Korea and Iran resumed cooperation on development of long-range missiles last year. This reporting followed shortly after North Korea showcased their largest ICBM, believed capable of carrying a nuclear warhead across the United States. To me this is exceptionally concerning as both countries would greatly benefit from the leveraged gained in being able to strike our Homeland. In your personal opinion, are we doing enough to develop and field both regional/homeland missile defense systems?

Admiral DAVIDSON. The ballistic missile threat facing United States interests in Northeast Asia remains significant and we are well postured to protect against existing threats from North Korea. However, we must prioritize investments in capabilities that address the aggregated challenges in the Indo-Pacific. Guam Defense System, an integrated air and missile defense capability on Guam, is required to defend against both North Korea and PRC missile threats. The Homeland Defense Radar-Hawaii is the most capable sensor available to defend Hawaii against North Korea's advanced long-range ICBM.

78. Senator SULLIVAN. Admiral Davidson, how would you suggest we blunt the corrosive cooperation between these rogue nations?

Admiral DAVIDSON. The best way to blunt this sort of cooperation is to strengthen and expand the security architecture with our allies and partners to expose malign

behavior and coercive tactics. These efforts increase information sharing and reinforce the common understanding of the regional security landscape.

INDIA: HIGH-ALTITUDE, COLD-WEATHER TRAINING

79. Senator SULLIVAN. Admiral Davidson, the U.S. Army will host Indian forces in Alaska this year to exercise high-altitude, cold-weather combat skills. A Chinese military expert recently claimed that the Indian Army: "has the world's largest and most experienced troops trained for high-altitude battles". From my understanding, the same exercise will occur in the Himalayas in 2022. First, let me commend the efforts of INDOPACOM and U.S. Army in Alaska (USARAK) for cultivating this strategic partnership. Second, how can we advance it further to continue rebuilding robust Arctic capabilities that have atrophied significantly over the past decade?

Admiral DAVIDSON. We have much to learn from the Indian Army, which has a long history of operating at high altitudes and in extremely cold conditions. In 2018, for example, USARAK deployed personnel to visit the Indian High Altitude Warfare School (HAWS), the primary training institution for the Indian Army in cold and mountainous regions. Opportunities such as these allow United States and Indian forces to exchange best practices and lessons learned, improve interoperability, and further develop the United States-India bilateral relationship. We intend to seek similar exchanges and training in the future to improve our capabilities in austere mountainous environments.

FOSTERING INDO-PACIFIC MILITARY EXPERTISE

80. Senator SULLIVAN. Admiral Davidson, given the Department of Defense's shift in priorities from violent extremist organizations in U.S. Central Command (CENTCOM) to great power competition in INDOPACOM—as laid out in the 2018 National Defense Strategy and expressed by incoming DOD officials in the Biden administration—do you think Service Academies and other DOD educational institutions are adequately focused on educating our military officers and enlisted members to best understand and operate in the Indo-Pacific region? If not, in your personal opinion, how do we get after this knowledge and expertise shortfall?

Admiral DAVIDSON. The 2018 National Defense Strategy acknowledged a gap in professional military education (PME). In May 2020, The Joint Chiefs published "Developing Today's Joint Officers for Tomorrow's Ways of War," and the Service Academies and other DOD educational institutions have been adjusting and aligning PME and talent management systems to further develop our military leaders for 21st century challenges.

I believe there is still more to be done. Military leaders require more education on topics such as deterrence theory, innovation and experimentation, and a deeper understanding of the logistical and sustainment challenges operating in the Indo-Pacific Theater.

SECTION 1251 REPORT AND RANGE UPGRADES

81. Senator SULLIVAN. Admiral Davidson, in your section 1251 report, you identified range investments—which included the Pacific Multi-Domain Training and Experimentation Capability (PMTEC)—with the objective of creating a fully instrumented, live-virtual constructive (LVC) training areas throughout the Indo-Pacific. How would upgrading ranges—like the Joint Pacific Alaska Range Complex—with a Secure, Synthetic Inject to Live LVC (SITL LVC) air combat training capability help INDOPACOM meet its requirement to provide forces capable of fighting in highly contested environments against technologically advanced opponents?

Admiral DAVIDSON. PMTEC is critical for developing the training capacity to integrate Service-recommended weapons and capabilities into a joint warfighting concept that deters the adversary and trains our most capable warfighting force while expanding the breadth and scale of experimentation.

LVC is integral to PMTEC and will offer the Joint Force more effective, realistic, all-domain training and experimentation training at the tactical and operational levels. Fully modem range complexes and analytical tools will provide the foundation of the Joint Fires Network.

82. Senator SULLIVAN. Admiral Davidson, how would providing SITL–LVC at the Joint Pacific Alaska Range Complex, or other ranges, help increase overall readiness and combat capability of both INDOPACOM and allied forces?

Admiral DAVIDSON. LVC capability is critical to large scale, distributed training and enables our warfighters to train in a threat-representative environment. LVC simulates the highly contested threat environment of a near-peer conflict or operation. LVC is a must for enabling real threat emulation and live force-on-force train-

ing and provides the efficient means to increase and improve threat-representative, high-end training.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

CHINA'S NUCLEAR CAPACITY

83. Senator BLACKBURN. Admiral Davidson, in testimony you said that "China has quadrupled their nuclear capability since the turn of their century, and they will at least doubled it during the course of this decade." Assuming no nuclear modernization and no additional production, when would you approximate a credible Chinese nuclear overmatch?

Admiral DAVIDSON. At its current pace of development, China's total nuclear arsenal will remain below United States levels over the next decade. However, China's improvements to effectiveness, reliability, survivability, and technical performance-including hypersonic capabilities—of nuclear forces, coupled with Beijing's lack of transparency, underscore the threat China's capabilities pose to the United States and our allies and partners.

When considering the issue of overmatch, it is important to assess more than just the number of warheads. China continues to make rapid progress in training, command and control, operations, doctrine, and strategic intent while also increasing the number of warheads and launchers.

INDEPENDENT ASSESSMENT

84. Senator BLACKBURN. Admiral Davidson, you mentioned that "Taiwan is the immediate ambition of the Chinese" and that this would be a problem "within the next 6 years". What components of your Independent Assessment would prioritize addressing this ambition?

Admiral DAVIDSON. To address the Chinese ambitions, the most important action the United States can take is increase Joint Force lethality by introducing a 360-degree persistent and integrated air defense capability in Guam (Guam Defense System). This system must be able to integrate existing weapons control systems and must be robust enough to address emerging threats, including hypersonics. The defense of Guam remains USINDOPACOM' s number one unfunded priority.

85. Senator BLACKBURN. Admiral Davidson, as aptly stated in your testimony, "Partner Forces' assessment of U.S. reliability is not based on the military presence alone . . . It's going to take a whole of nation approach." How are we pursuing concentric lines of effort with other Federal Agencies in a "whole-of-government approach"?

Admiral DAVIDSON. USINDOPACOM coordinates and leverages the unique expertise from 60 interagency and intra-DOD Liaison Officers embedded in the USINDOPACOM Headquarters. We routinely integrate interagency representatives into steady-state operations, joint military operations and strategic planning, the USINDOPACOM Joint Exercise Program, and contingency and crisis response. We also conduct outreach to the interagency teams embedded in each U.S. Embassy in the Indo-Pacific and in the National Capital Region for those agencies who do not have Liaison Officers in the Pacific.

LAW OF THE SEA

86. Senator BLACKBURN. Admiral Davidson, can you please frame what ratification of United Nations Convention of the Law of the Sea (UNCLOS) would mean for you generally as the INDOPACOM Commander and what it would enable the joint force to do in that AOR?

Admiral DAVIDSON. Accession to UNCLOS will put the Joint Force in a better position to fly, sail, and operate wherever international law allows, including throughout the Indo-Pacific. China is asserting its interests off its coast and in the South China Sea in ways that threaten foundational standards for the world's oceans as reflected in UNCLOS. China's attempts to restrict the rights, freedoms, and lawful uses of the sea available to commercial and military naval and air traffic is inconsistent with customary international law as reflected in UNCLOS. Accession to UNCLOS would help our position legally across the globe and would do nothing to limit our military operations in the manner in which we're conducting them now.

LOGISTICS/ MOBILITY

87. Senator BLACKBURN. Admiral Davidson, with respect to rotational forces under your command; do you assess the current amount of intra-theater mobility to be adequate?

Admiral DAVIDSON. No. USINDOPACOM requires new, smaller, and more distributed intermediate staging bases across the theater. Doing so allows for sea and air trans-loading to smaller intra-theater platforms that are more survivable and readily available.

88. Senator BLACKBURN. Admiral Davidson, are we resourced to maximize bi-lateral and multi-lateral engagement opportunities in the AOR given our current connectors?

Admiral DAVIDSON. No. By law, approximately 75 percent of Security Cooperation funds go to USCENTCOM for Israel and Egypt, leaving the other five geographic combatant commands to compete for the remaining 25 percent. To supplement, USINDOPACOM leverages Asia Pacific Regional Initiative (APRI) resources and the National Guard's State Partnership Program with 15 Indo-Pacific nations to further enable military-to-military and military-to-civilian activities in the region.

DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, MARCH 16, 2021

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

UNITED STATES SOUTHERN COMMAND AND UNITED STATES NORTHERN COMMAND

The Committee met, pursuant to notice, at 9:31 a.m. in room SD–G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Kaine, King, Warren, Peters, Manchin, Rosen, Kelly, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Cramer, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. Let me call the hearing to order. Good morning. Today the Committee will receive testimony from General VanHerck, Commander, United States Northern Command and North American Aerospace Defense Command, or NORAD, and from Admiral Craig Faller, Commander, U.S. Southern Command. General VanHerck is appearing for his first posture hearing in his current command, and Admiral Faller is returning to testify as Southern Command (SOUTHCOM) Commander, and this could be your last hearing before the Committee, Admiral. Thank you for your dedicated service to the Nation and the Navy. We appreciate it very much.

I want to thank both of you, indeed, for your decades of service and also, obviously, thank your families for the sacrifices that they have made to support you. On behalf of the Committee, I also want you to thank the men and women under your commands for their selfless dedication and service to the Nation.

The security environment we face today is fundamentally different than even a decade ago. Near-peer competitors China and Russia have significantly narrowed the technological advantages that the United States military previously enjoyed, and they threaten to contest our military operations across all domains, including land, sea, air, cyberspace, and space. The 2018 National Defense Strategy shifted our defense priorities to focus foremost on strategic competition with China and Russia, but we need to better

define what our objectives are for out-competing our adversaries in this geopolitical rivalry.

General VanHerck, you are responsible for protecting the Homeland, and over the last year that mission has centered on the response to the COVID–19 pandemic. At the request of the Federal Emergency Management Agency (FEMA), Northern Command (NORTHCOM) has deployed more than 2,200 personnel at part of 25 vaccination support teams at 17 sites in nine states, administering more than 50,000 doses daily. I understand that FEMA has discussed with you ramping up to 100 vaccination support teams, with the capacity to vaccinate over 400,000 people per day. This is in addition to the more than 30,000 National Guard members supporting civil authorities across 46 states and 3 territories. General VanHerck, I hope you will share your views on the challenges in scaling up this effort and any lessons learned regarding what we need long-term for addressing future pandemic threats to our Nation's health security.

NORTHCOM is also tasked with operating our Homeland ballistic missile defense, the Ground-Based Midcourse Defense system, to protect the United States against an intercontinental ballistic missile attack from rogue states. The threat from North Korea has only grown in recent years, and I would be interested in hearing your assessment of what additional steps can be taken to better integrate our domain awareness and modernize our missile defense systems, including plans for the Next Generation Interceptor, and the so-called "underlayer" of missile defense protection for the Homeland.

NORTHCOM is designated as the advocate for capabilities in the Arctic, and plays a leading role in bringing together the combatant commands that share responsibilities for this increasingly critical region. As Russia and China become more assertive in the Arctic, it is essential that we develop a unified response across combatant commands and across the interagency, as well as in coordination with our allies and partners. General, I would appreciate any updates you can provide on this critical region.

The situation along our southern border has implications for both NORTHCOM and SOUTHCOM. Despite President Biden's termination of the declaration of a national emergency along the border, and ending of the diversion of funds for the border wall, roughly 3,600 military personnel remain deployed in the region in support of the Customs and Border Patrol. This raises questions about what the Defense Department's role should be in a whole-of-government response to the situation at the southern border. In addition, recent weeks have seen an increase in the number of unaccompanied children arriving at the southern border seeking to escape instability and violence in their home countries. While these children need to be cared for in a human and safe manner on a case-by-case basis, I also believe we need to address the migration problem at its source, including the conditions causing adults and children to seek asylum at our border. Admiral Faller, I would be interested in your thoughts on how the Department can use security cooperation strategically to build partner capabilities and institutional capacities to counter the drivers of instability in Central America.

SOUTHCOM's traditional mission has focused on countering the scourge of narcotics and the threat from transnational criminal organizations. The growing influence of China and Russia, however, threatens to further destabilize the region, as these geopolitical rivals take advantage of corrupt governance in the region to advance their own strategic interests. China's malign financial influence, and Russian disinformation amplified on Russian-controlled Spanish language media outlets, threatens to undermine democratic governments. In Venezuela, the Maduro regime, propped up with external support from Russia, China, and others, has caused millions of Venezuelans to flee into neighboring countries, with Colombia bearing the brunt of this exodus. Admiral Faller, I am interested in your assessment of the threat from near-peer competitors in the SOUTHCOM area, and how we might work strategically with partners in the region to build resilience to China and Russia's malign activities.

I want to thank you again for being here this morning and I look forward to your testimony. I also just want to note, for my colleagues, that there will be an informal classified briefing by Admiral Faller in SVC–217 immediately following this session, until 12:30, when we must cease, and the subject will be the increasing Chinese influence in the SOUTHCOM area.

With that, let me recognize Senator Inhofe.

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Thank you, Mr. Chairman. Thank you for calling this important hearing. I want to also thank our two witnesses, NORTHCOM and SOUTHCOM. As you know, my top priority remains ensuring the effectiveness and implementation of the National Defense Strategy—we have all agreed this is our roadmap. This is what we are supposed to be doing. It is as true today as it was 2 years ago—which identifies competition with China and Russia as the central challenge to the United States' prosperity and security.

However, the growing influence of China and Russia is not limited to Europe and the Indo-Pacific. Most people, when they think about that they talk about the South China Seas and other places where there are problems. Both countries have shown their way that they view the Western Hemisphere as critical terrain for fulfilling their global ambitions in challenging the United States. Admiral Feller, China and Russia are expanding their access and influence in your area of responsibility (AOR), through increasing arms deals, military deployments, and economic and diplomatic coercion.

At the same time, much of the drugs poisoning American cities are coming from Latin America through the vast illicit networks operated by multi-billion-dollar criminal organizations. General VanHerck, you have operational responsibility for the defense of the United States Homeland. We are facing a lot of challenges from the growing Chinese and Russian missile capabilities, including advanced cruise missiles and hypersonic missiles. I hope you will discuss any emerging gaps you foresee in our Homeland defense and offer your recommendations for addressing these challenges. Specifically, I am interested in your views on whether waiting another

decade for a new ground-based interceptor makes any sense or if we need to act sooner, given the growing threat from our adversaries.

Meanwhile, we are seeing a new crisis brewing on the southwest border. According to The New York Times, approximately 78,000 immigrants tried to cross the border in January. That is double the number that were there from the year before. So we know that is happening. We know that his increasing. We do not have the numbers yet of the—I tried to get them this morning—of February. We do not have those numbers yet, but we will get them, and we see that this thing is getting worse.

I have always said border security is a national security, and my visit to the border in August of 2019 confirmed this belief. These new statistics are alarming, so I hope you will address whether NORTHCOM's border support mission is sufficient and what we can do to better ensure that our laws are enforced.

You know, we talk around this thing, and nobody wants to talk about it. No one wants to admit it. We have got a new President now and the new President has a different mission. You know, he wants everyone to love him, and I understand that. I have a picture here that I want to be made part of the record. This is all these people coming across illegally, wearing their Biden t-shirts. Now this is going on, you guys. Do not act like it is not. Anyway, we need to face this problem.

Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Inhofe, and now let me recognize Admiral Faller for his testimony.

STATEMENT OF ADMIRAL CRAIG S. FALLER, USN, COMMANDER, UNITED STATES SOUTHERN COMMAND

Admiral FALLER. Good morning, Chairman Reed, Ranking Member Inhofe, distinguished Members of the Committee. I thank you for the opportunity to testify before you today. I am honored to be here with my friend and shipmate, General Glen VanHerck from the United States Northern Command.

Now more than ever, I feel a sense of urgency about the global threats we face here in our neighborhood, this region, our home. This neighborhood is our home. It is a shared neighborhood. It is a hemisphere which is of vital national interest to the United States.

Two of the most significant threats we face are China and transnational criminal organizations. The Chinese Communist Party, with its insidious and corrupt influence, seeks regional and global economic dominance, in its own version of a rules-based international order. Our strategic competition with China is global, not just in the Taiwan Strait or the South China Sea. China is quickly growing its influence here, in our hemisphere, working on over 40 port deals, dishing out significant loans for political and economic influence, pushing for information technology (IT) structure, and engaging in predatory practices like illegal, unregulated, and unreported fishing. We have seen many of these tactics in Asia and Africa, and we cannot let them prevail here in our neighborhood.

Transnational criminal organizations pose a direct threat to our national security. They traffic in arms, humans, drugs, and they claim tens of thousands of lives in America every year. These murderous tactics have resulted in 43 of the 50 most violent cities in the world being here in this hemisphere, and they drive illegal migration and they allow bad actors like China to gain influence.

COVID–19 has hit this hemisphere hard. According to the International Monetary Fund (IMF), the economies of Latin America and the Caribbean shrunk 7.4 percent in 2020. The impacts of the pandemic, like a perfect storm, will alter the hemisphere for years to come.

In the midst of all this, two back-to-back hurricanes devastated Central America, causing even greater instability. The pandemic and these unprecedented storms struck on top of this already vicious circle of threats, creating strong push factors for people in the region seeking a better life, seeking security, to come with their families to the United States. Despite an economy in a tailspin, more than five million refugees have fled Venezuela and the illegitimate Maduro regime. Maduro continues to cling to power with the support of Cuba, Russia, Iran, and China.

We cannot face such daunting challenges alone. The only way to counter these influences, these threats, is to strengthen partnerships. That is how we will in the strategic competition.

I have been impressed with nations who have worked shoulder-to-shoulder with us, despite the pandemic, to counter threats. Nations like Colombia, whose professional forces have stepped up in the midst of the pandemic to conduct counter-transnational criminal organizations with dozens of other nations, and nations like Brazil, who sent their airborne company to our high-end training with the United States Army at Fort Polk, Louisiana.

Good neighbors are here when you need help, and that is what the United States did in SOUTHCOM when COVID hit. We stepped up with our humanitarian assistance program, contributing over 450 projects in 28 countries. Overall, the United States is the leader in humanitarian assistance in COVID in Latin America and the Caribbean.

SOUTHCOM works every day to build readiness with our trusted military and security partners. We do this through security cooperation. This includes institution capacity-building, legal training, education, international military education and training (IMET), and exercises. We focus on developing professional military forces that know how to fight and use the lawful use of military force. We focus on human rights training, Women, Peace, and Security programs, and non-commissioned officer (NCO) development. Modest investments in these programs and intelligence, surveillance, and reconnaissance, and our presence, our posture, go a long way in this hemisphere and will help our partners counter these global threats.

Finally, our success would not be possible without the men and women of our SOUTHCOM team. We are taking proactive steps to protect them from unacceptable behaviors, like sexual assault and harassment, racism and extremism. We take these threats seriously. They are a cancer to our readiness, and it is the right thing to do.

Mr. Chairman and Ranking Member Inhofe, on behalf of the SOUTHCOM team thank you for the trust you place in us, and I look forward to our discussion and questions today.

[The prepared statement of Admiral Faller follows:]

PREPARED STATEMENT BY ADMIRAL CRAIG S. FALLER

Over 2 years ago, you entrusted me with the great responsibility of leading the men and women of the United States Southern Command (USSOUTHCOM) in working with our partners to secure our hemisphere. At the time, our region faced a seemingly insurmountable crisis of illicit drugs killing tens of thousands of Americans every year, institutional instability and corruption in the region, and external state actors (ESA), like the People's Republic of China (PRC), looking to exploit the conditions posed by these threats. I committed to tackling these challenges by building trust with the Nations of this region and within our own interagency—by being the best partner we can be and by strengthening and complementing U.S interagency and partner nation capabilities to address these threats together. With your support, we have made notable strides, but much work remains to be done. I welcome this opportunity to discuss the significant national security challenges and opportunities we still face in Latin America and the Caribbean. This region is our neighborhood, directly tied to us in every domain. A threat to our neighbors is a threat to the United States; and an opportunity for our neighbors is an opportunity for us to make our neighborhood stronger together.

In fact, after 2 years in this position, I feel an incredible sense of urgency. This Hemisphere in which we live is under assault. The very democratic principles and values that bind us together are being actively undermined by violent transnational criminal organizations (TCOs) and the PRC and Russia. We are losing our positional advantage in this Hemisphere and immediate action is needed to reverse this trend. The intervention goes well beyond economic influence, the PRC's strategic outlook with over 40 ports in progress, significant loans that are used as political leverage and predatory practices demonstrated in illegal, unreported, and unregulated (IUU) fishing are weakening democratic institutions and leveraging the future of this Hemisphere. We have seen many of these same tactics in Asia and Africa over the last few decades and we are well aware of the results. We must act now to avoid those same results in our own hemisphere.

STRATEGIC ENVIRONMENT

The National Defense Strategy (NDS) identifies defending the Homeland as a critical defense objective and recognizes that our Homeland cannot be safe without a stable and secure Western Hemisphere. USSOUTHCOM's primary mission is to keep our neighborhood safe from those seeking to do us harm so that our home remains secure. The threats in the Western Hemisphere are persistent, they're real, and they represent a formidable risk to our national security. Perhaps most urgently, this region has been one of the hardest hit by COVID–19; the health, economic, and social impacts of which will alter the hemisphere for years to come. In the midst of this pandemic, two back-to-back major hurricanes devastated Central America creating even greater economic strain. The pandemic and these unprecedented storms struck on top of an already challenging vicious circle of threats that jeopardize a secure, stable, and democratic Western Hemisphere. These threats include ESAs like the PRC, Russia, and Iran that actively seek to take advantage of the nascent, fragile democracies in this region and look to exploit the region's resources and proximity to the United States; TCOs that run all forms of illicit activities to turn a profit, at the expense of the rule of law, and more importantly, of the lives of all who are impacted along the way; and malign regional state actors—those countries within our own neighborhood, like Cuba, Venezuela, and Nicaragua, that perpetuate corruption and challenge freedom and democracy by opening the door to ESAs and TCOs at the expense of their own people. TCOs are a direct threat to the United States Homeland. We cannot face such daunting challenges on our own. The only way to counter these threats is to strengthen our partners in the region—we must build OUR team to win this strategic competition. If our neighbors are stronger, we're all stronger.

THREATS AND OPPORTUNITIES

COVID–19 and Fragility in the Hemisphere. There is an accelerating spiral of instability gripping the region as the pandemic has increased the region's fragility. Latin America and the Caribbean have suffered among the highest COVID–

19 death rates in the world, and during my trips to the region, I witnessed the profound physical and emotional strain nations are experiencing. With only about 8 percent of the world's population, Latin America and the Caribbean are disproportionately impacted with nearly one fifth of global cases. Though nothing compares to the toll on human life, there will also be a significant socioeconomic impact on our neighbors for years to come. According to the International Monetary Fund (IMF), per capita income in Latin America will not recover from the pandemic until 2025—later than any other region in the world. Coming on the heels of widespread public protests against governments throughout the region at the end of 2019, these COVID–19 losses coupled with longstanding socioeconomic grievances and corruption have created the conditions for even greater instability and unrest among our partner nations. These conditions create a more fragile region that serves as fertile ground for our competitors to advance their own interests, both malign and legitimate, making this challenge even more complex. Even some of our strongest partners are at risk of instability due to this confluence of factors.

Our partners' military and security force budgets are facing extreme pressure as governments use their limited resources to address the pandemic. Security forces are increasingly focused on the very near-term need for tactical items such as fuel, food, personal protective equipment (PPE), and vaccines at the expense of security operations. They are concerned that TCOs will gain even more freedom of action in their countries as conditions for corruption and illicit activity grow.

In order to gain more access, presence, and influence in the region, the PRC and Russia are taking advantage of the pandemic, deploying medical diplomacy and disinformation campaigns—often overpromising and under delivering. The PRC is offering $1 billion in loans to the region for their COVID–19 vaccine and improvements to medical infrastructure, securing agreements with Argentina, Brazil, Peru, and Venezuela. This will further indebt the region to the PRC, which already holds $165 billion in loans. The PRC aims to enhance medical exchange programs, exploiting the pandemic to advance its One Belt One Road (OBOR) initiative in trade, technology, and infrastructure. Beijing is also using COVID–19 as a pretext to donate Huawei technology that integrates with its 5G networks and Safe City programs—touting its social monitoring model as an effective and inexpensive contact tracing solution.

Russia, too, is seizing the pandemic as an opportunity to increase its influence in countries where it previously had limited access. COVID–19 has also provided Russia with another avenue by which to expand its campaign to outcompete the United States in the information domain, pushing narratives about United States mismanagement of COVID–19 and claiming United States Government sanctions are choking the Venezuelan people at their most vulnerable time.

What we're doing about it: Good friends are consistent and committed. While maintaining force health protection as a priority, USSOUTHCOM immediately responded to the needs of our partners in this crisis by providing humanitarian assistance to alleviate the burden on health systems throughout the region. Since April 2020, USSOUTHCOM has executed over 485 of these projects in 28 countries, with a total investment of more than $56 million, in addition to the humanitarian assistance delivered by State and USAID. Our efforts range from deploying field hospitals to providing critical PPE.[1] The U.S. Government has delivered $226 million worth of aid, with an additional $35 million on its way, which is more than double what the PRC has donated. As part of overall U.S. Government humanitarian efforts, DOD's humanitarian assistance program is making an important difference in these nations and helping to build trust and bring stability to the region. In every conversation with my counterparts in the region, they lead with "your assistance has been critical as we face COVID–19." If the U.S. wants to be the partner of choice—that means being first to respond in a crisis. Missions like the 2019 deployment of the USNS *Comfort* provided world-class medical care to over 68,000 people in 12 countries and enhanced the medical readiness of our U.S. and partner medical personnel. We work closely with State and USAID to find innovative ways to deliver this kind of relevant and timely support to our partners and demonstrate our commitment to the region.

EXTERNAL STATE ACTORS (ESAS) AND MALIGN REGIONAL ACTORS.

People's Republic of China. The NDS's central idea of "expanding the competitive space" must be applied globally, not only in the Pacific, but also in our own neighborhood. The NDS requires us to "sustain our advantages in the Western

[1] Only PPE that was available within the partner nation or for purchase from a third party were donated due to the simultaneous shortage we faced in the United States.

Hemisphere" and maintain a favorable balance of power in this region, while bolstering partners against coercion.

The PRC continues to increase its self-serving activities to gain global influence and leverage across all domains in the USSOUTHCOM AOR: cyber, space, extractive and energy industries, transportation hubs, roads, infrastructure, telecommunications, legal and illegal fishing, agriculture, and military training—Spanish and Portuguese-language military education modeled after United States professional military education. The PRC is also "gifting" security supplies and equipment as a way to gain access and win favor with regional security forces. As already discussed, COVID–19 has brought on a new era of medical diplomacy that the PRC seeks to leverage to its advantage. All of these overtures, to include the OBOR initiative, are part of a concerted effort by Beijing to indebt fragile countries in the region, impinge on our partners' and allies' sovereignty, and use its influence to extract concessions when needed. The PRC also thrives on and enables the corruption and lack of transparency in business and political deals exhibited in some of the countries of Latin America and the Caribbean. Beijing pairs these engagements with aggressive information operations that spread disinformation—emblematic of how the PRC's actions are guided by different values than those of the United States and our regional partners.

The PRC is rapidly advancing toward their goal of economic dominance in the region within the next ten years. In 2019, the PRC surpassed the United States as the leading trade partner with Brazil, Chile, Peru, and Uruguay and is now the region's second-largest trading partner behind the United States. From 2002 to 2019, PRC trade with Latin America soared from $17 billion to over $315 billion, with plans to reach $500 billion in trade by 2025.

The PRC is also seeking to establish global logistics and basing infrastructure in our hemisphere in order to project and sustain military power at greater distances. Outside our region, Beijing consistently abuses commercial arrangements at host country ports to support military functions and obfuscate the true purpose of its overseas installations.

Chinese Illegal, Unreported, and Unregulated (IUU) fishing just outside or within the outer limits of South American Economic Exclusion Zones (EEZ) is another predatory practice that poses a threat to the livelihood of coastal nations. The Chinese Government admittedly subsidizes this activity and is reluctant to curtail it because of its importance to PRC's food security and economy, with IUU fishing costing the region about $2.7 billion in lost revenue annually. In August, activity of a fleet of approximately 350 Chinese operated vessels posed a threat to the Galapagos Marine Reserve and endangered species resulting in an international outcry, exposing this malign activity.

Russia. Russia is increasingly asserting itself in Latin America and the Caribbean, pursuing a strategy intended to grow Moscow's influence and undermine United States leadership in the region over the long term. Russia is actively engaging in this region to counter what it views as the United States meddling in its near-abroad. Expanding air and sea access to project military power, it has agreements with Venezuela and Nicaragua that allow Russian warships to visit on short notice. Moscow has executed three strategic bomber deployments to the region since 2008 and made more than 40 port calls since 2010. Russia doubled its naval deployments in this region, going from five (2008–2014), to 11 (2015–2020). Russia is trying to make inroads in the hemisphere by providing security training and has conducted $2.3 billion in weapons and military equipment sales in the last 10 years. At the same time, Moscow is working to discredit the United States by flooding the region's information space with disinformation, to include hundreds of articles distorting United States security actions. In 2020, Russian Spanish-language media outlets more than doubled their social media followers from 7 million to over 18 million.

Iran. Iran uses both formal and informal instruments to expand its influence in Latin America and the Caribbean and prepare for any potential contingencies. Tehran seeks to expand its economic ties to the region, and leverages its security expertise and well-established diaspora in the region to expand trade and its overall influence. The Islamic Revolutionary Guard Corps-Qods Force, Tehran's primary external operations unit for exporting the Islamic Revolution, maintains operatives in foreign embassies, charities, and religious and cultural institutions to enhance ties globally. In the past year, Iran has expanded economic and security cooperation with Venezuela on fuel transfers, food staples, and military assistance, possibly expanding the Qods Force's presence in the region. Tehran also relies on a system of Iranian state-sponsored and non-state facilitated media outlets to shape the information domain to generate empathy for Iran and Shia Islam and diminish Western

influence in the hemisphere. Tehran maintains a Spanish-language channel that reaches 17 countries in the region.

Venezuela. The Venezuelan people continue to suffer under the illegitimate Maduro regime. They lack basic services, clean water, food, and health care. The impacts of COVID–19, gas shortages, increasing levels of unemployment and inflation (at over 3000 percent), and human rights violations all compound one of the most severe humanitarian crises in the history of this hemisphere. The illegitimate regime is even struggling to provide basic services within Caracas, to which it previously diverted most of its resources to avoid threats to its control. Venezuelan migration continues to destabilize the region, straining the health systems and economies of Venezuela's neighboring countries. As of December 2020, approximately 5.5 million refugees and migrants from Venezuela were displaced globally, with some 4.6 million remaining in Latin America and the Caribbean. Venezuela is also the primary foothold and access point in the region for ESAs, enables TCO activities, and gives refuge to regional terrorist groups.

Cuba. Cuba remains a regional corrosive influence that enables and inspires autocratic regimes in the hemisphere and is the primary supporter of the illegitimate Maduro regime in Venezuela. Cuba is the entry point for ESA influence in the region and its reach extends beyond this hemisphere. Like the PRC, Cuba uses medical diplomacy to build international goodwill and gain back door access to undermine fragile democracies. Havana has fully exploited the COVID–19 pandemic to reinvigorate its medical outreach, a key revenue generator for the island at a time when it is desperate for income.

Nicaragua. Nicaragua's current political crisis that began in 2018 continues, with President Ortega's policies still leading to calls for his resignation. We are already seeing a concerning suppression of the opposition, in advance of this year's election. Managua maintains close ties with Moscow, whose security assistance to Nicaragua focuses on Professional Military Education, donations, and the provision of humanitarian assistance in a strategy to subjugate the Nicaraguan Government and counter United States regional goals. Over the past decade Russia built a joint counternarcotic training center in Nicaragua, trained at least 500 Latin American and Caribbean officers, and conducted multiple maritime and air deployments to the country.

What we're doing about it. We work to effectively posture U.S. Forces to ensure we can achieve NDS objectives. USSOUTHCOM remains committed to maintaining our advantage and to our allies and partners to protect and advance mutual security interests. We, along with State do this through a wide range of security cooperation and assistance activities aimed at building partner capacity such as DOD's Joint Exercise and Humanitarian Assistances Programs and State's Foreign Military Financing (FMF) and International Military Education Training (IMET) programs, as well as information and intelligence sharing. To put it simply, we outcompete bad guys by being the good guys. While our adversaries look for opportunities to extract, we look for ways to build up. We work with partners to understand where their capability gaps are and how we can help fill those in—stronger partners are better equipped to secure our hemisphere, our neighborhood. Our training is responsive to the needs of our partners, it's the highest possible quality, and includes emphasis on professionalism to include values like respect for human rights and the rule of law as an inherent element of professional military and security forces. It emphasizes the importance of a strong non-commissioned officer corps and empowering women as part of the entire force. At USSOUTHCOM, we are committed to integrating gender perspectives into all of our activities, and we encourage our partners to create structural changes in their militaries to allow for the same through our Women, Peace and Security in the Western Hemisphere Initiative. For a nation's defense and security forces to be sustainable, legitimate, and respected, the meaningful inclusion of women is imperative. Our Human Rights Office, the only such program at any Combatant Command, actively promotes building stronger military human rights programs with partner nation militaries.

Our exercise program is designed to counter threats, build readiness, and enhance our partners' capabilities, interoperability, and domain awareness. This is a vital component of our strategy, allowing us to conduct multi-domain exercises with our partners and build interoperability and readiness that improve our collective ability to secure the region.

Being on the field, with a presence at Cooperative Security Locations in El Salvador, Colombia, and Curacao, and a Forward Operating Site in Honduras, home of Joint Task Force Bravo (JTF–Bravo), enables us to answer the call and build trust, when our neighbors ask for help in a crisis, as they did following the back-to-back major hurricanes that devastated Central America late last year. In the aftermath of Hurricanes Eta and Iota, our forces at JTF–Bravo, with support from

our components and allies, responded immediately, conducting search and rescue operations and delivering lifesaving aid to areas isolated by the storms, delivering over 1.2 million pounds of life-saving humanitarian aid and rescuing 852 people. There is no better way to demonstrate U.S. commitment to the region than to respond to our neighbors' needs in times of crisis.

Through our security cooperation program, we focus on building our partners' capacity to conduct ground and maritime interdiction, defend their cyber networks, secure their borders and sovereignty, and maintain domain awareness. The Near Coastal Patrol Vessel (NCPV) program is a USSOUTHCOM initiative to address selected Caribbean and Central American partners' requirements for a maritime patrol vessel with the capacity to conduct sustained Maritime Interdiction Operations. Fielding these vessels in key partner nations will increase interoperability and regional ability to counter regional threats, the nefarious activities of which pose an existential threat to many of our partners.

Another important capability to outcompete our adversaries in the region is intelligence-driven—we must gather information across all domains and share it as widely as possible with our partners. We shine a light on the PRC's predatory and corrupt actions so our partners can recognize the PRC's malign activities and make well-informed decisions on engaging Beijing. We continue to convey to our partners and allies that Beijing and Moscow seek to undermine their national sovereignty and fosters instability that allows TCOs a foothold within their borders. We also highlight that partnering with the PRC requires turning a blind eye to malign behavior that ranges from corruption and human rights abuses to environmental degradation and natural resource depletion.

TRANSNATIONAL CRIMINAL ORGANIZATIONS (TCOS) AND VIOLENT EXTREMIST ORGANIZATIONS (VEOS).

TCOs. TCOs are violent and they pose a national security threat to the United States Homeland. They share the goal of PRC, Russia, and other malign actors to advance their self-interests at the expense of our partners' sovereignty. TCOs engage in a wide array of illegal activities including drug and weapons trafficking, human smuggling and trafficking, and money laundering. TCOs make up an approximately $90 billion a year life-threatening enterprise through cocaine profits alone and are responsible for thousands of deaths in the United States each year, forging a trail of violence, corruption, and instability through our region in route to our Homeland. In many cases, TCOs are better funded than partner nation security forces. In 2020, drug traffickers likely attempted to move an estimated 2,300 metric tons of cocaine, departing from the source zone toward the United States, Europe, and other markets. Their efforts persist despite combined security operations and COVID quarantine measures (such as border and port closures), indicating these traffickers are bent on undermining security and prosperity for us, our allies, and partner nations all for the sake of profit. The COVID–19 environment has caused some traffickers to stockpile cocaine, and complicated coca eradication operations in the Andean Ridge. Traffickers have adapted to the COVID environment, cocaine flow has increased and rebounded to pre-pandemic levels. We must remain ready with increased U.S. and partner nation presence and pressure to stem this flood.

Narcotrafficking is a scourge throughout the hemisphere and TCOs aren't the only ones who benefit—the Maduro regime is heavily involved in trafficking narcotics, overtly supporting narcoterrorism while the innocent citizens of Venezuela continue to suffer under extreme oppression and grinding poverty. From 2015 to 2019 the known drug flow out of Venezuela increased by 145 percent. Over the last few years, the illegitimate Maduro regime has collaborated with National Liberation Army (ELN) and the Revolutionary Armed Forces of Colombia Dissidents (FARC–D) to move hundreds of metric tons of cocaine from Colombia through Venezuela via noncommercial aircraft and commercial cargo ships. This relationship also extends to illicit gold mining, a critical commodity that Maduro uses to sustain his illegitimate regime and military loyalty at the expense of the Venezuelan people.

Regional Terrorist Organizations. The Revolutionary Armed Forces of Colombia Dissidents (FARC–D) and National Liberation Army (ELN) are the two main organized armed terrorist groups and drug trafficking organizations in the region whose actions pose a direct threat to our Homeland and partners. The FARC–D is composed of remnants of the FARC, who traffic drugs and engage in extortion and illegal mining to generate revenue. The FARC–D targets Venezuelan nationals for recruitment, using money, food, and safe passage to encourage or coerce desperate Venezuelan migrants to support their cause. The ELN also remains committed to fighting the Colombian Government and does so violently through the use of impro-

vised explosive devices and vehicle-borne explosives. This group fundraises primarily through the drug trade and illicit mining, as well as by imposing "war taxes" on drug labs and other businesses in its control. The ELN and FARC–D benefit from unchallenged freedom of movement and protection in Venezuela, with much of their leadership operating with impunity from within Venezuelan borders. Venezuela has become a paradise of impunity for narcotraffickers, while the Venezuelan people are forced to endure a nightmare of insecurity.

Al Qaeda and ISIS maintain some sympathizers in the region. After ISIS's intense propaganda campaign from 2014 to 2017, as many as 200 Trinidadians left the Caribbean islands to join the fight in Iraq and Syria. Several family members who traveled with the fighters are still in the Middle East and seek to return to the region, which will challenge the region's security services at a time when they are already overstretched due to the pandemic. Hizballah leverages the region's Lebanese diaspora throughout Latin America and the Caribbean for fundraising, recruiting, and logistical support. Operationally, Hizballah's Islamic Jihad Organization (IJO), its external operations arm, is responsible for at least three high-profile attacks in the region and three other planned operations that were disrupted.

Special Interest Aliens (SIAs). In 2020, United States and partner law enforcement, with support from the intelligence community, arrested 66 Latin American human smuggling facilitators involved in moving non-United States citizens who potentially pose a national security risk to the United States or its interests. These facilitators move SIAs from countries like Afghanistan, Bangladesh, Pakistan, Somalia and Yemen—areas with pronounced VEO activity—through Latin America and toward the United States for fees ranging from $10,000 to $50,000 per person. This business is dangerous, but lucrative, generating between $150 to $350 million a year for the facilitators.

What we're doing about it. Our regional partnerships are vital to security and prosperity in this hemisphere and to our collective ability to confront global challenges including ESAs, TCOs, and VEOs. The men and women of USSOUTHCOM work hard every day alongside our strong interagency and international partners to disrupt and degrade these adversaries, while maintaining U.S. presence, access, and influence in our hemisphere. The Joint Interagency Task Force-South (JIATF–S) in Key West, conducts our statutorily-directed mission to detect and monitor illicit narcotics, delivering a high return on modest investments. Last year, this international and interagency "team of teams" helped keep 264 metric tons of cocaine off U.S. streets. JIATF–S-facilitated interdictions historically account for almost four times the cocaine seized by all domestic and border enforcement efforts combined. In an operating area that is 11 times larger than the United States, JIATF–S provides the best bang for the taxpayer buck when it comes to keeping drugs from arriving on our shores.

Last year, recognizing the seriousness of the TCO threat to the United States Homeland, the Secretary of Defense authorized an all domain enhanced counternarcotic operation to reduce the flow of illicit drugs, degrade TCOs, and increase interoperability and readiness. In the past year, the U.S. Navy stepped up, providing more ship presence and maritime patrol aircraft. These assets have achieved significant return on investment as well as provided readiness building opportunities for our Fourth Fleet and Navy crews. This initiative included an increase in surface and air platforms, other intelligence assets, and a Security Forces Assistance Brigade to work with our partners. We are putting these assets to good use, integrating with interagency and international partners across all domains to ensure long-term success. Through the employment of these additional assets we increased the targeting of known air and maritime illicit trafficking events by 65 percent. Our whole of Government and partner nation approach has disrupted over 240 metric tons of cocaine and almost 100,000 pounds of marijuana. We have detained over 700 suspected drug smugglers, denied almost $6 billion of profits to TCOs, and most importantly, saved the lives of more than 2000 Americans. A Security Forces Assistance Brigade is currently training Colombian and Honduran forces to more effectively fuse their intelligence to inform manual eradication and lab destruction efforts——helping to stop the drug threat closer to the source, before it begins its journey to the United States. We plan on expanding this effort into other nations in Central America with a focus on capabilities to counter TCOs.

With this increase of U.S. all domain presence and pressure—a sign of U.S. leadership and commitment to the region—our partner nations, who could have easily turned inward to focus on the COVID–19 crisis, instead stepped up their participation to counter TCOs, demonstrating their commitment to countering this threat. Key partners like Colombia, Costa Rica, Panama, Guatemala, El Salvador, and others have been involved in almost 60 percent of drug disruptions during this operation. Years of sustained security cooperation with our partners throughout our

hemisphere is really paying dividends—we have helped build the capability of these nations to operate with us to disrupt drug shipments before those loads enter the Homeland.

We have very willing partners in this hemisphere, and they demonstrated their commitment throughout the year, despite the increased challenges of COVID. Colombia kicked off Operation Orion V in April 2020, just as COVID was beginning to impact their country, stating that if the United States is committed to the drug fight during COVID, they would stand with us. Operation Orion V was a multi-national (26 countries), all-domain operation that resulted in 50 metric tons of cocaine disrupted, 72 drug labs destroyed, and $1.5 billion in profits denied to TCOs. The U.S. provided maritime patrol aircraft (MPA) and analyst support to this operation. Colombia just concluded the follow-on Operation Orion VI, in which this coalition disrupted another 76.5 metric tons of cocaine and detained over 400 traffickers. This is just one example of the large return on investment gained by combining a willing and able partner with a committed United States presence in the Western Hemisphere.

While the Secretary of Defense agreed to continue sourcing this mission with traditional military assets, this mission also benefits from non-traditional resources. Congressional support to the counternarcotic mission has been instrumental in the success of these operations. We are filling capability gaps through innovative solutions like the Multi Mission Support Vessel (MMSV). The MMSV has supported the disruption of almost 8 metric tons of cocaine and 15,000 pounds of marijuana, denied over $180 million in profits to TCOs, and detained 48 drug traffickers, while also keeping three low profile vessels carrying tons of narcotics from reaching our shores. It also extends the reach of our partner nation interdiction vessels as they launch in support of these counterdrug operations. We are applying commercially-available technology like unmanned aircraft systems to increase the MMSV's ability to conduct detection and monitoring and provide information to partner nation interdiction assets.

SOUTHCOM employs less than 1 percent of DOD Intelligence, Surveillance, and Reconnaissance (ISR) resources to counter ESAs and TCOs in this region. To meet the mission, we are pushing the envelope with innovative techniques, focusing on a 21st century, non-traditional approach to intelligence that integrates publicly available information, advanced analytics, artificial intelligence and machine learning, and open collaboration with allies and partners to disrupt threats. These emerging tools offer persistent, AOR-wide coverage without risk to personnel at a relatively low cost and puts us in a position to better compete against adversaries. Our Technical Network Analysis Cell (TNAC) and Asymmetric Target Acquisition Center (ATAC) are just two examples of our approach. For an investment of $1.2 million the TNAC at JIATF–S denied TCOs of $817.1 million in revenue by providing actionable intelligence, in cooperation with our law enforcement partners, that is shared with partner nations and interagency partners leading to numerous disruptions. The ATAC, run by our Special Operations Command South (SOCSOUTH), is supporting law enforcement efforts to counter TCOs. The Congressional support we have received for ISR has been critical to sustaining the innovative capabilities that support our unique mission, making our non-traditional approach to ISR possible. USSOUTHCOM ISR activities are optimized for return on investment with a mix of traditional platforms, purpose-built sensors, and increasingly non-traditional collection methods. USSOUTHCOM will continue to work with the Department to ensure we can meet our vital mission to disrupt transnational criminal organizations, as well as work in concert with regional partners to confront shared threats.

While we are making strides, we are but one part of the solution. This problem set requires a whole-of-government and whole-of-society solution to address both the supply and demand sides of this threat. Drugs have killed 840,000 Americans since 1999,[2] and continue to kill 70,000 Americans a year. Drugs cost our Nation billions each year in criminal justice, healthcare, and productivity losses—in addition to the suffering caused by shattered and lost lives. We must continue and further enhance the tremendous interagency and international cooperation we have fostered over recent years against this common enemy.

As the U.S. Coast Guard provides the bulk of our counterdrug forces, the acquisition and deployment of their Offshore Patrol Cutter will be critical to keeping drugs off our streets and countering TCOs. Each additional force package (maritime patrol aircraft, flight deck capable ship, embarked helicopter, small boat (US Coast Guard over-the-horizon boat or U.S. Navy 11 meter RHIB), and law enforcement detachment) enables the disruption of 35 more metric tons of cocaine and the strong presence reinforces to our partners that we are all-in with them—building trust.

[2] https://www.drugabuse.gov/drug-topics/trends-statistics/costs-substance-abuse

On the counterterrorism (CT) front, our Special Operations Command—South (SOCSOUTH) maintains persistent presence in several countries in the region, working and training with partner militaries. Our focus is on improving partner nation CT response capabilities, interoperability, and information sharing. The DOD Rewards Program has again provided tremendous return on investment in the fight against terrorism. In 2020, USSOUTHCOM paid $979,000 in rewards to 54 informants that resulted in the neutralization of a record 107 individuals who were terrorists or force protection threats and seizure of 26 weapons/explosive caches and $952,000 in cash. Although this is a counterterror and force protection program, it also yielded significant counternarcotic effects including the seizure of 14 metric tons of cocaine and the destruction of 12 drug labs. We also continue to focus efforts on assessing the financial underpinnings of national security threats in the region and have deepened our counter-threat finance related collaboration with the U.S. Treasury Department and interagency partners. This includes providing direct analytic support to the development of sanctions against Central and South American-based transnational organized crime groups that launder money, traffic drugs, and corrupt government officials in the region. An area requiring more emphasis is TCO network mapping and holistic interagency and partner nation efforts to dismantle key TCO centers of gravity such as logistics and finances.

USSOUTHCOM also takes a total force approach to these challenges, taking full advantage of the Reserve component, composed of Guard and Reserve Forces. With fewer apportioned forces and a smaller budget than most regional combatant commands, I have a great appreciation for the importance and critical support they provide to our interagency and international partners. The ability of the National Guard, to work directly with host nations and local institutions through the State Partnership Program is a force multiplier for engaging our partners. Over one third of those State partnerships are in our AOR, strategically complementing our security cooperation efforts.

Joint Task Force Guantanamo Bay (JTF–GTMO). JTF–GTMO continues to conduct safe, legal, and humane detention operations. In an effort to do so in a more efficient manner, the JTF has taken steps to right-size its force and consolidate operations. To date, we have safely reduced military personnel by over 20 percent. This is part of an ongoing effort to continually assess all USSOUTHCOM operations to ensure we are maximizing use of resources.

WHAT MORE CAN BE DONE/WHAT WE NEED

Quality of Life. People are our most important resource and our absolute priority. None of the initiatives described above would be possible without the tremendous work of our men and women. South Florida, including Miami and the Florida Keys, is a high cost-of-living area that poses many challenges to our personnel. The housing market is so competitive that personnel pay upwards of $10,000 of up-front fees in order to secure a rental unit. We are working with the supportive local community to find immediate relief options for our servicemembers and civilians on housing and other factors that contribute to the high cost of living. We are also appreciative of the Department of the Army's support to find a permanent, cost effective housing solution here in Miami. We have also established TEAM SOUTHCOM, a family readiness group, to support all of our families, especially as they transition to this high-cost area and a non-standard military installation.

Congressional Support. We appreciate your support of our security cooperation program in the USSOUTHCOM AOR as a continued recognition of the importance of these programs in our hemisphere. We also appreciate the increased flexibility that Congress included in the Fiscal Year 2021 Consolidated Appropriations Act by increasing the percentage of 333 funds that may be used over 2 years. Greater funding flexibility increases our ability to plan and execute multi-year programs to build partner capacity. Congress also continued support to USSOUTHCOM's ISR program and the MMSV—two investments that will increase our domain awareness and ability to stop threats bound for our Homeland.

Infrastructure. The Fiscal Year 2021 National Defense Authorization Act authorized planning and design funding for a new Command and Control Facility for JIATF–S, recognizing what the U.S. Army Corps of Engineers determined was a compelling need to replace its current 1950's constructed facility. We appreciate this support and are working to complete the design for a resilient facility built to enable interagency and international collaboration for this critical mission. USSOUTHCOM is also working closely with the Defense Health Agency to replace the hospital at Naval Station Guantanamo Bay (NSGB), which is experiencing severe structural deterioration. This medical treatment facility (MTF) is the only strategic medical hub to support the full spectrum of mission personnel operating in the USSOUTHCOM

AOR! It is also the only MTF for personnel at NSGB, as there are no civilian options available. It is also important to note that NSGB is a strategic asset as the only U.S. base in the USSOUTHCOM AOR.

Supporting our Partners. The U.S. military has established programs that help our partners develop diverse and inclusive militaries that respect the rule of law and human rights. These are the characteristics of a professional force that has legitimacy in the eyes of its population. Consistent engagement with our partner militaries and security forces through programs like our human rights training and women, peace, and security programs, as well as through the range of security cooperation and assistance programs, is essential to our ability build their institutional capacity and resiliency to the range of threats we all face together.

CONCLUSION

The security threats in the Western Hemisphere, our shared neighborhood, demand a sense of urgency. TCOs threaten our United States Homeland. We also see the rise in the PRC's leverage and influence is not just a South China Sea problem, it is a global problem, and it requires a solution that includes our partners and allies. When our neighborhood is strong, so is our national security. We no longer have two oceans to keep our adversaries at bay—their malign activity is knocking on our door, creating instability in an already fragile region, enabling TCOs to take hold in an attempt to weaken democracies and perpetuate corruption. We must stand by our partners.

We hold ourselves to a high standard. We have strong values as Americans. We ensure our partners respect human rights; we train them on the responsible use of military equipment; we help build the institutional capacity to maintain professional military and security forces; and we operate transparently and in accordance with civilian leadership, international norms, and the rule of law. U.S. security cooperation with our partners ultimately bolsters our own national security and has done so for over 70 years. Investing in our neighborhood is an investment in national security and we are at a critical juncture where focus and attention are essential to maintaining positional advantage.

I look forward to discussing our efforts to capitalize on the opportunities for shared security that exist in strengthening our partnerships.

Chairman REED. Thank you, Admiral. General VanHerck, please.

STATEMENT OF GENERAL GLEN D. VANHERCK, USAF, COMMANDER, UNITED STATES NORTHERN COMMAND AND NORTH AMERICAN AEROSPACE DEFENSE COMMAND

General VANHERCK. Chairman Reed, Ranking Member Inhofe, and the distinguished Members of the Committee, it is a privilege to testify with you here today. I am honored to serve as the Commander of the United States Northern Command and North American Aerospace Defense Command, and I am grateful to appear alongside Admiral Faller, as SOUTHCOM is a crucial partner in Homeland defense.

USNORTHCOM and NORAD are separate commands charged with the critical mission of defending the United States and North America, respectively. USNORTHCOM is the United States geographic combatant command responsible for the defense of the Homeland, defense and support of civil authorities, and theater security cooperation for Canada, the Bahamas, and Mexico. NORAD is the bi-national command that provides aerospace warning, airspace control, and maritime warning for the United States and Canada.

USNORTHCOM and NORAD's servicemembers and civilians are executing the Secretary of Defense's top priority by standing watch to defend our Nation against all threats, whether posed by competitors, natural disasters, or a pandemic. Over the last year, NORAD fighters, tankers, and airborne early warning aircraft responded to multiple incursions into our Air Defense Identification Zones, mul-

tiple ships sortied under USNORTHCOM Operation Control to defend our maritime approaches, and USNORTHCOM synchronized the Department of Defense's support to lead Federal agencies as thousands of servicemembers deployed within the USNORTHCOM area of responsibility to aid states and local communities in the fight against coronavirus.

Today, thousands of servicemembers are providing lifesaving vaccinations to our citizens. No matter the threat, we are always ready to defend the lives of our citizens and our Homelands.

Right now, as we confront the scourge of this pandemic, the threats we face and the pace of change in the geostrategic environment continue to advance. We have entered an era of renewed global competition, and this time we are facing two peer competitors, both nuclear armed. We must adapt to the challenges posed by this reality.

Since the first Gulf War, the United States military has focused on projecting power forward to confront rogue regimes, violent extremist organizations, and other potential adversaries who threated American interests. We trusted in our nuclear deterrent and an assured power project capability, as well as the blessings of geography, to prevent an attack on our soil.

In parallel, our competitors expanded the definition of competition into economic and informational areas, and have aggressively advanced their own military capabilities to hold our Homelands at risk, both kinetically and non-kinetically. Those efforts were predominantly focused on long-range strike, improved delivery platforms, cyber capabilities intended to circumvent our defenses from all directions and in all domains, and exploiting a perceived gap between our foundational nuclear deterrent and our conventional Homeland defense deterrent capabilities.

Concurrently, the rise of transnational criminal organizations and the subsequent strains on governance and the instability they create has created additional opportunities for our competitors that they are working to exploit today.

We must outpace our competitors by accelerating our own efforts to transform our culture, investing in our people to grow both talent within the ranks and counter extremist and destructive behaviors anti-ethical to our values. We must invest early and often in relationships with allies and partners to develop a global team of like-minded nations, and we must factor Homeland defense into every strategy, plan, force management, force design, as well as all aspects of acquisitions and budget, so we deter in competition, de-escalating crisis, and defeat in conflict. To do this both USNORTHCOM and NORAD are concentrating efforts on building our capability to deter, and, if needed, defend against increasingly advanced all-domain threats.

Together with the Canadian Armed Forces we are in the early stages of NORAD modernization and building additional military capabilities in the Arctic. In coordination with the Missile Defense Agency, United States Strategic Command, and United States Space Command (SPACECOM) we are maintaining and improving our ballistic missile defense capability.

In order to balance our readiness for crisis and conflict, while also staying in global competition, we are placing significant em-

phasis on left-of-launch framework. This framework will increase decision space, uncovering more deterrents and de-escalation options vice end-game defeat. We are advocating for investment in all-domain awareness, to generate a layered sensing grid and a layered defense approach that emphasizes the use of an open sensor data architecture and machine-enhanced processing in order to achieve information dominance and decision superiority. Through information dominance, we will grant decision-makers increased decision space and build flexible response options to deter, deny, and defeat every threat to the United States and Canada.

I am grateful for the trust that you place in United States Northern Command and NORAD, and both commands take solemn pride in our responsibility to defend our Homelands. We will forever have the watch.

Thank you for your support and time, and I look forward to answering your questions.

[The prepared statement of General VanHerck follows:]

PREPARED STATEMENT BY GENERAL GLEN VANHERCK

Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee: Thank you for the opportunity to testify today, and for allowing me the honor of representing the Soldiers, Sailors, Airmen, Marines, Guardians, Coast Guardsmen, and civilians of United States Northern Command (USNORTHCOM) and North American Aerospace Defense Command (NORAD). I am especially privileged to represent the members of the Canadian Armed Forces who are a vital and essential part of the NORAD team.

USNORTHCOM is the U.S. geographic combatant command responsible for defense of the United States Homeland. USNORTHCOM is also tasked with providing defense support of civil authorities and engaging in theater security cooperation with regional allies and partners. NORAD is a distinct, bi-national command responsible for three missions in defense of the United States and Canada: aerospace warning, aerospace control, and maritime warning. Canadian Armed Forces personnel, to include my three-star NORAD Deputy Commander, are essential to our NORAD missions.

Since I assumed command of USNORTHCOM and NORAD, each day has afforded me the opportunity to lead a workforce of dedicated, innovative, and resilient warfighters and public servants. That fundamental commitment to our vital missions is clearly evident as USNORTHCOM and NORAD have kept the watch and defended our Nations in what is certainly the most dynamic and complex strategic environment I have encountered in my 33 years in uniform.

Our competitors continue to take increasingly aggressive steps to gain the upper hand in the military, information, economic, and diplomatic arenas. USNORTHCOM meets each of those challenges head-on—and we have done so while supporting whole-of-government efforts to safeguard our citizens through the coronavirus pandemic and historically severe hurricane and wildfire seasons, and also simultaneously synchronizing the deployment of troops to support federal law enforcement personnel on the southwest border. The cascading events of the past year placed unprecedented strain on our people, our interagency partners, and our institutions, and I am proud that we overcame each of those challenges and emerged more resilient.

That steadfast commitment is more important than ever as our competitors continue to target the Homelands through multiple means in all domains. Defending our Nations, our citizens, and our way of life requires constant vigilance, and USNORTHCOM and NORAD have demonstrated time and again that our commands remain determined, focused, and ready. But we must keep moving forward. Looking to the future, we will continue to pursue innovative new capabilities and strategies to detect, deny, deter, and, if necessary, defeat the mounting threats posed by peer competitors, rogue nations, transnational criminal organizations, and foreign and domestic violent extremists. No matter the challenge or circumstance, this Committee should rest assured USNORTHCOM and NORAD are always on guard.

THREATS

The global geostrategic environment continues to evolve rapidly. While the United States has spent the last 30 years projecting power forward to combat rogue regimes and violent extremists overseas, our global competitors pursued capabilities to circumvent our legacy warning and defensive systems and hold our Homeland at risk. Peer competitors like Russia and China are undermining the international rules-based order and challenging us in all domains. Further, rogue states like North Korea and Iran are also pursuing capabilities to nullify our military advantages, threaten our networks with cyber weapons, and—in the case of North Korea—develop nuclear weapons. Meanwhile, violent extremist organizations continue to devise plots to attack our citizens and our way of life.

During the Cold War, we were overwhelmingly focused on defending the United States and Canada from a single nation-state threat. After the Soviet collapse, Iraq's invasion of Kuwait and later the September 11, 2001 attacks shifted our focus to non-state and rogue actors. Today, we don't have the luxury of focusing regionally or on only one threat at a time. In the last decade, we've seen a sharp resurgence in the Nation-State threat as our global competitors deploy increasingly sophisticated capabilities to hold the United States and Canada at risk and limit our options in a crisis. Concurrently, the terrorist threat continues to evolve in ways that challenge our Homeland defense capabilities. As a result, today's threat environment is likely the most complex we have ever faced, as potential adversaries threaten us in all domains and from all vectors.

Russia

Russia presents a persistent, proximate threat to the United States and Canada and remains the most acute challenge to our Homeland defense mission. Russian leaders seek to erode our influence, assert their regional dominance, and reclaim their status as a global power through a whole-of-government strategy that includes information operations, deception, economic coercion, and the threat of military force.

In peacetime, Russian actors conduct sophisticated influence operations to fan flames of discord in the United States and undermine faith in our democratic institutions. In crisis or conflict, we should expect Russia to employ its broad range of advanced capabilities—non-kinetic, conventional, and nuclear—to threaten our critical infrastructure in an attempt to limit our ability to project forces and to attempt to compel de-escalation. Offensive capabilities Russia has fielded over the last several years include advanced cyber and counterspace weapons and a new generation of long-range and highly precise land-attack cruise missiles—including hypersonics. These capabilities complicate our ability to detect and defend against an inbound attack from the air, sea, and even those originating from Russian soil.

Russia also continues to modernize all three legs of its nuclear triad. In December 2019, Russia fielded the world's first two intercontinental ballistic missiles (ICBMs) equipped with a hypersonic glide vehicle payload that will challenge our ability to provide actionable warning and attack assessment. In the coming years, Russia hopes to field a series of even more advanced weapons intended to ensure its ability to deliver nuclear weapons to the United States. These include the Poseidon transoceanic nuclear torpedo and the Burevestnik nuclear-powered cruise missile, which—if perfected—could enable strikes from virtually any vector due to its extreme range and endurance.

Finally, Russia continues to conduct frequent military operations in the approaches to North America. Last year, NORAD responded to more Russian military flights off the coast of Alaska than we've seen in any year since the end of the Cold War. These Russian military operations include multiple flights of heavy bombers, anti-submarine aircraft, and intelligence collection platforms near Alaska. These efforts show both Russia's military reach and how they rehearse potential strikes on our Homeland. Last summer, the Russian Navy focused its annual OCEAN SHIELD exercise on the defense of Russia's maritime approaches in the Arctic and Pacific. The multi-fleet exercise, intended in part to demonstrate Russia's ability to control access to the Arctic through the Bering Strait, included amphibious landings on the Chukotka Peninsula opposite Alaska, as well as anti-submarine patrols and anti-ship cruise missile launches from within the U.S. Exclusive Economic Zone.

China

China continues to pursue an aggressive geopolitical strategy that seeks to undermine United States influence around the globe and shape the international environment to its advantage. In the USNORTHCOM area of responsibility, China has made deliberate attempts to increase its economic and political influence with our close partners in Mexico and The Bahamas. While the United States remains the

economic and military partner of choice in the region, China is seeking to grow its trade and investment in Mexico and, over the past few years, has invested in The Bahamas' vital tourism sector through marquee infrastructure projects. Militarily, China is rapidly advancing a modernization program that seeks to erode our military advantages and deter us from intervening in a regional conflict.

China remains among the world's most capable and brazen cyber actors, stealing volumes of sensitive data from United States Government, military, academic, cleared defense contractors, and other commercial networks each year. In a crisis, China is postured to transition rapidly from cyber exploitation to cyber attack in an attempt to frustrate our ability to flow forces across the Pacific, and globally. China also continues to advance its counter-space capabilities that could threaten our space-based communications and sensors. In the foreseeable future, China will likely be able to augment its cyber-attack capabilities with a new family of long-range precision-strike weapons capable of targeting key logistical nodes on our West Coast that support United States mobilization and sustainment.

China also continues to expand and modernize its strategic nuclear forces to rival those of Russia and the United States in sophistication, if not in numbers. Over the last decade, China fielded dozens of road-mobile ICBMs and several ballistic missile submarines designed to enhance the survivability of China's nuclear deterrent and ensure its ability to retaliate following any attack. In the next decade, China will deploy a new generation of advanced weapons—some of them hypersonic—that will further diversify their nuclear strike options and any attack. In the next decade, China will deploy a new generation of advanced weapons—some of them hypersonic—that will further diversify their nuclear strike options and any attack. In the next decade, China will deploy a new generation of advanced weapons—some of them hypersonic—that will further diversify their nuclear strike options and

North Korea and Iran

The Kim Jong-un regime has achieved alarming success in its quest to demonstrate the capability to threaten the United States Homeland with nuclear-armed ICBMs, believing such weapons are necessary to deter U.S. military action and ensure his regime's survival. In 2017, North Korea successfully tested a thermonuclear device—increasing the destructive potential of their strategic weapons by an order of magnitude—as well as three ICBMs capable of ranging the United States. In October 2020, North Korea unveiled a new ICBM considerably larger and presumably more capable than the systems they tested in 2017, further increasing the threat posed to our Homeland. The North Korean regime has also indicated that it is no longer bound by the unilateral nuclear and ICBM testing moratorium announced in 2018, suggesting that Kim Jong-un may begin flight testing an improved ICBM design in the near future.

Iran continues to advance its military technologies and threaten the security of United States Forces and allies throughout the Middle East. Iran adheres to a self-imposed range limit on its ballistic missile force that prevents it from directly threatening the United States. Nonetheless, Iran is developing and testing ICBM-relevant technologies through its theater missiles and space launch platforms—including its first successful orbit of a military satellite in April of 2020—that could accelerate the development of a Homeland-threatening ICBM should Iran's leaders choose to pursue such a system. Iran retains the ability to conduct attacks via covert operations, terrorist proxies, and its growing cyber-attack capabilities, which it has already employed against United States financial institutions.

Violent Extremist Organizations

The terrorist threat has grown more diffuse, typified by simple attacks inspired from afar and carried out by individuals or small networks that are difficult for our law enforcement partners to detect and interdict. Foreign terrorist groups remain committed to attacking the United States, either directly or by inspiring homegrown violent extremists (HVEs) to act in their stead. Despite their territorial losses over the last several years, 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. Commercial and general aviation persist as preferred targets due to the disproportionate economic and psychological impact of such attacks. Meanwhile, foreign terrorists and HVEs continue to target U.S. military personnel both on and off base, as exemplified by the December 2019 shooting at Naval Air Station Pensacola.

Transnational Criminal Organizations

Transnational Criminal Organizations undermine the security of the United States, and that of our allies and partners, through increasingly violent and destabilizing activities that threaten the rule of law and our shared democratic institu-

tions. These organizations have increased their collaboration with criminal groups beyond North America, which has increased their resilience. In our interconnected Western Hemisphere and globally, we must minimize the negative effect of organized criminal activity by aligning strategies, policies, plans, and authorities with the associated personnel and resources—across the United States Government and with allies and partners—to significantly diminish this proximate threat. All of this requires a coordinated whole-of-government effort to understand and manage these networks, as well as shared domain awareness across our government, allies, and partners. This national security imperative is integral to contesting peer competitors.

DEFENDING THE HOMELAND

USNORTHCOM's defense of the Homeland provides the foundation for the full spectrum of the Department of Defense's worldwide missions and supports the missions of every other combatant command. The ability to deploy forces overseas, support allies, deliver humanitarian assistance, and provide presence and reassurance around the globe relies on our ability to safeguard our citizens, as well as national critical infrastructure, transportation nodes, and leadership. As competitors field highly advanced and agile long-range weapons systems and seek to act on growing territorial ambitions, we are adapting our thinking, evolving our own capabilities, and enhancing our operations and exercises to accurately reflect a changing world while remaining a relevant force.

The United States has long relied on our nuclear arsenal to serve as the strategic deterrent against an attack on our Homeland. In today's threat environment, strategic deterrence remains foundational to our national defense. A safe, secure, and effective nuclear force remains the most credible combination of capabilities to deter strategic attack and execute our national strategy. The U.S. strategic deterrent has helped to maintain a careful balance between nuclear powers and remains the bedrock of our national defense, as the longstanding doctrine of deterrence by punishment makes clear to potential adversaries that a large-scale attack on the United States or our allies would result in an overwhelming and devastating response.

However, over the last decade, our competitors have adapted new techniques and fielded advanced weapons systems with the potential to threaten the Homeland below the nuclear threshold. Simply stated, the missiles and delivery platforms now in the hands of our competitors present a significant challenge to our legacy warning and assessment systems and defensive capabilities. Advanced systems posing threats to the Homeland have already been fielded in large numbers, and our defensive capabilities have not kept pace with the threat. The notion that the Homeland is not a sanctuary has been true for some time, and that will remain the case for the foreseeable future. Therefore, we must ensure effective nuclear and conventional deterrents are in place to defend the Homeland and ensure our ability to project power where and when it is needed.

Highly advanced cruise missiles, hypersonic missiles, and stealthy delivery platforms provide our competitors with the ability to hold targets in the Homeland at risk with conventional weapons. That fact has led us to emphasize improved all-domain awareness and the development of a layered sensing grid to provide warfighters and decision makers at the strategic, operational, and tactical levels with increased awareness and decision space.

The reality of a vulnerable Homeland and the risks associated with rising global competition are driving our commands to collaborate with interagency and industry partners to find and deliver smarter, more affordable technology. To outpace our competitors, we cannot be satisfied with incremental steps; instead, we must continue to increase the pace and tempo of our technological advancements. This work is essential, and we are proud of our close collaboration with a host of interagency and industry partners and international allies as we work together to outthink our competition, outpace threats, and defend what we hold most dear. That global focus and cooperation is also reflected in our growing wargaming capacity, including major Homeland defense exercises such as VIGILANT SHIELD and our participation in the Large Scale Global Exercise series.

THE PATH TO DECISION SUPERIORITY

I believe our future success in USNORTHCOM, our fellow U.S. combatant commands, and NORAD requires all-domain awareness, information dominance, and decision superiority. Our competitors have invested heavily in weapons systems that can be launched against distant targets with little to no warning, as well as stealthy delivery platforms specifically designed to evade detection by existing sensors. As a result, the successful execution of USNORTHCOM and NORAD missions in the

digital age relies on significantly improving global all-domain awareness through the development of a fused ecosystem of networked sensors extending from space to the seafloor.

This network will pull data from an array of repurposed systems, legacy sensors enhanced through low-cost software modifications, and a limited number of new sensors to provide robust indications and warning and persistent tracking of the full spectrum of potential threats to the Homeland from the seafloor to on orbit. Integrating and sharing data from this global sensor network into common platforms will allow leaders to observe potential adversaries' actions earlier in the decision cycle, providing more time and decision space at all levels.

That decision space is where the true value of improved domain awareness resides. Harnessing the capability of distributed multi-domain sensors, machine learning, and artificial intelligence will provide military leaders, the intelligence community, and senior civilian officials with the information necessary to anticipate, rather than react to, competitors' actions.

All-domain awareness is the first critical step on the path to decision superiority, and USNORTHCOM and NORAD require and have prioritized capabilities that improve our domain awareness and global integration with our fellow warfighters. Sensors and systems such as Over the Horizon Radars, polar satellite communications, Integrated Underwater Sensor Systems, and space-based missile warning and tracking sensors are essential to our missions. While the benefits to continental defense are clear, these capabilities will also help every U.S. combatant commander around the world while enhancing USNORTHCOM and NORAD's collective ability to defend the United States and Canada.

In September 2020, just after I assumed command of USNORTHCOM and NORAD, the commands partnered with the United States Air Force and United States Space Command in the second onramp demonstration of the Air Force's Advanced Battle Management System (ABMS). This large-scale joint force demonstration established a network with embedded machine learning and artificial intelligence to rapidly detect, track, and positively identify a simulated cruise missile threat, while providing a common operating picture and all-domain awareness for commanders at multiple levels.

The ABMS onramp demonstration provided a brief but exciting glimpse into the future of USNORTHCOM and NORAD. By creating potential pathways for accessing and distributing data in ways that allow leaders to think, plan, and act globally rather than relying on outdated regional approaches, we are significantly amplifying the capability of the joint force. Through these and other efforts, USNORTHCOM and NORAD are actively working to deliver information dominance by fusing new technologies to increase decision space for commanders and senior civilian decision makers. Ultimately, our objective is to enable leaders and commanders all over the world to quickly assess any situation and take the steps necessary to stay well ahead of an adversary's next moves in order to deter and deny in competition, deescalate in crisis, and defeat in conflict.

The prototype Pathfinder data analytics project provides another example of how USNORTHCOM and NORAD are working to leverage existing but stovepiped data streams to the benefit of both operational and strategic decision makers. In our ongoing prototype efforts, Pathfinder gathers data from multiple distinct military and civilian air domain sensors and, through automation and machine learning models, produces a fused common operating picture to improve the reliability of the data and increase the decision space that will someday soon be available in real time to our assessors and watch-standers. This low-cost, rapidly developed system will have long-term benefits for our domain awareness and has already shown some of the advantages that information dominance will provide to warfighters around the world.

Information is power, but only if it is accessible, sharable, and actionable. Unlocking the enormous potential of the data currently being collected by a global layered sensor grid will allow us to gain a decisive advantage over competitors and potential adversaries. Currently, vast quantities of data are trapped by incompatible systems and antiquated organizational structures. Breaking down these stovepipes is achievable, but doing so will require innovation and coordination across various agencies, to include technology that allows for timely exploitation of the massive volume of data collected by our sensor networks. More importantly, it will also depend on breaking away from a culture that favors compartmenting and isolating information, in order to fully realize the full potential of our capabilities—including those that reside with our allies and partners. As the defense and intelligence communities connect systems and sensors, consideration of national electromagnetic spectrum management policies is needed to ensure that necessary connections and bandwidth are accessible.

As our competitors rapidly develop and deploy advanced capabilities with clear intent to overcome the U.S. technological advantage, the Department of Defense and the U.S. Government as a whole must also modernize our requirements and acquisition processes to stay ahead. Given the current pace of technological advancement, the limitations of the 2-year budgeting process and protracted acquisition timeframe simply do not allow us to take full advantage of the forward-thinking solutions our industry partners can offer. To succeed in this era of Great Power Competition, it is essential to rapidly deliver capabilities to the warfighter by streamlining the processes for prototyping, testing, and moving promising technologies into production.

The success of USNORTHCOM and NORAD's Pathfinder program, along with much of the work done by DOD's Defense Innovation Unit, show what is possible when we provide innovators and technical experts the resources and flexibility to tackle even the most daunting challenges. The same approach should also be applied to software development and acquisition. Success in competition and in conflict will increasingly depend on the ability to field software-based capabilities faster than our adversaries. For that reason, I am encouraged by the new model championed by the Office of the Under Secretary of Defense for Acquisition and Sustainment that will enable the Department of Defense to acquire software through modern development practices and deliver needed capability at the speed of relevance.

Armed with timely and accurate information, equipped with modern sensors and software, and backed by a flexible and responsive conventional deterrent that provides defeat mechanisms below the nuclear threshold, commanders will achieve decision superiority with the options and time necessary to allocate resources wherever needed to deny or deter aggression in competition, de-escalate potential crises, and defeat adversaries should conflict arise.

MISSILE DEFENSE

Ballistic Missile Defense

The need for a robust and modern ballistic missile defense system has been strongly reinforced over the past year. Despite United States efforts in 2020 to reach an agreement with Kim Jong-un, North Korea continued its development of ICBMs capable of striking targets in the United States. As North Korea continues its pursuit of advanced long-range strategic weapons—including the new systems displayed during their 10 October 2020 parade—USNORTHCOM remains committed to maximizing the capability and capacity of our ballistic missile defense systems.

USNORTHCOM is focused on developing and fielding advanced sensors capable of tracking potential missile threats and providing improved discrimination capability to our warfighters and assessors. Simultaneously, USNORTHCOM is collaborating with our partners in the Missile Defense Agency (MDA) to ensure that the Next Generation Interceptor (NGI) is fielded and operational as soon as possible. Of note, USNORTHCOM worked hand-in-hand with MDA to ensure all of our operational requirements are addressed in the NGI acquisition process. When fielded, NGI will add 20 interceptors to the current inventory, and will provide greater reliability and capability.

As competitor missile technology advances, USNORTHCOM is also working with MDA toward a layered missile defense capability that will allow for a more flexible and responsive defense of the Homeland against both ballistic missile and cruise missile threats. The successful engagement of an ICBM-class target by an SM3–IIA interceptor on 16 November 2020 was an historic achievement and a critical step toward establishing this layered capability. Defending the United States Homeland against the ballistic missile threat remains a complex and technically challenging endeavor, and I am grateful to the Committee for your continued support as we take the steps necessary to ensure the success of this critical mission.

Cruise Missile Defense

NORAD is devoting significant attention and resources toward mitigating the current and emerging threat presented by advanced, long-range cruise missiles. These sophisticated weapons are difficult to detect and can be launched from significant distances against targets in the United States and Canada from launch sites on Russian soil and by long-range bombers, attack submarines, and surface vessels. Whether subsonic or hypersonic, these missiles can range targets in the Homeland and present a very real challenge for our defensive capabilities. Russia has already amassed an inventory of both nuclear and conventional variants, while China is expected to develop similar capabilities in the next decade.

The proliferation of these systems creates all the more incentive for focused investments in improved sensor networks, domain awareness, and information domi-

nance capabilities. Those investments, coupled with the development of layered denial, deterrence, and defeat mechanisms capable of addressing current and emerging threats, are fundamental to the defense of our Homeland.

THE ARCTIC

The Arctic provides an avenue of approach to North America as well as a representation of the changing physical and geostrategic environment that is actively shaping our future plans and requirements. The escalation of Russian activity and Chinese ambitions in the region demonstrates the strategic importance of the Arctic. Competition will only increase as sea ice diminishes and competition for resources expands. Now and into the future, meeting the full scope of our mission requirements will require USNORTHCOM, our Service and fellow combatant command partners, and NORAD to devote attention, resources, and capabilities to the Arctic.

Improving our domain awareness, communications systems, and our ability to conduct and sustain multi-domain operations in the high north are all important priorities for both USNORTHCOM and NORAD. We are fortunate to be able to draw on the experience and expertise of the Arctic warriors found in the Canadian element of NORAD, as well as the soldiers and airmen of Alaskan Command and the Alaska National Guard. Multi-command Arctic exercises like ARCTIC EDGE, ICEX, and NORTHERN EDGE provide valuable experience and lessons learned for conducting multi-domain operations in the high north, while the Joint Pacific Alaska Range Complex (JPARC) offers expansive and demanding training opportunities for the Total Force.

USNORTHCOM and NORAD are expanding our knowledge base and ensuring that warfighters and partners are developing the skills and experience needed to overcome the significant challenges presented by the extreme climate and physical environment of the high north. We are also moving forward with our Canadian partners to fulfill mutual objectives to modernize NORAD by leveraging industry advances in infrastructure and expeditionary capabilities that will strengthen our ability to sustain operations in and through the Arctic.

Every successful military endeavor is dependent on reliable communications. USNORTHCOM and NORAD are working closely with United States Space Force, each of the other military Services, United States Space Command, and industry partners to establish space-based communications networks that will provide greater reach, more flexibility, and the ability to communicate with every element of the joint force operating in the high north.

I want to thank the Committee for your support for improving Arctic communications though a commercial constellation of proliferated low earth orbit communication satellites. This effort is well underway and will dramatically improve communications for military users in the Arctic, as well as for civilians in remote, high latitude communities. The capability will pay lasting dividends for all users and will enhance our defense of the Homeland, as well as our ability to provide defense support of civil authorities.

PARTNERSHIPS

Our successes as a nation have long been due in large part to close collaboration with partners and allies. With history as our guide, USNORTHCOM and NORAD are building and fostering the critical interagency, interdepartmental, and international relationships that are so vital to any strategic endeavor. Just as we are knocking down stovepipes that impede the flow of critical data between organizations, we are also striving to expand our collaboration and communication with our partners.

Canada remains our essential ally in the defense of North America. For over 62 years, the extraordinary and irreplaceable relationship between the United States and Canada has been demonstrated through the constant vigilance of the world's only bi-national command, NORAD. That bond remains as vital as when the command was first established in 1958. Meeting NORAD's crucial missions to provide aerospace warning, aerospace control, and maritime warning in the United States and Canada has required the command to adapt and evolve to address new challenges and emerging technologies that threaten our Homelands. Canada remains a true and trusted partner in our common defense and continues to share the economic and manpower costs associated with sustaining and modernizing vital NORAD capabilities.

Over the past year, our competitors repeatedly tested NORAD, but we have stood firm in our resolve and capability to defend the United States and Canadian Homelands. The year 2020 saw Russian military aircraft entering the Canadian and Alaskan Air Defense Identification Zones (ADIZ) on multiple occasions to measure our

responses to increasingly complex operations. As Russia continues to modernize its bomber fleets and improve the proficiency of its long-range aviation units, NORAD must maintain the ability to detect and respond to all air domain competitors.

In addition to our aerospace control mission, NORAD provides warning of potential maritime threats to the United States and Canada. This critical mission requires uninterrupted contact with U.S. geographic combatant commands, the intelligence community, and NATO partners to detect and track maritime vessels of interest well before they cross into the NORAD area of operations.

The importance of this mission was illustrated in September 2020 when Russia conducted portions of its Exercise OCEAN SHIELD in the Bering Sea off the coast of Alaska. NORAD (and USNORTHCOM) monitored the exercise, noting that although the Russian vessels remained in international waters, they were in close proximity to United States civilian fishing boats operating in the United States Exclusive Economic Zone. That Russia would conduct a complex military exercise so close to our shore demonstrates the necessity for a robust and capable NORAD today and well into the future.

As further evidence of both the global nature of the threat and the implicit trust in our bi-national command, NORAD is developing the requirements for the defense of the United States and Canada against advanced cruise missiles. In this capacity, NORAD works closely with the U.S. Military Services, the Canadian Joint Operations Command, and a host of other dedicated DOD and Canadian Defence Ministry partners to share costs and ensure a clear, common understanding of the threat and what will be required to mitigate the risk to our Nations.

Mexico is a vital partner in our cooperative defense, and the USNORTHCOM relationship with our Mexican military partners remains robust. While the COVID pandemic has forced both countries to cancel a number of in-person engagements and planned training events, USNORTHCOM and our Mexican military counterparts have ensured we maintain routine, close contact through virtual engagements. From leaders at the tactical level, to the Mexican military liaison officers assigned to our headquarters, and up to the Secretaries of National Defense (SEDENA) and the Navy (SEMAR), USNORTHCOM is proud of the military-to-military cooperation and the personal relationships fostered over the years with our Mexican counterparts. Through well-established forums such as the Bilateral Military Cooperation Roundtable, USNORTHCOM and our Mexican partners have remained in close contact throughout the pandemic, and we continue to make substantive progress toward mutual security goals. The Mexican military faces significant challenges from violent drug cartels and from the effects of the pandemic, but USNORTHCOM and our Service components will continue to stand by our partners and work to enhance our domain awareness in the common defense of North America.

The Bahamas is an important partner that has faced extraordinary challenges over the last 18 months. The Bahamas continues to address the severe economic impacts resulting from Hurricane Dorian in 2019 and markedly decreased tourism resulting from the coronavirus pandemic. Even so, we continue to work closely with our Royal Bahamas Defence Force (RBDF) partners to improve regional maritime security in the southeast approaches to the United States. USNORTHCOM directly supports RBDF efforts by enhancing their domain awareness with maritime surveillance system radars currently being deployed across The Bahamas island chain. USNORTHCOM is firmly committed to our lasting collaboration with the RBDF and will continue to support our neighbors and valued partners.

USNORTHCOM has also worked with our partners in Mexico and The Bahamas to address our shared challenges in responding to the impacts of COVID–19. Since April, USNORTHCOM has been actively supporting response efforts to COVID–19, using Overseas Humanitarian Disaster Assistance and Civic Aid funds approved by Congress. To date, we have conducted 63 projects in support of the Mexican and Bahamian COVID–19 response, totaling $7.29 million. A portion of that amount consists of reprogrammed CARES Act funds which Congress approved for that purpose. USNORTHCOM and United States Embassy support to Mexico and The Bahamas solidifies our position as the partner of choice for these nations and is critical to countering nation states, especially China, which continues its attempts to make inroads in both countries through offers for COVID–19 medical support, large-scale economic investments, information campaigns, and material support for infrastructure projects. Our relationships with Mexico and The Bahamas enhance regional security and stability and directly strengthen our ability to defend the Homeland through continued close cooperation with these key partner nations.

DEFENSE SUPPORT OF CIVIL AUTHORITIES

USNORTHCOM provided defense support of civil authorities at an unprecedented pace in 2020, and many of those support missions continue today. As the Commander of USNORTHCOM, I serve as the DOD synchronizer for the federal pandemic response led by the FEMA and the Department of Health and Human Services. In that role, we remain tightly integrated with the interagency effort to assist health care providers and our fellow citizens around the country. As we have supported our federal interagency partners throughout this difficult national effort, members at every level of our command have demonstrated extraordinary commitment to meeting every mission requirement while diligently safeguarding the health of our own civilian and military workforce.

The 2020 hurricane season saw 11 hurricanes make landfall in the United States, impacting countless Americans, while catastrophic wildfires ravaged millions of acres and displaced entire communities in multiple western states. The Commander of USNORTHCOM was designated as the DOD synchronizer for the federal responses to each of those disasters, and the Command stood ready to support FEMA and the National Interagency Fire Center with title 10 assets.

CONCLUSION

As USNORTHCOM and NORAD look to a future marked by rapid shifts in the geopolitical environment and technological advancement, we are guided by the lessons of the past. Key among those is that we cannot overcome challenges in isolation. By viewing changing conditions and competitor actions from a global perspective, our problems become more solvable and the solutions more affordable. USNORTHCOM and NORAD will continue to build our partnerships, collaborate with fellow warfighters, and work toward overcoming shared problems rather than continuing to focus on point solutions to isolated threats.

To that end, I look forward to working with the Committee and with all of our innovative industry and interagency partners as we move quickly to develop and field the systems required to defend our Nations now and well into the future. Together, I believe we can eliminate outdated barriers that only serve to stifle information sharing, and simultaneously foster a mindset that favors creative, forward-looking approaches over unproductive reliance on legacy systems.

Finally, and perhaps most importantly, we will continue to prioritize our most vital asset: our people. With that in mind, I would like to take this opportunity to publicly recognize the select group of USNORTHCOM and NORAD personnel responsible for standing the operational watch 24 hours a day, every day. Their mission is crucial to our defense, and these military and civilian watch-standers have spent much of the last year under strict but necessary isolation protocols to mitigate the risk of a COVID outbreak. They and their families have endured long periods of separation during an already difficult time, and they have done so without any expectation of public recognition. I am honored to lead men and women of such selflessness and professionalism, and our citizens should rest assured these extraordinary defenders have the watch.

Chairman REED. Well, thank you very much, General, and before we begin I want to remind my colleagues of the procedures.

Since it is impossible to know exactly when our colleagues who will be joining via the computer arrive, we will not be following our standard early bird timing rule. Instead, we handle the order of questions by seniority, alternating sides, until we have gone through everyone. Once we reach the end, if there is anyone we missed we will start back at the top of the list and continue until everyone has had their turn.

We will do the standard five-minute rounds. I ask my colleagues on the computers, and at their desk, to please keep an eye on the clock, which you should see on your screens or right before you.

Finally, to allow for everyone to be heard, whether in the room or on the computer, I ask all colleagues to please mute your microphone when not speaking. Thank you.

Admiral Faller, again, thank you for your distinguished service over many years. The Northern Triangle—Guatemala, Honduras, and El Salvador—is a particular unstable region, and many of

those who are seeking relief and moving towards our border are coming from this area. Security and human rights have deteriorated there significantly, increased violence by criminal organizations and narcotics distributors. We can continue to provide security assistance to these countries, yet corruption remains rampant and international efforts to build capabilities are not effective.

In Honduras, in particular, the corruption appears to have reached the highest level of the government. The criminal trial in the Southern District of New York of the Honduran President's brother unearthed evidence of the Honduran President and other senior officials taking millions of dollars in bribes from drug traffickers. Honduran security forces are also documented as having engaged in gross human rights violations for years.

Given all of this, Admiral, do we need to reconsider whether our approach to security assistance in the Northern Triangle countries is achieving our national objectives?

Admiral FALLER. The perfect storm of conditions that you outlined, Senator, of violence, the impact of the pandemic, the impact of the hurricanes has created untenable security for the citizens, and that is why we are seeing this flood of migrants to our borders.

Our focus at SOUTHCOM should and remains in support of U.S. Government hold efforts. Our diplomats in our embassies, and that security cooperation is a long-term investment on the professional militaries. So institutional capacity-building, we have a long-standing human rights training program that has been effective in developing forces that know how to use force in a professional manager.

Our Women, Peace and Security Program (WPS) has proven to be a game-changer. Those nations want to model and emulate our success. Our NCO development, our IMET, there is an appropriate place, moving forward, Senator, for our long-term engagement with our partners. They model their professionalism after us, and I can trust elements of the Honduran and Guatemalan forces. We vet them. We work with our interagency.

Chairman REED. It seems, in those areas, and other areas around the world, we have invested a great deal in the military, and we have developed effective military forces, but so much of this is a law enforcement issue and a judicial issue. Again, this is outside your lane, but a whole-of-government approach would seem to need more of an investment in training police, in providing judicial remedies that are actual, not fictitious. Is that your view also? Do we need more help through our other agencies?

Admiral FALLER. One of the successes I have seen is watching our other agencies actually engage in judicial training programs and moving that forward. One of our own programs is the Defense Legal Security Cooperation Program, the Defense Institute of International Legal Studies (DIILS) program, out of Newport, Rhode Island, where we work with partners on how they can develop and effective judicial system.

I think these programs are effective, Senator. It takes time to see the results of that effectiveness. But in the past year, when there was a lot of opportunity for our partner militaries to commit human rights violations because they were deeply involved in helping with internal security, they stayed on the field in a professional

manner, and they did model their professional behavior after the training that we have been able to provide.

Chairman REED. Thank you. General VanHerck, I am sorry, I have but a few minutes, but could you give us quickly sort of your takeaways from the COVID virus situation, what fundamental changes we might have to make?

General VANHERCK. Chairman, absolutely. COVID has given us great opportunity to reflect and learn on our planning, as we were ready. What we have done is continued to adapt. What we have found is that the support functions, the emergency support function process through the interagency is crucial, working with local and state authorities to ensure that we are synced up to provide that response. We worked closely with Department of Homeland Security (DHS). We worked closely with Health and Human Services (HHS), public health services, to ensure we are ready.

In addition to that, we are going back and changing and updating our global pandemic and infectious disease plan to ensure that we are ready and have adapted the lessons learned, Chairman.

Chairman REED. Well, thank you very much, General. Thank you both for your service.

Senator Inhofe, please.

Senator INHOFE. Thank you, Mr. Chairman. You know, there is a crisis on the border. I think we all know that. The number of migrants trying to cross more than doubled in January 2021 from the year prior to that, and the number of migrant children in custody has tripled.

Now we have come a full circle. We do not like to talk about it. We had weak enforcement of our immigration laws under President Obama, and strong enforcement under President Trump, and now the expectation of a weak enforcement under President Biden is driving a surge of illegal migrants. That is where I have this picture here. They are all coming across the border, you know, they are coming fast, and they are all wearing Biden t-shirts.

So we have got a problem down there, and I just have to ask the question. Admiral Faller, do you agree that a strong enforcement of the immigration laws serves as a deterrent against illegal migration?

Admiral FALLER. Senator, all nations deserve secure borders, and our focus has been on the heinous insecurity in Central America, caused by transnational criminal organizations that have no respect for the rule of law, rain violence on their population. They market in drugs and people and guns and illegal mining, and one of the prime sources that underwrites their efforts is Chinese money-laundering.

So our focus has been on the source, working with——

Senator INHOFE. Okay, but just a specific question. Do you agree that strong enforcement of immigration laws serves as a deterrent against illegal migration?

Admiral FALLER. The number one deterrent that I hear, when I speak to all our partner nations, is the United States judicial system. I agree, Senator.

Senator INHOFE. Okay, and do you agree with that also, General? Simple question.

General VANHERCK. Chairman, as previously stated, border security is national security. I agree that we must consider our laws that are in place. What we are doing right now is we are supporting the lead Federal agency from NORTHCOM, which is Homeland Security, that allows them to enforce the laws that are on the book. We are providing support in the form of aviation support, ground support through detection and monitoring as well.

Senator INHOFE. Okay. But you do agree then——

General VANHERCK. I do——

Senator INHOFE.—strong enforcement of those laws. You can have all the laws on the books you want but if you do not enforce the laws, it is not going to work. Do you agree with that?

General VANHERCK. I do agree with that.

Senator INHOFE. Very good, and Admiral Faller, I am a little concerned about something in terms of resources down there. In your opening statement, or it was in the written statement, I guess it was, you said that you only receive less than 1 percent of all Department of Defense (DOD) intelligence, surveillance, and reconnaissance (ISR), only 1 percent of all DOD ISR. Is that right?

Admiral FALLER. Senator, intelligence drives everything. That allows us to have the domain awareness that General VanHerck spoke about, so we can then inform our other interagency partners what the threats are up to, and we have less than 1 percent of the ISR.

Senator INHOFE. You know, I read that some time ago, and we had a visit. I tried to figure out how that could be. Maybe I am missing something here. Less than 1 percent of ISR comes into that area, and I do not understand. That is not adequate, right?

Admiral FALLER. Senator, we are short in ISR, in intelligence assets and security cooperation, and we have, in general, our posture is thin. We have got to be on the field to compete, Senator.

Senator INHOFE. Mm-hmm. Yeah, I agree with that.

You know, I know the border. Back in the days when I was enjoying life I can remember I was a builder and developer down there. People on the East Coast do not understand this, but there is an island down there called South Padre Island. It is actually—now do not leave because you need to hear this—the island down there is 140 miles long and one block wide. I was a builder and developer down there. I know the border, and they talk about the tough border security and what is necessary.

So I just want you to know I am familiar with that down there, and I think it is doing a disservice not to talk about it. We need to enforce the border, and I do want to have this picture made a part of the record at this point.

[The information referred to follows:]



Senator INHOFE. With that I will yield the floor.

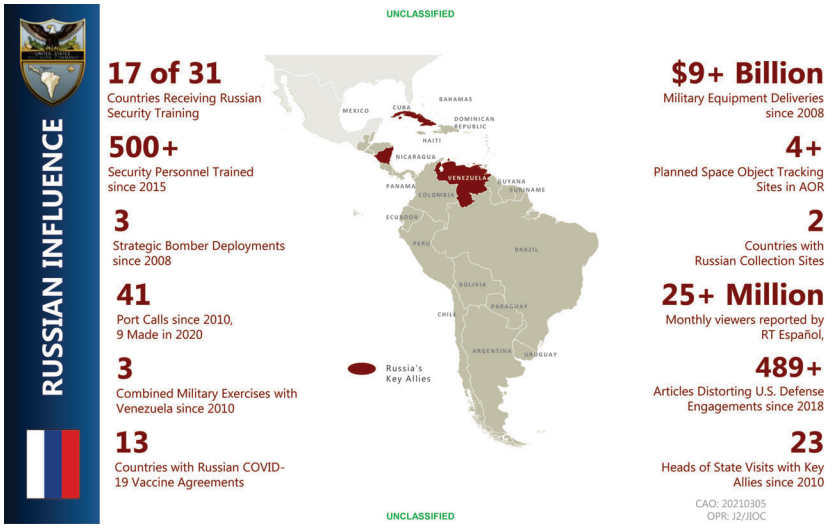
Chairman REED. Senator Shaheen, please.

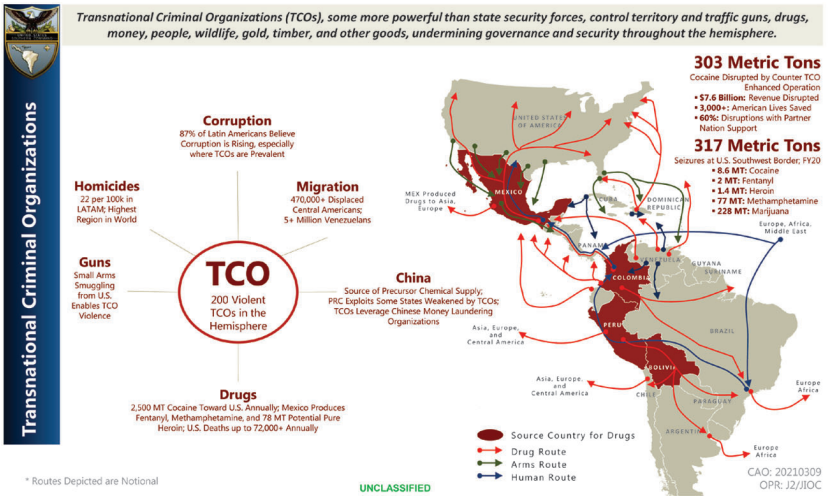
Senator SHAHEEN. Thank you, Mr. Chairman, and thank you to both of you for your service and for being here this morning.

Admiral Faller, I want to start with you because I find the maps that you have given us and the statistics on these alarming, to say the least. On the map that shows Chinese influence, if you were going to give us a map that said "United States influence," how many, for example, countries could we site that are hosting American infrastructure projects, and how many countries are enjoying training and military support or other economic support from the United States, and how many heads of state meetings could we cite since 2015?

[The information referred to follows:]







Admiral FALLER. Senator, our influence is eroding, and that margin is shrinking, and we would be best able to show that with arrows that have downward trends. It is important that we remain engaged in this hemisphere. It is our neighborhood that proximity matters, and as you pointed out, the Chinese see that.

We hosted a conference last week at SOUTHCOM with our allies—United Kingdom (U.K.), Canada, France, and the Netherlands—who have significant interest in ensuring a stable, secure neighborhood. One of the foreign participants said that the region is in a lifeboat and it is sinking in the violence and it is sinking in Chinese influence.

What I hear from my partners is, "We hear you, Admiral Faller. We know that the United States military is the best. We want to

partner with you, but when you are drowning and you need a life ring, you are going to take the life ring from whoever throws it."

Senator SHAHEEN. That is disappointing. I appreciate what you are saying and that was my reason for the question, because it is very clear that we are not keeping up in the way that we should in terms of influence and support in Latin America.

Can I ask, when you talk about—Senator Inhofe raised the 1 percent of resources that you have for SOUTHCOM, and one of the operations that you are responsible for is counternarcotics operations. In New Hampshire we have been dramatically impacted by the opioid epidemic, and obviously drugs coming in across our southern border come up Interstate 95 all the way to New Hampshire and northern New England. If you were going to define what percentage of your operations are counternarcotics, can you describe that, and if you had more resources would you be able to address more of what is happening with the transnational criminal organizations?

Admiral FALLER. Senator, I would like to start by thanking the New Hampshire National Guard, our state partner for El Salvador, a critical partner, and National Guard across our region. That is our number one force provider. They have stayed engaged despite the pandemic in a way that builds trust and partners, and helps train them. What our real goal is here is to train our partner nations to take care of their own security problems.

We cannot interdict our way out of the narcotics problem. We have got to get our partners in the game, and this past year, despite a pandemic, they actually increased their performance, their involvement up to 60 percent of all our disruptions.

But that is still not enough. We have got to focus on the source and the destination. One of the key areas that needs more emphasis—and we have really worked hard this past year with our partners—is in countering the money supply. I talked about the importance of that, really getting to break the back of these organizations. I would that, in that regard, the Drug Enforcement Agency (DEA) has cited Chinese money-laundering as the number one underwriter of transnational criminal organizations.

So it has got to be a whole-of-government effort, and we have got to work to build our partners' capacity.

Senator SHAHEEN. Well, thank you, and thank you for your nice comments about the New Hampshire National Guard. I agree, they have had an excellent partnership with El Salvador.

General VanHerck, I only have a little bit of time left, but I wanted to ask you about the impact that you are seeing from climate change on the Arctic, which we know is melting a lot of the ice there and opening up routes through the Arctic. What potential impact is that having on our national security, and what do we need to do to respond?

General VANHERCK. Senator, environmental change is having a significant impact, as it creates opportunities and it also creates vulnerabilities. The question is, are we postured to seize on opportunities and to defend against potential competition and vulnerabilities. This creates access, access to resources. Twenty-five percent of Russia's gross domestic product (GDP) is dependent upon resources in the Arctic, and both Russia and China are trying

to establish new norms and rules and behavior for international law.

I understand the time is out here. I would love to talk more to you about this subject.

Senator SHAHEEN. I would love to hear that, and I would bet if we joined the Law of the Sea Treaty we might be able to better address some of the influences that China and Russia are doing. You do not need to respond to that.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Shaheen. Senator Wicker, please.

Senator WICKER. Thank you, Mr. Chairman. Admiral Faller, could you supplement, on behalf of Senator Shaheen and me, the three charts that she mentioned? There is a Chinese influence, Russian influence, and Iranian influence. Can you get back on the record and just do one that says "U.S. influence"?

Admiral FALLER. The U.S. remains a partner——

Senator WICKER. No. Will you supplement, on the record, a chart? I am asking you to do that.

Admiral FALLER. Yes, Senator.

[The information referred to follows:]



Senator WICKER. Okay. Very good. Let me ask you then, Admiral, about the involvement of the Coast Guard in what you do. I am also on the Commerce Committee where we have oversight there, and I have grown concerned that the Coast Guard is not sufficiently resourced to conducts its own missions, much less support what seems to be a growing demand for having Coast Guard units supporting DOD missions to SOUTHCOM and other AORs.

Do I have correct information there? How much do you rely on the Coast Guard not just to counter drug and illegal fishing missions but also for theater engagement with us and our allies?

Admiral FALLER. The Coast Guard is a tremendous asset for us, and they are on the field in a meaningful way. They are a top priority for all our partners, building capacity and countering the threats. Despite the pandemic, the national security cutters, the

fast response cutters, these are well-manned, well-trained ships, making a difference, day in, day out, including their aircraft. We could not do our mission without the United States Coast Guard. They are a principal source to counter threats in this hemisphere.

Senator WICKER. Do we have enough ships to meet your theater requirements?

Admiral FALLER. We do not. We do not have sufficient Coast Guards or Navy ships to meet the requirements. We need additional assets and planes.

Senator WICKER. Okay. General VanHerck, let's transition then to NORTHCOM, and once again I have the same interest as Senator Shaheen about the Arctic. I was pleased that the previous administration released an updated strategy for the Arctic. I am afraid that we lag behind our peers, particularly Russia. Is that correct?

This year the Coast Guard begins construction of the first of a new class of icebreakers, the Polar Security Cutter. Six total ships have been authorized, a vast improvement over the two aging ships we have, but a far cry from Russia's fleet of 40.

Can you explain why icebreaking capability is so critical, and do you believe it is important to advocate for a larger fleet of Coast Guard cutters and icebreakers?

General VANHERCK. Senator, yes, thank you, and I agree with your assessment. We are lagging behind. Why it is so important is you have to be on the field to play. It is about persistence. Not only do we need to have access through persistence to break ice, to ensure that we can have Coast Guard cutters or potentially Navy destroyers or cruisers in the area, we have to have communications as well for persistence.

I am thankful to the Committee for $46 million that got us started with polar communications. North of 65 latitude it is really tough to communicate. That will get us an initial start. But I also have a require for fuel north of Dutch Harbor, Alaska, which will also contribute to the persistence of competing in the Arctic.

This is about persistence. We are in competition, as I said in my opening statement, and to be competitive with Russia and China, specifically in the Arctic, you have to be part of the on-the-field, if you will. So it is crucial that we do that and continue producing capabilities that will allow us to be in the Arctic.

Senator WICKER. So fuel capabilities and communications capabilities are not where they ought to be. Last year the Navy was investigating the possibility of establishing a new base in the Arctic. Have you been involved in any discussions with the Navy regarding establishing a permanent base in the Arctic, and how could a Navy base improve your ability to execute U.S. Arctic strategy?

General VANHERCK. Senator, to answer your question directly I have not been involved in any discussions with the Navy. I am aware of the study that was done for a potential port, specifically with regards to Nome, Alaska, which will get after the requirement for fuel north of Dutch Harbor. That report was completed by the Army Corps of Engineers and submitted for congressional awareness.

Senator WICKER. Would this be helpful?

General VANHERCK. Yes.

Senator WICKER. Do you have an opinion?

General VANHERCK. It would be helpful to meet my requirement to have fuel for that persistence to compete with the Nations that are interested in the Arctic.

Senator WICKER. Thank you.

Chairman REED. Thank you, Senator Wicker. Now via Webex, Senator Gillibrand.

Senator GILLIBRAND. Thank you, Mr. Chairman. Admiral Faller, as you noted in your written testimony, Russia has eagerly flooded online communities in Latin America with disinformation intended to undermine faith in democratic institutions and in the United States. Separately, China is investing heavily in information technology that can be easily manipulated by the Chinese Government through discretion for espionage or cyber intrusions.

Do you feel that SOUTHCOM is adequately equipped to do its part to handle the separate but overlapping risks posed by these efforts?

Admiral FALLER. Recently, in a visit to one of our partner countries, I had the leader of that country lean over and say, "How do I get rid of the Chinese information technology that was sold to get after the violence in the city, but then oddly appears outside the United States Embassy and other places, which are in the most secure parts of the city?" These efforts have got to require a whole-of-government, whole-of-world approach where we offer safe technology and safe, affordable solutions, moving forward.

For our part, we have really participated with U.S. Special Operations Command in standing up appropriate information capabilities to counter in the information space, and I think that effort is nascent. It is having some effect, but is very small scale, given the volume. In Russia alone, they had over 17 million disinformation hits last year in social media. Outside Russian language, their Spanish language social media is their biggest effort, and they increased it three-fold last year, particularly trying to discredit everything the United States did to help our partners recover from the pandemic.

Senator GILLIBRAND. Admiral, as you pointed out earlier, while China's economic coercion practices are only one element of its strategy to exert influence in the region, it is certainly an important one. Is there a way for SOUTHCOM and other U.S. entities to facilitate opportunities for economic engagement, where we can highlight the benefits of working with the United States as opposed to China?

Admiral FALLER. There are some great efforts that Congress has championed, the Developmental Finance Corps and others, in support of that. I think it is incumbent on all professionals like myself to learn as much about the economic elements as power as possible.

But then to focus on what we do best, which is working with our partner militaries, supplying them professional training, professional education, and exercise programs. They want to partner with us. That is their North Star, and we have got to have the right security conditions so that we can have sustainable economics. Businesses are fearful when they cannot invest in a safe environment.

Senator GILLIBRAND. Understood. General VanHerck, as the Admiral noted, it is clear that one of our biggest challenges in the

Western Hemisphere will be China's technological engagement that threatens our security. Are we beginning to see any signs that China's growing technological presence in the SOUTHCOM region is forcing NORTHCOM to rethink its strategy of how it defends its domain, given the close proximity between the two regions?

General VANHERCK. Senator, we look closely at China's influence. They are absolutely in the NORTHCOM AOR, attempting to influence in the Bahamas, working through 5G, for example, the same thing in Mexico. We continue to defend all domains. NORTHCOM defends our critical cyber infrastructure with allocated cyber protection teams, and we work closely with Cyber Command (CYBERCOM) and National Security Agency (NSA) as well. We are the disc synchronizer for cyber if there is a need to provide defense support of civil authorities. We continually work with civil authorities as well to assess the needs for homeland security, as well as other agencies across the government.

Senator GILLIBRAND. Thank you. In your written statement you indicated Russia and China had developed hypersonic and nuclear warhead-tipped cruise missiles. North Korea is also advancing its intercontinental ballistic missile program. These weapons put our allies and our own national security at risk. The current missile defense is based at the Ground-Based Interceptor, or GBI, which was fielded 16 years ago.

Since that time we have improved the system and grown the size of the available arsenal. Last year, we appropriated money for the Next Generation Interceptor, the NGI system, to improve our defenses.

While I am clear-eyed about the threat posed by enemy states' missiles, it is currently a time of competing priorities, particularly in light of COVID. In your opinion, can we still rely on the GBI for the foreseeable future, and two, assuming we need to push back on the NGI system, how long can we rely on the current arsenal?

General VANHERCK. Senator, I am comfortable with my ability to defend the Homeland, including Hawaii, against a limited state actor such as Democratic People's Republic of Korea (DPRK), which the system is designed for, for the foreseeable future. The key thing is to maintain the timeline of no later than 2028 for NGI, to ensure that we maintain capacity and capability to defend against a ballistic missile threat.

Senator GILLIBRAND. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Gillibrand. Now via Webex, Senator Fischer, please.

Senator FISCHER. Thank you, Mr. Chairman. General VanHerck, I appreciated our discussion last week and I would like to revisit our conversation on the NGI. Senator Gillibrand was just touching on some points of that as well.

When you talk about the threat that we are facing and the advancing threat that we are seeing, do you believe that the additional capabilities that NGI will provide the warfighter over our current interceptor fleet are absolutely necessary?

General VANHERCK. Senator, I do. It gives us extra capacity to go against threats that are developed that could exceed our current GBI inventory. In addition to that, it will give us capability, because the threat continues to advance their capabilities, such as de-

coys and diversion with that capability. So the NGI is crucial to give us that capability. It also provides us a foundation for our deterrence. It provides deterrence by denial. The nuclear deterrent is the foundation, but the NGI and the GBI give us deterrence by denial, Senator.

Senator FISCHER. Thank you, sir. Also, you and I discussed the increasingly capable cruise missile arsenals that our adversaries possess and the very real threat they pose to the Homeland. In your opening statement you talk a lot about the concept of domain awareness. Can you talk about what that means for you, how it relates to the threats that are posed, say, by cruise missiles?

General VANHERCK. Senator, yes. Thank you for the opportunity. Cruise missiles challenge our legacy warning system significantly. They have generated very long-range capabilities. They can actually shoot cruise missiles—they, being Russia—today from over their homeland, which will challenge our legacy systems.

We do not want to be in a situation, my personal opinion, where end-game defeat is our only option. We need to get further left, and that starts with domain awareness, left of the archer, if you will, before they take off, whether that be in a submarine, whether that be in a sea vessel, or whether that be in a bomber, to have decision space for our senior leaders.

Decision space starts with that domain awareness. Once you take that domain awareness, whether that be from undersea, to space, to cyberspace, and everything in between, and you use machine learning and artificial intelligence capabilities, what I call information dominance, now we are able to get further left and give our decision-makers deterrence capabilities beyond the foundation, which is our nuclear deterrents, and an end-game kinetic attack, which would require a response, very escalatory in either one, Senator.

Senator FISCHER. You know, you are using all sorts of technologies now that you are applying on your demonstrations that NORTHCOM has conducted in this area. Do you have other examples you can share with us?

General VANHERCK. Absolutely, Senator. So we have a program called Pathfinder that we have moved out on over the last year, that takes information data. I am a believer that the future of competition, crisis, and conflict, he or she with the data and the information will win.

What we have taken is an example. So you will remember, in 2015, when the gyrocopter actually flew down from north here in the National Capital Region and landed on the Capitol lawn, that situation, none of the sensors in the area, whether they be the NORAD sensors that we have or other sensors alone detected that target. But when we took the Pathfinder capability and we analyzed the information, we took information that was left on the cutting room floor that was not previously analyzed, there that gyrocopter was.

That is what I am talking about, information today that exists in stovepipes in government agencies, even within the Department of Defense, that is not shared more broadly. We have to take advantage of data and information going forward, Senator.

Senator FISCHER. Thank you, General.

Admiral Faller, Nebraska's RC–135s are frequent guests in your part of the world, and we know that the Air Force is doing what it can, but there are shortfalls. Last year, you told the Committee you only have 20 percent of the ISR that you need, and the bulk of that amount comes from Customs and Border Protection assets.

As a commander, you said that only 8 percent of SOUTHCOM's overall ISR need is met by military assets. Is that still the case?

Admiral FALLER. Senator, compounding that 8 percent figure we received a 46 percent cut to our ISR-related budget this year, in year, so that will significant challenge our ability to understand the threats of all types in the hemisphere. Intelligence drives everything.

Senator FISCHER. So what gets left on the table as a result of your inability to get that ISR coverage?

Admiral FALLER. A significant amount of movement of transnational criminal organizations, our understanding of what our competitors are up to—Russia, China, Iran. A lot gets left on the table that is contributing to this violence, that is driving the instability here in the United States and in our partner nations.

Senator FISCHER. We see their presence growing in your combatant command area, so I understand the need for that. Thank you, Admiral. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Fischer. Senator Blumenthal, please.

Senator BLUMENTHAL. Thanks, Mr. Chairman. Thank you both for your service and for being here today. As you know, the COVID–19 pandemic has hit the Caribbean and South America very hard. I am concerned that we need to continue to stay vigilant against attempts by Russia, and most especially China, to exploit the suffering of our neighbors to the south to increase their influence in the region.

Admiral Faller, in your posture statement you stated that China and Russia are using the COVID–19 pandemic to gain greater influence in South America. Can you explain how that is occurring, and what would you recommend the United States do to maintain American influence in the region in the face of that public health threat during that time?

Admiral FALLER. The conditions that the pandemic has caused in Latin America and the Caribbean rival those of the Great Depression here in the United States. It will take years for the region to recover. The IMF has estimated it as the region with the longest recovery time.

We have seen, and there was a New York Times article today on this, China particularly move in with a heavy-handed mask and vaccine diplomacy, that they are using the vaccines to leverage deals for their IT, their 5G, and they are using it to try to drive a wedge between some nations like Taiwan and others in the region. This is indicative of Chinese global coercive, insidious behavior. We are seeing it play out. We need to stay on the field, with a whole-of-government effort, and once we have taken care of the United States, be first with a concerted plan to take care of our neighborhood with the vaccines here.

Senator BLUMENTHAL. I hear you saying that we need a much more aggressive and, frankly, humanitarian effort in this part of

the world, our neighboring region, in fact, part of the Western Hemisphere family, to take care of people in our own enlightened self-interest.

Admiral FALLER. Senator, to date I have been very proud of the U.S. Government effort in personal protective equipment (PPE) and other COVID-related supplies. We are not taking much credit for it, but by far and away the single donator in this hemisphere, and the Department of Defense using our humanitarian assistance authorities, we moved out with small projects at speed, over 400 projects, $54 million, and it made a real impact. But the next phase is going to be in vaccines and long-term recovery, and we have got to be as aggressive and forward-leaning in that phase, I would say particularly in this hemisphere, because the proximity here matters to the security of the United States.

Senator BLUMENTHAL. It is not only a public health crisis, it is really a very deep-seated economic crisis linked to the pandemic, I hear you saying.

Admiral FALLER. Senator, in October I traveled with my Civilian Deputy Commander, Ambassador Jean Manes, a wonderful diplomat, great civ-mil relationship, in our headquarters. We went on our first multiple-day trip. We traveled to Central America, Honduras, El Salvador, Guatemala, and Costa Rica. The hollow look in the eyes of our partners, they are struggling to fill their gas tanks and find food for their security forces, because of the stress the pandemic, and the violence, has placed. This creates real opportunities for our competitors who are more than willing to step into that violent sauce and take advantage of it for their own interests.

Senator BLUMENTHAL. It has ramifications in terms of generating flow of migrants, the drug trade, all kinds of other ramifications that are disruptive to our country, potentially.

Admiral FALLER. Yes, Senator.

Senator BLUMENTHAL. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Blumenthal. Senator Cotton, please.

Senator COTTON. Admiral Faller, I want to speak about the legal conditions on the ground in the Northern Triangle—Guatemala, Honduras, and El Salvador. Do the governments of those three countries systematically persecute their own citizens on the basis of race, ethnicity, sex, political views, religious beliefs, or other such categories?

Admiral FALLER. Senator, when I go I am lockstep with our embassies, and we have got great diplomats. We do not see a systematic exploitation. I work with the militaries, and the elements we work with are vetted and trusted, and I find they are doing the right thing, whether it is Honduras, Guatemala, or El Salvador.

Senator COTTON. Thank you. I think that is a very important point. The governments of Honduras and El Salvador and Guatemala do not persecute their own citizens systematically on the basis of race, sex, ethnicity, religion, or political views, which is the basis for asylum and refugee status under our laws. An economic migrant is not eligible for asylum. They are not eligible for refugee status. Asylum is designed for people, let's say, a Hong Konger whose student visa expires and does not want to return to Hong

Kong now that the Chinese Communist Party has cracked down on that country.

The reason we have a crisis at our border is because President Biden and his administration opened the border and ended the policies of the Trump administration that made it clear you could not make the very dangerous journey across Mexico, you could not pay smugglers and traffickers thousands of dollars to get to our southern border and then expect to be let in. If you let them in, more will come. That is why we have a crisis at the border.

General VanHerck, we have been supporting the Department of Homeland Security at the border for some time now with DOD personnel. The most major adjustment of numbers was in 2018. Is that right?

General VANHERCK. That is correct. In 2018 and this year we are up to nearly 4,000, total numbers.

Senator COTTON. Has the status of the border changed from 2018 to March of 2021?

General VANHERCK. When you say "status of the border," can you clarify?

Senator COTTON. The conditions there and whether or not we are closer to having a secure border or do we have a less secure border now than we did when this major personnel change first started.

General VANHERCK. I would defer to Homeland Security for the security of the border. We are in direct support of Homeland Security for that mission. I can tell you the numbers of migrants coming across had dramatically increased here in recent months.

Senator COTTON. What kind of strain does that put on our personnel at the border?

General VANHERCK. Our personnel being DOD?

Senator COTTON. DOD personnel.

General VANHERCK. DOD continues to provide support to Homeland Security and Customs and Border Protection, mainly in the detection and monitoring. Total number of 4,000 does not place an incredible strain on the force, and has not shown significant strategic readiness of our ability to accomplish our missions.

Senator COTTON. I have seen some media reports that suggest in addition to economic migrants, who are not eligible for asylum, showing up at our border from Latin America, that we are now beginning to see foreign nationals from other countries in Africa and Asia. To you knowledge, is that correct?

General VANHERCK. Senator, I am aware of intelligence reports that corroborate exactly what you just said.

Senator COTTON. What kind of threat does it pose to our country that persons might be traveling from the old world to the new world to join these migrant flows?

General VANHERCK. I believe that we must continue to monitor anybody who has nefarious desires for our country. Homeland defense, border security is national security which equals Homeland defense. There will be people take advantage of the opportunity to come across that border.

Senator COTTON. Yeah, I could not agree more, General VanHerck. I mean, if our border is open, anyone from around the world could get to Mexico and try to cross our border, not just to seek a better life here but to harm or ultimately try to kill our own

people. I go back to this simple point: if you let them in, more will come.

All the controversy you see in the media are misplaced, talking about how faster we are processing migrants through these detention facilities, or whether they have enough showers or beds or cots. If you do not let them in in the first place, you do not have to worry about the conditions in the detention centers.

The Biden administration has to reverse course. There are three simple solutions. First, it should reapply the public health declaration under title 42 to all foreign nationals, to include minors, just like the Trump administration did, as the Biden administration still does for adults. Second, it should renegotiate a new migrant protect protocol with Mexico, which it tore up for no reason on its first days in office. Third, it should re-enter a safe third country agreement with Guatemala. If you are seeking asylum at our border, there is no reason you cannot seek asylum in Guatemala. That was the lesson of the last administration. Those three things alone will solve our crisis at the border, and they could all be done tomorrow.

Chairman REED. Thank you, Senator Cotton. Senator Kaine, please.

Senator KAINE. Thank you, Mr. Chair, and Admiral Faller, I want to follow up on the comments made about the border crisis. It is a crisis and there are important things that we must do. I want to puncture the partisan finger-pointing that has been done, because it is a crisis, I think that we all have to solve. The notion that this was bad under the Obama administration, fine under the Trump administration, and now bad again is just not realistic.

During the Obama administration, we worked together in Congress on a comprehensive immigration reform bill that would have poured tens of billions of dollars into border security. It was bipartisan in the Senate. It could go nowhere in a Republican-dominated House. It would not even get a Committee hearing.

During the Trump administration, we came up with a plan that was bipartisan in February of 2018, that would have protected Dreamers and put $25 billion into border security, every penny that the President had asked for, and when the bill was introduced with 16 co-sponsors—8 Democrats, 8 Republicans—the Trump administration, having said that they would sign the bill—"You put it on my desk, I will sign it," is what the President told many of us—they decided, within a day, that they so did not like Dreamers that they were willing to turn away $25 billion in border security.

We missed an opportunity in 2013 to put about $40 billion into border security because of a Republican House. We missed an opportunity in 2018 to put $25 billion into border security because the President did not like Dreamers.

Now I do not say that to suggest that the problem at the border is the fault of one party or another. It is a challenge, we all have to deal with it, and we have to find solutions. I share my colleagues' views that one of the solutions is putting some tough laws in place and enforcing them. I think the asylum rules maybe need to be tightened up.

I want to correct my colleague. He asked you a question about asylum rules, and asked if there was persecution for another rea-

son, but he left out persecution based on political status. I can assure you, in the Northern Triangle, having lived there, there is significant persecution in the Nations in the Northern Triangle against political dissidents, against journalists, against environmental activists, and there has been a history of persecution against indigenous people. There are some other groups—my colleague is right. They are not being persecuted directly now, but political opponents are.

In Honduras, where I lived, the Organization of American States (OAS) said, after the last presidential election, that the election should be re-run because they were so corrupt. Instead, the U.S. recognized the corrupt government and then cut off aid to the corrupt government, and then what we see today, as you said, Admiral Faller, is sort of a perfect storm. If we do not invest in security and economics there will be economic refugees, and my colleague is right, an economic refugee is not entitled to asylum status. But nevertheless, if we are not working to promote security and economic improvement, there is a natural consequence to that.

So we need tougher border security, we need to increase investments in security assistance in the region, and we need to hold authoritarians accountable rather than turn a blind eye to their misdeeds. These are things that we can do and we can do together.

General VanHerck, I want to ask you a question. Canada is a pretty good ally of the United States militarily, aren't they?

General VANHERCK. Absolutely, Senator.

Senator KAINE. In my conversations with the Canadian Foreign Minister and the Canadian Minister of Defense, it has been a sore point with them that the U.S. uses national security waivers against them to impose tariffs. We have trade disputes with Canada over milk, over lumber products, over all kinds of things. That is not unusual given the sizeable border that we share. But they expressed to me a particular concern when the previous administration labels them a national security threat, and they point out, "Hey, we fight with you in every war. We are side by side with you in military hospitals, at Landstuhl and elsewhere."

Have you heard a similar concern expressed, dissatisfaction from the Canadian side about United States using national security, labeling them a national security threat in order to impose tariffs?

General VANHERCK. Senator, my discussions with the Minister of National Defense, the Deputy, and also the Chief of the Defense Staff, I have not been engaged or had that discussion.

Senator KAINE. Okay. Thank you for sharing that. Thank you, Mr. Chair.

Chairman REED. Thank you, Senator Kaine. Now via Webex, Senator Rounds.

Senator ROUNDS. Thank you, Mr. Chairman. Gentlemen, good morning. I thank you for both of your continued dedication to our country and for your previous service.

Let me begin. I would like to start with Admiral Faller. Understanding and combatting Russian and Chinese influence operations truly is critical to our national security. Senator Gillibrand began this discussion with you a little while ago, talking about what is happening in our southern regions. Admiral Faller, I would like to talk a little bit about what our options are, what the tools are that

are available to you to counteract that misinformation, and what tools you may need right now, or what additional assistance you need, in order to be able to counteract some of the misinformation that currently is occurring.

Admiral FALLER. I cannot stress enough the full-court press that China has on to gain their economic dominance in their version of a world order globally and in this hemisphere, which I look at this hemisphere as the front line of competition, and we have to approach that as such, as a United States Government, across all elements of power, with the diplomats and in the lead, clearly.

Military plays a role. Our principal method to block Chinese military interests, the People's Liberation Army (PLA), is by staying engaged with our partners in our exercise program, our IMET program. These are world class. China has tried to copy them. They have tried to replicate Leavenworth in Spanish and Portuguese. We need to remain the best at what we do and ensure we provide the volume that is needed to allow our hemisphere partners to be professional and partner with us.

In the IT space, we have to stay engaged to understand what they are up to. That goes back to intelligence resources.

So I would sum this up by saying additional intelligence assets, continued security cooperation, and increased volume of IMET and exercises, and then enough assets to stay on the field. That includes our small special operations force teams, which are very effective. Last year we received great support from the United States Army to put some small security force assistance teams in places like Colombia and Honduras, which are having great effect, to train, and it is only training, not accompany, our partners.

Senator ROUNDS. Thank you, Admiral. General VanHerck, right now you have got, on a day-to-day basis, you clearly have more individuals trying to cross the border into the United States. There is no question about that, and clearly that is something which most certainly, in your supporting role, will take up a fair part of your day. But at the same time you have one of the most critical responsibilities out there, defending the Homeland against those possibilities of strategic attack.

Today we have this discussion going on about the need for the triad, the continuation of our triad, and also the need to provide specific defense protection against incoming weapon systems. Can you talk about the connectivity, or the connection between having all three legs of a triad available and also needing to still have the ability to defend the Homeland, and if we were to take away any one of the legs of the triad what that would do, in terms of increasing the challenge for you of defending the Homeland with missile systems set up to protect against incoming weapon systems?

General VANHERCK. Sure, Senator. First, the nuclear deterrent and the triad remains the foundation of homeland defense. I would defer to Admiral Richard on specifics about the triad. I know that the triad today was designed for specific capabilities to basically take the calculus of any threat and create deterrence options because of the flexibility that the triad creates. The most reactive forces are intercontinental ballistic missiles (ICBMs), the most flexible force is the bombers, and certainly the most survivable force is the submarines. Each of those contributes significantly to

homeland defense. We have not had a great power conflict since World War II, and the triad and the nuclear deterrent has been part of that.

With that said, our competitors today are trying to circumvent the nuclear triad and have developed, and stated intent, to attack the Homeland because they assume they can be successful to destroy our will, below the nuclear threshold. I am concerned about having the ability to give decision-makers key decision space in that realm, but not all end-game defeat.

So deterrence by denial is what I talk about, and that is giving options to senior leaders to create doubt in a competitor or adversary's mind about their ability to achieve their objectives with a strike on the Homeland, Senator.

Senator ROUNDS. Thank you. My time has expired. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Rounds. Now let me recognize Senator King via Webex.

Senator KING. Thank you, Mr. Chairman, and General, I would like to follow up on a comment made at the end of her question by Senator Shaheen, and ask in your professional military opinion, would it be in the interest of the United States to accede to the Law of the Sea treaty?

General VANHERCK. Senator, yes, it would be. It gives us a better posture, a seat at the table, more credibility when we work many of the issues that we have to work around the globe with allies, partners, and potential competitors.

Senator KING. That is particularly true in the Arctic, isn't it? That is where the Russians are staking claims as we speak.

General VANHERCK. Senator, I agree with your assessment, and as Russia takes over the Arctic Council in May, it has never been more crucial for us, with our like-minded nations and allies and partners that we come to agreement to not allow Russia and China to exploit any seams and gaps.

Senator KING. Thank you. I would like to turn for a moment to the immigration question and the crisis at the border, which everyone recognizes. Admiral Faller, I think at the beginning of your testimony you pointed out that there were significant what I call push factors as well as the change of administration, which is a pull factor. But the combination of the impact of COVID, the two major hurricanes, and the transnational gangs is making life intolerable for people in those Northern Triangle countries. Is that not also true?

Admiral FALLER. Senator, I have met with folks who have walked all the way to the border and come back, and their drive was the violence, the fear for their life, their lack of food for their families, the insecurity. In this past year, we have had that perfect storm of additional factors, COVID and then back-to-back major hurricanes. The region is fragile, the conditions are on par with our Great Depression, and our engagement is critical to help our partner nations overcome this challenge.

Senator KING. It strikes me that whatever we do on border security, and I am fully supportive of a secure border, as long as we have these three countries near our border that are in such terrible shape, people are going to continue to try to find ways to escape.

I have heard the term "we need a Marshall Plan" for that region in order to try to stabilize these countries in terms of their own internal security, their own economies. Does that ring any bells for you?

Admiral FALLER. Senator, I think a Marshall Plan would be a wonderful model as we look at the entire hemisphere, really, and look at the sources of instability across the hemisphere. In addition to Central America, we see Haiti, Cuba, and Venezuela, all sources of illegal migration to the United States, and Venezuela alone, five million migrants now have swelled out of their borders. We need the big ideas. We need the sustained engagement of the all-of-nations and whole-of-government of the United States, and the Department of Defense plays a role, particularly in that professionalism and institutional capacity-building so their security forces do the right thing and contribute to overall sustainable security.

Senator KING. You mentioned in your testimony the Russian and Chinese disinformation campaigns in these countries. Are they also encouraging migration as a way to undermine the United States? Do they see this as a weapon, just as they did with the Syrian migration into Europe several years ago?

Admiral FALLER. The disinformation by Russia seeks to discredit every act of goodness, and we do many that the United States provides in the hemisphere, and to the extent that drives migration there is no doubt. China seeks their own influence, their own economic dominance, and they seek clients while we seek friends and partners. I think their information campaign, best exhibited by a recent visit to a country where I was asked about the illegal and unregulated, unreported fishing in the region, and I cited the example of Chinese involvement off of Ecuador, where their fleets would, for great periods of time, go silent and sweep into the ecological preserve. Then within minutes after my facts-based statement, which is based on various credible sources, the Chinese proceeded to attack me and the media. That is just typical of their disinformation globally, Senator.

Senator KING. Well, I am out of time, but I think your testimony that you (a) do not have adequate ISR resources, and (b) there are not enough ships to interdict the drugs that are coming and killing Americans, including more than one a day in my home state, is very powerful, and that is within our control. That is a matter of allocation of resources, and I hope this Committee can bring some pressure on the administration to allocate adequate resources for ISR and for interdiction, because we are not even interdicting the drug shipments we know about, let alone finding ones that additional ISR could provide. So that is something that I hope this Committee can work on.

Gentlemen, thank you both for your testimony. It has been very illuminating today. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator King. Let me recognize Senator Ernst.

Senator ERNST. Thank you, Mr. Chair, and gentlemen, thank you so much for being here today and for your service to our great nation and the men and women within your commands. We truly appreciate everything they do for us every day.

Admiral Faller, we had a great conversation last week, and you really stressed to me the importance of our neighborhood, and I want to continue visiting about that today because we do need to be very aware, and I think this Committee is, but that we have a lot of nefarious influencers within our own neighborhood, and I would like to talk a little bit about those transnational criminal organizations (TCOs) as well as those that maybe influencing those TCOs and where that is coming from.

You have provided the placemats for us today—China, Iran, Russia. They are all influencers in our neighborhood, and they are all operating. We see the TCOs as well. They are operating to our south, and they are bringing about $90 billion of revenue annually. That is very concerning to me. Then the increase of movement across our borders is something troubling, that we have all been talking about today, and we have to make sure that we are defending that border and pushing back against these influencers.

So let's talk a little bit about the TCOs and what they are doing in the SOUTHCOM AOR, and are they working alongside China, Russia, and Iran?

Admiral FALLER. The transnational criminal organizations are just murderous, violent organizations. They are murdering people, driving migration, and they are fueled on corruption, and so when I look at the interconnection of these organizations and the China-Russia players in our hemisphere, I look at corruption as a common element. It fuels both. Then we look at lack of regard for human rights, and there is a commonality there. Then we look at lack of regard for rules-based international order, or rules in general, and there is a commonality there. So there is an interconnection.

The money-laundering connection is the most significant, where Chinese money-laundering underwrites TCOs a significant portion, and that is something that we are tracking as part of all interagency effort here in the United States. This corrosive influence undermines our democracies and contributes to the fragility and the security concerns we have right in proximity to the United States. Location, location, location drives everything, and that location is so important in this neighborhood.

Senator ERNST. So Senator Shaheen was asking about Chinese influence. So there is above-the-board operations going on with China, where they may be engaging in legal activities. But then you are saying they engage in these criminal activities as well, and under the radar type of criminal organizations.

Admiral FALLER. So the National Defense Strategy and our Secretary's guidance cites China as the pacing challenge, and I side with what the Indo-Pacific Command (INDOPACOM) commander said. It is the most significant threat we face in the 21st century. We want this competition to work out peacefully and not end in conflict and not be adversarial. But Chinese, in addition to the illegal, unreported, unregulated fishing is involved in illegal mining, illegal logging. They are at least tacitly supporting the money-laundering. They are using COVID and vaccines as a hammer to further Chinese Communist Party interests, particularly to get better deals for Huawei and 5G, and to try to drive a wedge between the

remaining countries that support Taiwan, and the majority of those are here in this hemisphere.

So yes, Senator, their corrosive, insidious influence is being felt right here in our neighborhood.

Senator ERNST. Thank you, Admiral, and I appreciate our discussion to that effect last week. General VanHerck, in the remaining time that I have, we have had a number of our own troops working the southern border, which I think has been extremely important. They have been supporting United States Customs and Border Patrol. Are they still playing a vital role in the defense of our Nation at our southern border?

General VANHERCK. Senator, probably answered by customs and border protection (CBP) and DHS. My recent visit would tell you that we are playing a role to enable them to do their law enforcement role by providing support.

When I look at the challenges the transnational criminal organization create on the border, the symptoms that we are seeing are the migration, the human trafficking, the counternarcotics. From a homeland defense perspective, Mexico, being in the United States NORTHCOM AOR, and two major transnational criminal organizations with the Sinaloa and New Jalisco, we have a national security imperative with regards to the instability that they create, the tragedies they create, and the opportunities they create for nefarious actors such as China or Russia, right on our own southern border, to have access and influence, and so it concerns me very much, Senator.

Senator ERNST. Yeah. Thank you, gentlemen, very much, and I appreciate you safeguarding our neighborhood.

Thank you, Mr. Chair.

Chairman REED. Thank you, Senator Ernst. Let me recognize Senator Warren via Webex.

Senator WARREN. Thank you very much, Mr. Chairman, and thank you to Admiral Faller and General VanHerck for being here today. We appreciate the work that you are doing.

General VanHerck, COVID–19 vaccinations are well underway all across our country, and the DOD is helping people get vaccinated. Each day, millions more Americans are receiving hope in the form of these vaccines as we move closer to defeating this pandemic.

But the data show that the vaccines are not reaching every community equally. Death rates for Black Americans and Native Americans, Native Alaskans are nearly twice as high as the death rates in white communities. But the vaccines have disproportionately gone to white Americans. Although vaccine demographic data are incomplete at this point, it appears that only about 7 percent of the 65 million administered doses have gone to Black Americans.

So, General VanHerck, several thousand of the troops you command have been deployed to assist the Federal Government's vaccination efforts. Can you explain how Northern Command made decisions about the deployment of vaccine teams to ensure that communities of color are getting the vaccines that they desperately need?

General VANHERCK. Senator, absolutely. The United States Northern Command does not make the decision where teams go.

That is done through the FEMA process, and we answer to their mission assignment and go to the locations determined by that interagency process.

Senator WARREN. Fair enough. Do you know if FEMA is prioritizing communities of color?

General VANHERCK. In my discussions with the Acting Director, Mr. Fenton, they do take all considerations in, from state and local officials, governors that are asking for support, and factoring in those specifics, and based on the need of where the transmission rates are the highest they do take all that in, from my discussions.

Senator WARREN. Well, it is hard then to explain why we are down at 7 percent vaccination rate for Black Americans. Can I ask you to commit that in future discussions, as you are talking about how to deploy these teams, that you will support making sure that we are making adequate vaccination efforts in communities of color?

General VANHERCK. Senator, I commit to you that I am agnostic with regards to where we provide support, and I will work closely with the FEMA team to make sure we do that.

Senator WARREN. Well, I would like to hear that you are not agonistic but that you are really committed to helping in the communities of color that are being hit hardest, and where we are seeing the highest death rates.

General VANHERCK. I apologize——

Senator WARREN. I am sorry. Go ahead.

General VANHERCK. I apologize. I am fully committed. I thought I said that, the second part.

Senator WARREN. Okay.

General VANHERCK. Absolutely.

Senator WARREN. I hope so. I am also concerned about reports of Russian misinformation campaigns against the vaccine that are aimed at reducing the number of Americans willing to get vaccinated. Can you just say a word about what strategies is Northern Command using to combat this misinformation?

General VANHERCK. Senator, it is an information and education campaign, primarily within our own forces. I am happy to report to you that we have approximately 85 percent acceptance rate within the command. In my discussions with the Secretary of Defense and within the interagency we have talked and shared the lessons learned about how to educate and also exploit or expose the disinformation. So I think that is crucial to combine both the education aspect and exposing the disinformation.

Senator WARREN. Well, thank you. This pandemic has not affected all Americans equally. Black and brown communities have disproportionately suffered from COVID–19, and its effects will likely be felt for years. Northern Command and the Federal Government's vaccination efforts must prioritize the hardest hit communities, and I hope that you will continue to work hard to ensure that the vaccine goes to those who need it most.

Thank you very much, and thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Warren. Senator Tillis, please.

Senator TILLIS. Thank you, Mr. Chairman. Gentlemen, thank you for your decades of service.

General VanHerck, I want to go back and just finish, or make sure I understood, with respect to any DOD resources supporting local mission objectives around vaccine dissemination. You are there to basically provide personnel support after the decisions about where to administer the vaccines, which populations should be prioritized. You are not actively involved in that prioritization process. Is that correct?

General VANHERCK. Senator, that is exactly correct.

Senator TILLIS. Okay. Thank you. Admiral, I had just maybe an addendum to the request that Senator Wicker made, following on to Senator Shaheen's comments. This one graphic that shows China influence, I think what would be helpful in there is just to show American influence but also to show the trend lines. My guess is based on a comment you made, they are trending in the wrong direction. So I think it would just be helpful, when you provide that graphic, to show us the heat map on where we really need to muster more resources.

On the TCO graphic, you all summarized the disruption in terms of narcotics, I think 313 metric tons in fiscal year 2020. How does that compare to fiscal year 2019, and what are the trend lines for fiscal year 2021?

Admiral FALLER. In overall amounts, Senator, it is comparable. But what is significant about fiscal year 2020 is the impact of the global pandemic. So we know that, for a time, the narco traffickers went to ground and did not push as much of their product, and then when they did, because a lot of border controls were tighter and the methods of delivery were harder because economies had shut down, they ride their traffics on the backs of the economies so they were having difficulty getting precursor chemicals and so on. When they did start pushing it, it was in smaller loads, in different routes.

What is significant about the DOD's performance, and as part of the whole-nation effort, really what we do is we detect and monitor and pass that off to law enforcement is that we never step back. We stepped up on the face of pandemic. We accounted for a significant increase of the amount that we targeted. So while the total amount was the same, our percentage of getting at effective targets was up, and that was because we did have a modest increase in resources throughout the year. The United States Navy stepped up, at the direction of the Sec-Def, with Navy ships, additional P8's, and the Coast Guard sustained their always excellent support. What we saw is when the U.S. stayed on the field, our partners stayed on the field.

So overall we held the line, as part of the effort. We will never interdict our way out, but we have got to keep pressure on that part of the supply chain. The Colombians did their part. They had a record eradication year. Where we need to go next is in the finances, into their data, into that source of their power, and really break the center of gravity of these organizations, and I think we can do that more effectively with a better, effective targeting and whole-of-government approach here in the U.S., and training our partners to do the same.

Senator TILLIS. Thank you. Something that would be helpful, if you do not have it available I would also be interested in a similar

update on human trafficking disruption. If we could just get that submitted for the record I would appreciate it.

At the southern tip of your area of responsibility, General VanHerck, and Admiral, the northern, what is the change in posture? What is the environment like now as compared to, say, this time last year? I mean, military presence—I know even at the southern border, the southwest border of the United States, we had stepped up Mexican military presence. How would you summarize that today, and then also the southern Mexico border and our border states, what is their posture there, trying to manage flow of immigrants moving across those borders, now compared to a year ago?

General VANHERCK. I will go first. From Mexicans' perspective, they are tremendous partners. We have a fantastic military——

Senator TILLIS. Are they maintaining the same sort of operations tempo that they have for the past year or so?

General VANHERCK. They are. They have been great partners.

Admiral FALLER. Same for Guatemala. They are committed, they are committed to doing the right thing here, but they are stressed with COVID and the other insecurity by the transnational criminal organizations. So their ability to surge more in the migrant problem set is limited.

Senator TILLIS. Thank you. As we move forward with funding and National Defense Authorization Act (NDAA) this year I would also be interested in maybe you submitting for the record key funding flow that are trending in the wrong direction that we should focus on when we get back to appropriations discussions, and any sort of authorities you may need in the NDAA. Thank you very much.

Thank you, Mr. Chair.

Chairman REED. Thank you, Senator Tillis. Let me recognize Senator Manchin.

Senator MANCHIN. Thank you, Mr. Chairman, and thank both of our panelists for their service to our country, and we appreciate very much you being here today.

Admiral Faller, I do not think it is possible to overstate the threats are adversaries are posing in your area of responsibility and Africa Command (AFRICOM), because they know whatever investments they make in South America and Africa are cheap and will pay dividends in the future.

At the end of February, United States Army South finished predeployment training for Operation Alamo Shield, to prepare 1st Security Force Assistance Brigade personnel for future missions in Colombia, Honduras, and Panama. In addition to our state partnership program's ongoing training and advising, operations like this one are crucial for promoting interoperability and relationship-building in your area of responsibility.

So my question would be, what specific training programs in SOUTHCOM are you going to develop to increase the capabilities and the capacity and to further combat the growing concern for corruption within the ranks of our partners, and especially with the migration that we have going on right now? Can't they play a bigger role in that, sir?

Admiral FALLER. Senator, I would like to commend the West Virginia Guard, which does fantastic work through the state partnership program with Peru, and has been an active participant in our exercise program. You cited the security force assistance teams that the United States Army has developed. That is exactly the right capability. It is small. It is small teams that focus on training, think four or five people, and our partners want to emulate the professionalism of the United States Army, the United States Navy, the Coast Guard, Air Force, Marines, and that is the way forward, staying engaged on the team, on the field, with the small teams that train our partners' trainers in the professional use of force, that involve Women, Peace, and Security training, that involve human rights training. This is the way to go, and we continue to emphasize and strengthen those programs, Senator.

Senator MANCHIN. Thank you, sir, and to General VanHerck, our current major ballistic missile defense assets around the globe include the ground-based midcourse defense (GBMD), thermal high altitude area defense (THAAD) batteries, Aegis systems, and PAC–3 missile capability. As China and Russia continue to increase their influence abroad I am concerned that their objectives provide them with the ability to deny us access, break apart our relationships, further corrupt governments, and ultimately place threats closer to the United States.

However, as we begin to think in terms of hypersonic threats, geographical location does not mean much anymore, and the importance of early detection and coordination between the combatant commandments becomes an even more crucial concern.

So my question is, as we continue to develop space-based sensor layers, what role do you see for NORTHCOM and NORAD in tracking threats in North America as well as interfacing with other combatant commands to track threats such as hypersonics?

General VANHERCK. Senator, wearing my NORAD hat, we are directly responsible for integrated threat warning and attack assessment, so that is crucial. We will continue to play a crucial role for assessment of threats to the Homeland, specifically from missile threats. I am concerned about the ability going forward to track and assess hypersonics, and so we must go to space, and in my recent discussion just this Friday, talking with Jon Hill at the Missile Defense Agency, they are moving out.

What we have to provide is space-based capabilities to track hypersonics, especially as they maneuver, and those space-based capabilities have to provide fire control capability data to systems that will be able to engage hypersonics. That is crucial for that deterrence by denial aspect that I mentioned earlier, that also contributes to overarching deterrence.

Senator MANCHIN. Is there a requirement for [inaudible] at each of our combatant commands that represents the other commands in order to build situational wellness to coordinate the efforts?

General VANHERCK. Senator, I believe homeland defense starts forward, and that means all combatant commands must be engaged and part of the overarching solution for homeland defense and missile defense.

Senator MANCHIN. Thank you, General. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Manchin. Let me now recognize Senator Sullivan.

Senator SULLIVAN. Thank you, Mr. Chairman. Gentlemen, thank you for your service. Good to see both of you again. Admiral, it has been a while. Thank you for all you are doing down south.

General, I want to focus on some issues I know that have already been mentioned. First, on missile defense. One, I think, a good news story, that does not make a lot of press. But in the last few years this has been a strong bipartisan support in this Committee, in this Congress, on building up our missile defense I think, in part, because of the threats from North Korea. However, there have been challenges. Right now we have 20 empty silos at Fort Greely, which makes no sense. Some estimates are it is going to be 10 years before we have missiles in there.

Can you talk to me about that, and why in the world aren't we filling those silos as soon as possible?

General VANHERCK. Senator, my goal would be to have additional capability and capacity as soon as possible. I continue to work closely with Jon Hill at the Missile Defense Agency. My top priority is to stay on timeline, to field additional capabilities against ballistic missiles that could attack our Homeland.

Senator SULLIVAN. Isn't that in part because there is intel that given the rate of what North Korea is producing in terms of nukes and intercontinental ballistic missiles that their capability could overwhelm our capabilities as early as 2025?

General VANHERCK. Senator, I would like to have that conversation in a classified environment. I remain extremely concerned about the capacity of the ballistic missile defense system going forward.

Senator SULLIVAN. Would quickly fielding the NGI help with addressing that challenge?

General VANHERCK. The sooner we can field the NGI, the better for addressing that challenge.

Senator SULLIVAN. There was an article in a defense media news source recently saying that the NGI decision is on the Deputy Secretary of Defense's desk and yet it is being delayed. Some are thinking that she might kind of use this as a budget-cutting tool to say maybe we do not need it. Is that a good idea to delay this and have the Pentagon say we do not need NGI right now?

General VANHERCK. Senator, I will stay out of the policy aspect of that.

Senator SULLIVAN. Well, you kind of are already dumped into it, so let me get your personal opinion on that. Is that a good idea for the Deputy Secretary, or the Secretary, to say let's figure out where we can cut the budget. Let's cut the budget on the system that protect the entire United States of America from a clear and growing threat. Is that a good idea?

General VANHERCK. Again, that is a policy decision. My perspective is about the risk, and I remain very concerned about the risk of having a capable ballistic missile defense system against future capacity changes and capability changes by threats.

Senator SULLIVAN. Would the risk increase if we cut the NGI program——

General VANHERCK. My assessment——

Senator SULLIVAN. In your personal opinion?

General VANHERCK. In my opinion, cutting that would reduce our capability to defend against increased capacity and capability of any threats.

Senator SULLIVAN. Mr. Chairman, this is a huge issue and I think we, as a Committee that has been very bipartisan, need to send a message to the Pentagon, like, hey, fund this now. It is clear it would be a risk to the country.

Let me turn to the Arctic. I know there has been a number of discussions already. The good news is, in his confirmation hearing, Secretary Austin, Deputy Secretary Dr. Hicks, both said they were committed to this Committee to fully fund new Arctic strategies—I think the Army is going to introduce it today—with regard to fully funding the different service-oriented strategies.

Senator Wicker talked about icebreakers. It is good we are finally building them. It is taking too long. There is this leasing option that the Trump administration was looking at, at the end of the administration, and now the Biden administration is looking at. Do you think that is a good idea to close this icebreaker gap with the opportunity to lease icebreakers, get them homeported in America's Arctic, which is Alaska? What is your thought on that?

General VANHERCK. Senator, that is a policy decision. I have a requirement for capability. I am agnostic to what provides that capability.

Senator SULLIVAN. But you think we need the capability.

General VANHERCK. Absolutely.

Senator SULLIVAN. Good. So do I. So does this Committee, by the way.

Let me ask one final thing. There is going to be a high-level meeting between our diplomats and Chinese diplomats in Anchorage Thursday and Friday. We talk about Alaska in terms of the Arctic, but as you know, General, Alaska also is critical for the Asia-Pacific, particularly as we look at dispersing of our forces. We had the Pacific Command (PACOM) commander here last week talking about challenges, perhaps in the Taiwan Strait, as early as 5 to 6 years from now.

Now important is it, do you think, that the Chinese, when they come to Alaska, see that there is, within the end of this year, going to be over 100 fifth-generation fighters based in Alaska, that can get to the Taiwan Strait probably in 6 hours?

General VANHERCK. Senator, Alaska is a strategic location. It is a strategic location for homeland defense, something that we must preserve and preserve that capability. I think it is important that they see our capabilities. It is part of our overarching deterrence.

Senator SULLIVAN. Great. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Sullivan. Let me recognize Senator Peters, please.

Senator PETERS. Thank you, Mr. Chairman, and, gentlemen, thank you for your testimony here today and for your service every day.

General VanHerck, a seldom-discussed area of the civil support mission is chemical, biological, radiological, and nuclear response, and this is good considering the subject matter, but as long as supporting units are resourced appropriately we can be more assured.

So my question to you, sir, is, the Command and Control Chemical, Biological, Radiological, and Nuclear (CBRN) Response Element B has experienced a cumulative 25 percent decrease in funding over the past 3 years, and I understand these are title 32 funds, and I know that you do not control those funds. But the effect should at least be of concern to you because the unit augments Northern Command for CBRN, and Defense Security Cooperation Agency (DSCA), more broadly.

So my question to you, General, is, does the decrease for the Guard and Reserve C2 element reflect your priorities or those of the Army North and Joint Task Force Civil Support?

General VANHERCK. First I would say I remain confident in my ability to provide support in case there is an incident—chemical, biological, radiological—in the continental United States, and with regards to the specific prioritization, I would say that I need to get further detail on the cut for title 32. I am not tracking that. But we are well integrated with state and local authorities and have our capability ready to go, some of it on an hour's notice, others on a day's notice. So I am confident in my ability to perform that mission.

Senator PETERS. Well, I appreciate that, and you are willing to take a look at that and get back to us? We could follow up with you?

General VANHERCK. I will.

Senator PETERS. I appreciate that. Thank you.

[The information referred to follows:]

General VANHERCK. Well, first, I would say I remain confident in my ability to provide support in case there's an incident chemical, biological, radiological, in the continental United States. With regards to the specific prioritization, I would say that I need to get further detail on the cut for title 32. I'm not tracking that, but we're will—well integrated with state and local authorities in have our capability ready to go some of it on hours' notice others on days' notice. I'm confident in my ability to perform that mission.

I understand that National Guard Title 32 funding for Chemical, Biological, Radiological, and Nuclear Response Element B (CBRN Response Element B) has been slightly reduced, but I maintain full confidence in the National Guard's ability to perform this critical mission. USNORTHCOM is in routine contact with the Department of the Army and the National Guard Bureau regarding CBRN Response Element B's mission and associated requirements, and I will continue to place heavy emphasis on ensuring their ability to respond quickly and effectively.

Admiral Faller, the Southern Command takes a nontraditional approach to intelligence, integrating public information with advanced analytics, artificial intelligence, and machine learning. My question is, is this in-house research, development, test and evaluation (RDT&E) effort unique to the Southern Command?

Admiral FALLER. The nontraditional efforts that you speak of, through our special operations force, looks at big data and what the enemy is doing in big data's commercially available information and machine learning, artificial intelligence. It is a unique effort that is now being replicated, and it is a key area that we need to emphasize in our intelligence efforts going forward, appropriately working within the U.S. whole-of-government.

This data, it is data that my shipmate, General VanHerck, talks about, and stovepipes in that data that we create with our own policies have to be broken down so we can leverage that to understand what the threat is doing. Certainly our malign actors that

are working in this hemisphere, China and Russia, they do not respect laws when they look at exploiting that type of data for their own benefit.

Senator PETERS. You mentioned some of that is being replicated. Are you aware of some similar successful methods with other combatant commands or the intelligence community?

Admiral FALLER. We have a pilot program that we have worked, to look at cryptocurrency. In this hemisphere, with only 8 percent of the world's population, 60 percent of the cryptocurrency is being leveraged, and that is because of the plethora of transnational criminal organizations that are wreaking violence in the hemisphere. So that is a concern.

So how do we get at that center of gravity to break the backs of these threats, working with Treasury and other partners, in support of. We are not looking to take the lead here. We are looking to play the appropriate role. So there are efforts, and those efforts are, frankly, funded every year on the unfunded request or through additional support from Congress. So we need to appropriately sustain that going forward.

Senator PETERS. Thank you. On Thursday, NORTHCOM will begin Global Information Dominance exercise, and I understand that 9 of the 11 combatant commands are planning to participate in this exercise, which is meant to prototype and test a set of artificial intelligence (AI) tools, and I know there was some discussion about Pathfinder earlier. But the intent is to support joint all command and control implementation.

So my question for you, General, is, can you explain why these types of exercises are absolutely critical to our modernization and readiness efforts and why NORTHCOM is leading this initiative?

General VANHERCK. Absolutely, Senator. From the NORTHCOM and NORAD perspective, we view data and information as a strategic asset. So we are conducting these exercises to bring everybody together to show the true value and importance of the strategic ability that we can utilize information and data. So we look forward to continuing to partner with the combatant commands, the services, and bringing them together to demonstrate capabilities that can not only help us in conflict but, more importantly, help us de-escalate in crisis and to deter in competition.

Senator PETERS. Great. Thank you, General.

Chairman REED. Thank you, Senator Peters. Senator Cramer, please.

Senator CRAMER. Thank you, Mr. Chairman. I thank both of you for being here. I appreciate your service, Admiral and General.

I am going to start with you, Admiral, because early on, in a response to a question from Senator Inhofe, you had cited the fact that you only get 1 percent of the ISR, and that was fairly stunning to me, especially since the Air Force has been trying to retire their RQ–4's and cut the production of the MQ–9's, two systems that we are very familiar with in North Dakota, of course. They are operated quite effectively out of our state, one by the Air Force and the other by our Guard in Fargo.

One of the reasons that they use for wanting to cut production or retire, and realizing some of it is that they want to save money for new systems, and that is noble. We need to make some tough

decisions about that. But one of the reasons they use is these platforms are not survivable in near-peer competition.

So my question to you, Admiral, is could you use our RQ–4's and MQ–9's in your theater, and is there significant threat to the survival of these platforms in SOUTHCOM?

Admiral FALLER. As you mentioned, Senator, we receive less than 1 percent of the DOD ISR, and it is a prioritization, and there are global challenges and I recognize how that plays out. But this is a good environment in SOUTHCOM for unmanned. We have had, for the first time ever, an MQ–9 through the past year, and we have Customs and Border Protection MQ–9 as well. They have proven their utility because they can stay on station for a long time and stare at the threats. They can also learn, in general, about the environment beyond the transnational criminal organization threat, so we have the understanding that we need to ensure that we are appropriately postured moving forward.

Senator CRAMER. Thank you, Admiral. General, thank you for our discussion last week. I enjoyed it very much. I found it very interesting, and I learned a lot, as is often the case, and one of the things that you and I talked about, of course, was the fact that NORAD and NORTHCOM participated with the Air Force Research Laboratory in an over-the-horizon study that included some testing at Camp Grafton, North Dakota, our National Guard Camp. That is part of the Office of the Secretary of Defense (OSD) Coalition Warfare Program-funded Arctic high frequency (HF) surveillance program. We were told, of course, that the results exceeded expectations.

My question to you is, do you still the need for an over-the-horizon radar system and capability, and do you expect further, more advanced testing any time soon?

General VANHERCK. Senator, my focus and top priority is domain awareness, and over-the-horizon radar would certainly contribute to domain awareness. My understanding is right now, with regards to the test that you are talking about, the current Northern Strategic Approach's study is with the Air Force. We are waiting for that to come out. I talked to General Brown on Friday about that. Once that report comes out we will in a better position to see, on the way forward, with the Research Lab, or however we are going to pursue that. But domain awareness is at the top of my integrated priority list.

Senator CRAMER. Thank you for that and thanks for that answer, and thanks for following up with General Brown.

One other question for you, General VanHerck. There is a lot less military presence between Michigan and Montana, obviously along the northern border, than there used to be during the Cold War, even though, I mean, one could argue that there are more threats in the Arctic and from missiles coming over the Arctic even than there were during the Cold War.

If there was a threat coming over the Pole, through Saskatchewan, say, do have enough fighters, tankers, missile warning, missile defense systems to meet that threat?

General VANHERCK. Senator, day to day I am confident in my ability to defend against the threat that we have. Day to day, I am postured primarily against a 9/11-type of response. If indications

and warning or a crisis evolved, I would go ahead and ask for additional forces. At that time, if I was allocated additional forces or not I would have to make a broader assessment in my ability to defend.

Senator CRAMER. Well, and as you mentioned, obviously domain awareness is the critical aspect of being prepared. Is the radar coverage for that area modern enough to track any threat reliably, do you believe?

General VANHERCK. Senator, I remain concerned about domain awareness in the north, with the legacy North Warning System. If we apply capabilities such as Pathfinder, that will increase my capability. But more broadly, we need to get after it with more modern systems, systems not designed to go after a stovepipe, single domain, single threat. We need systems capable of going after everything from small counter-unmanned aircraft systems (UAS) to ballistic missiles, that are able to be efficient and effective.

Senator CRAMER. Excellent. Thank you. You are both awesome. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Cramer. Now I would like to recognize Senator Rosen via Webex.

Senator ROSEN. Thank you, Chairman Reed, and I want to thank the witnesses for being here and for your great service to our Nation. I would like to speak a little bit about Hezbollah in the Western Hemisphere, because for decades Iran's proxy has long maintained an active presence in the Western Hemisphere, engaging in terrorist activities, drug trafficking, and money-laundering. In 1994, Iran and Hezbollah bombed Jewish community center in Argentina, killing 85 civilians and injuring more than 300. The Treasury Department has sanctioned numerous Hezbollah-linked operatives and entities in the Western Hemisphere for links to transnational organized crime.

So, Admiral Faller, in your written testimony you stated that Hezbollah's external operations are responsible for at least three high-profile attacks in the region and three other planned operations that were disrupted. Can you elaborate on the threat that Hezbollah poses to United States interests in the Western Hemisphere, and if its presence is growing where do you see it growing?

Admiral FALLER. Senator, these threats go right back to Iran, the single largest state sponsor of terror in the world and the long arm or Iranian malfeasance is felt globally and in this hemisphere. Significant Lebanese diaspora. Lebanese Hezbollah receives funding support, and they are intertwined with Iranian state-sponsored terrorist in ways that undermine global security and security in this hemisphere.

We have seen an increase in presence of Iran activities in Venezuela to support the illegitimate Maduro regime, increasing the readiness of some of their defense systems, and we have seen the continued involvement with the diaspora and economic fundraising particularly down in the tri-border region, neighboring Paraguay, Argentina, and Brazil.

Senator ROSEN. Well, you know, you are speaking of the diaspora that is extremely important. So how can we improve information sharing with our regional partners to identify and disrupt Hezbollah's activity in Latin America?

Admiral FALLER. One of the very positive things that I have seen over the last couple of years is the extent to which we have increased our information sharing with key partners, Brazil and Colombia. We rely on them, they are like-minded democracies, to share information so that we understand the threat. We have expanded that information sharing significant this year. It is key to moving forward and it is built on longstanding trust that we have, that is borne out of professional military education.

We have security cooperation programs that work to build professional intelligence services. We do this through our 333 program, and sustaining those programs are very important.

During the past year we have been able to expand, modestly, those programs in cybersecurity, and that will really be critical to understanding both the threat that is posed by Iran and their state-sponsored terrorist organizations and other nation-state actors like China.

Senator ROSEN. Thank you. I would like to move on and ask General VanHerck a little bit about our COVID response and support. You have been so terrific. You have deployed Navy hospital ships at the start of the pandemic. You have cared for coronavirus patients at Army field hospitals. Now, of course, President Biden is directing states to open up vaccination appointments to all American adults by May 1st.

So I am curious what your role may be in this new mission. How is NORTHCOM generating and deploying forces to support the vaccine distribution and administrative mission, and specifically, as members of the military and their families get vaccinated, and once military installations are covered, do you have coordinated plans or have you had preliminary conversations with local civil authorities to leverage the capacity you have on the bases and refer to local communities to get the vaccines deployed?

General VANHERCK. Senator, we work with not only the local communities, state authorities, and our local bases to ensure that we follow the DOD's published guidelines along with the Center for Disease Control and Prevention (CDC) as well. I am confident going forward that we will continue to provide that support. We have worked with the Department. I have put in a request for 100 teams, 50 Type 1 teams, the most capable, capable of delivering about 6,000 shots per day, and also 50 Type 2 teams. As far as sourcing those, the Joint Staff works with the services and the departments to calculate and come up with sourcing solutions. The Secretary approves those and allocates them to me, and we work through Federal Emergency Management Agency (FEMA) for the actual location and mission assignment on how we are going to continue executing President Biden's mission to get where he needs to be on 1 July.

Senator ROSEN. Thank you very much.

Chairman REED. Thank you, Senator Rosen. Senator Scott, please.

Senator SCOTT. Thank you, Chairman Reed. Admiral Faller, thank you for the conversation last week. As we all know, the fundamental problem in our hemisphere is Cuba. They are the root of all the instability in Latin America. They terrorize their own citizens, they steal from their own citizens, and they support dictators

in Latin America, such as Maduro in Venezuela and Ortega in Nicaragua.

How important is it, in your role, for the Cuban regime to not have resources, to do everything we can as a country to make sure that the Castro regime does not have the resources to terrorize their own citizens and be involved in these other countries?

Admiral FALLER. In addition to the nefarious activity you cite, Senator, Cuba and Russia and China are actively engaged just miles from our home state, and it is concerning as we see that relationship going forward. So to the extent to which we can prevent those kinds of relationships from developing and from Cuba enhancing its capabilities, it is very important. One of our assets, one of our real strategic toeholds in that effort is our naval station at Guantanamo Bay.

Senator SCOTT. Is it important that they do not have resources?

Admiral FALLER. I think it is extremely important that we prevent the Cubans and the communists from doing what they are doing in Venezuela, where they are keeping Maduro in power, and where they are undermining. We see them actively undermining free and fair elections in democracies across the hemisphere. So yes, Senator.

Senator SCOTT. What is their involvement in Venezuela now, and are they part of provoking Venezuela's aggression against Guyana?

Admiral FALLER. Cuba's Praetorian Guard keeps Maduro in power. They are there in the thousands. They own the intelligence service alongside Russia primarily, and Iran, and China to a lesser extent. They are supporting, maintaining Maduro's defense systems and security forces, and undoubtedly that then gives Maduro the capacity and capability to rattle the saber and threaten the neighbors, and also, frankly, allows a safe haven for narco traffickers and narco terrorists, which is what Venezuela has become. It is hell for its citizens and it is heaven for the terrorists.

Senator SCOTT. So what can your command do to confront the reports of illegal shipping activity out of Venezuela?

Admiral FALLER. We are actively involved with all of our interagency partners to track that and learn as much as we can about it, and then provide that information to our diplomats who can call it out and come up with solutions that support the whole-of-government efforts to shift Venezuela to a democracy.

Senator SCOTT. Have you or our government through sanctions been able to do much to stop the flow of oil from Venezuela to Cuba?

Admiral FALLER. The pressure has worked. The Maduro regime has been denied resources. But in any of these things they are very clever. When you have no regard for rule of law and corruption fuels everything you do and you are supported by nation-state actors like Russia and China, you can circumvent rules and laws, and they have been able to keep the follow up just enough to maintain their economy, particularly the regime's grip on that economy and its people on life support.

Senator SCOTT. Can you talk a little bit about the humanitarian crisis, both in Cuba and in Venezuela, as a result of the Castro and Maduro regimes?

Admiral FALLER. Well, the United Nations Human Rights Report lays it out. The atrocities that the regime has committed on the people are beyond compare in this hemisphere, and they have created the largest migrant crisis this hemisphere has ever seen, some five million migrants that have swelled the services, of all the social services. That is why we deployed Hospital Ship *Comfort* twice in a year's period prior to the pandemic. It is a credit to Colombia and Brazil and other democracies that they have been able to handle it as effectively. I commend them.

Similarly, in Cuba, we have had past migrant crises and we have a mission set to prepare with Homeland Security for that. We have seen a slight uptick this year in migrants coming out of Cuba. We are watching it very closely, and undoubtedly, again, it is due to the brutal economic conditions and the repression that we see. We study that intensely in our intelligence and information-sharing efforts.

Senator SCOTT. Thank you, Admiral Faller. Thank you, Chairman.

Chairman REED. Thank you, Senator Scott. Let me recognize Senator Kelly, please.

Senator KELLY. Thank you, Mr. Chairman. Admiral Faller, you and I had an extended discussion last week about activity in the region as well as some of the push factors contributing to migration flows that are exacerbating the challenging situation at the southern border. I would like to focus on the strength of criminal organizations in the region.

A recent report by the Center for Strategic and International Studies found that the countries of the Northern Triangle lose more than 3 percent of their GDP to organized crime each year. These TCOs also contribute to outsized homicide rates and undermine governance and security in the region. The bottom line is they are, in some ways, better resourced than state actors, and have proven capable of trafficking guns, money, drugs, and people. It is a major problem.

Given these dynamics, do you feel you have the authority necessary to conduct operations that will effectively disrupt their activity in the long term?

Admiral FALLER. As you mentioned, Senator, they control territory. They are well funded. They have a strength of close to 200,000 when you look across the region, which is on par with all the police and military forces in total. So a powerful enemy to host nations' democracies and direct impact on our homeland defense here in the United States.

Our role is appropriately in support, detection, and monitoring, which means we find out as much as we can, and where we have authorities we pass that off to law enforcement to interdict, and then we work at building our host nation partners' capacity. We are short in intelligence assets. We have less than 1 percent of those assets. We need additional capacity to build our partners so that they can take care of this problem themselves. We have received about the right amount of presence, but it is important we stay on the field.

An example of that is our Joint Task Force-Bravo, which is a small team of about 700 soldiers and airmen and Marines at Soto

Cano, Honduras, that can support law enforcement with lift, with some intelligence, but more importantly can rapidly respond. We saw it this past fall with two back-to-back hurricanes, major hurricanes, and we saved hundreds of lives rapidly. What that does is it builds trust and actually helps us build the case for these partnerships in sustainable security long term.

Senator KELLY. Earlier you stressed, and you did again, that the 1 percent of ISR funding goes to SOUTHCOM. Is that correct?

Admiral FALLER. It is 1 percent of the overall——

Senator KELLY. Of the overall.

Admiral FALLER.—assets and capabilities, Senator.

Senator KELLY. But beyond that, if you wanted to ramp up the effectiveness of disrupting their activity, what other resources would you need?

Admiral FALLER. Senator, we have got to come up with a more effective whole-of-government effort in the United States and really get at mapping these networks. We are doing that but it is nascent. It needs more effort, and then finding the center of gravity, what is key to each organization, and then going at, disrupting, defeating or deterring that. Most of that is law enforcement or judicial or a partner nation effort with SOUTHCOM in support. So we play a critical role but it has got to be more holistically designed in the U.S. We cannot interdict our way out of this.

Senator KELLY. Well, thank you, Admiral. General VanHerck, you mentioned in your testimony the Pathfinder program as a complement to the work done by the Defense Innovation Unit, and also the importance of being able to rapidly field capabilities of the future. As Chair of the Emerging Threats and Capabilities Subcommittee, this is something I have been thinking a lot about.

Are you looking into technologies like artificial intelligence to asset in processing the increasingly large volumes of data that come from our sensor systems?

General VANHERCK. Senator, absolutely. As a matter of fact, Pathfinder does exactly that, uses machine learning and additional capabilities. We must go down that path to operate in a timely and efficient and effective manner.

Senator KELLY. Any sense if our adversaries are doing the same thing, using these technologies?

General VANHERCK. Absolutely, Senator, especially China. They are actively moving forward with artificial intelligence.

Senator KELLY. Then finally, are there any research gaps that you see that you think we should be investing more in?

General VANHERCK. Not specific to research. I would say we must go to space sooner, and space-based capabilities that give us persistent domain awareness. That is where I would be focusing my efforts right now.

Senator KELLY. Okay. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Kelly. Let me recognize Senator Hawley, please.

Senator HAWLEY. Thank you, Mr. Chairman. Thank you, gentlemen, for being here.

General VanHerck, let me start with you, and let me thank you on behalf of all Missourians. It is great to see a fellow Missourian

here, as before, and we are very proud of you and your service, so thank you for being here.

Let's come back to this question of the border. Customs and Border Patrol issued a new batch of operational statistics last week that showed that CBP had encountered more than 100,000 persons attempting entry across the southern border in February. That is about a 200 percent increase over this time last year. They also show that the number of unaccompanied minors attempting to cross our border—that is children—has doubled since January, and the number of family units has more than doubled from January to February.

Give us a sense of how this surge of migrants is helping or hindering the cartels' operations along the border.

General VANHERCK. Senator, I am not aware of necessarily how it hinders or helps. I think it is a symptom of the transnational criminal organization problem that we actually see. As Admiral Faller pointed out, you know, hurricanes, transnational criminal organizations, all the murders, contribute directly to what we are seeing on the border, which includes the migration that you are alluding to.

Senator HAWLEY. I think it is today that the Secretary of Homeland Security said that we are on pace now for a 20-year high in border encounters, a 20-year record, which is pretty astounding considering some of the previous surges we have seen, for instance in 2014. Is it fair to say that we have got a crisis now at the southern border, General?

General VANHERCK. Senator, I will stay out of the politics of whether it is a crisis or not. It is absolutely a homeland defense issue that I am concerned about. I am concerned because it creates opportunities, it creates vulnerabilities, and we have to be postured for each of those. The vulnerabilities that it creates for us is instability, and it creates instability in governance, it creates instabilities in the rule of law, if you will, in neighboring countries. Those will be exploited by countries such as China, Russia, and Iran. So for me it is a Homeland defense and a national security imperative to take a look at that.

Senator HAWLEY. Yeah, I think you are absolutely right. It is also a humanitarian crisis, and I, for one, am not afraid of the word "crisis." I cannot understand why this administration is afraid of the word "crisis." Given the unbelievable humanitarian issues we are seeing at the border and record surge that we are on pace for, I think this administration's inability to admit that their own policies are causing this crisis, and the effect it is having in terms of emboldening the cartels, as you are saying—we know that nobody crosses that southern border without the permission and indeed without the profit of the cartels. Nobody. It is a wholly run criminal enterprise on the southern end of the border, and this administration's inability to grapple with that and do something about it I think is frankly astounding. We are seeing it just day on day on day grow worse and worse.

Let me ask you this, General. We sent billions of dollars in security and money, security assistance, to the Mexican Government over the past 14 years, yet we are seeing, as you just alluded to, escalating violence. Even more drugs headed northward. Those

drugs make their way into every state of the union, including our home state, my home state of Missouri. In your assessment, why has our security assistance to Mexico fallen so short of its security objectives? I mean, why have not we been able to achieve more, considering the prodigious sums that we have invested?

General VANHERCK. First, I would talk to Homeland Security about the problem. It is a law enforcement issue, much of it coming across the border. But I would tell you that the Mexican military, we have an incredibly close partnership and they are doing incredible things down there.

With that being said, I think, as Admiral Faller alluded to, we need a whole-of-government strategy. You know, the arms that are arming these transnational criminal organizations come right here from the United States of America and they flow south. In addition to that, the money that they are creating is being generated by precursors coming from Asia, from China businesses and industry, if you will, that flows in there.

So we have to take a broader approach to get after this, which includes a whole-of-government effort and prioritizing and putting resources to the problem.

Senator HAWLEY. Speaking of China, Admiral, let me come to you in just the little bit of time I have got remaining. You wrote in your testimony that China is seeking to establish global logistics and basing infrastructure in our hemisphere in order to project and sustain military power. What kind of presence do the Chinese forces maintain in the Western Hemisphere today, that we ought to be concerned about?

Admiral FALLER. We have to ask ourselves the question, why is China trying to achieve deep-water ports in the Dominican Republic, Jamaica, El Salvador, Panama—Panama Canal is a key strategic ground—Argentina. They are using economic influence and access to set the conditions for the blue-water navy that they have built.

Senator HAWLEY. Very good. I think we are going to have closed session, aren't we, Mr. Chairman?

Chairman REED. We are planning that, yes.

Senator HAWLEY. Okay. I will have a few more questions for you then. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hawley. Now let me recognize Senator Tuberville.

Senator TUBERVILLE. Thank you, Mr. Chairman. Thank you both for being here today and what you have done for our Homeland and our hemisphere. General, it has been 20 years since we have had an attack on our Homeland. Thank you for that, and everybody at NORTHCOM, the hard work that you have done. I very much agree with you, what you said about outpacing our competitors. I am proud to say that in Alabama we are working to leap ahead in the area of hypersonics. We are working very hard on that, and right now the world's largest and fastest hypersonic wind tunnel is under construction in Huntsville, and I know they are working at a fast pace.

Admiral, I enjoyed our conversation last week and I enjoyed your straight talk. I hope the American people will start getting a sense of urgency. You have your hands full in SOUTHCOM, no doubt

about it. Between transnational criminal organizations and Russia and China you are a busy man.

I do believe, for a moment, that the People's Republic of China (PRC)'s plan in our hemisphere are benign, and I hope that it will not take a Chinese aircraft carrier sailing between Florida and the Bahamas for Americans to wake up to the fact that the Chinese Communist Party (CCP) wish to dominate the world stage. I hope it does not take something like that.

You know, the work that both of you have done for SOUTHCOM and NORTHCOM for our Nation is incredible, important to maintaining our strategic military objectives. Many of the items for both of you in the areas of responsibility strongly impact my home state of Alabama.

Admiral, following the 2018 National Defense Strategy is something I personally believe in a good way to position our forces to thinking towards the future. Can you explain how SOUTHCOM is important to this strategy, and specifically, how would you describe China's strategic objectives in a 5- or 10-year timeline?

Admiral FALLER. Well, I think China seeks economic dominance globally, and their strategic objective is to be the dominant global power, unquestionably, and they will do that in whatever way possible to ensure they have the preeminence of the Communist Party.

In this hemisphere it is across all fronts. It is not just economics. Typically we think about that and we have this fallacy that it is just economics. In the military realm, they have recognized that partners in this hemisphere cannot afford a lot of equipment, so they have upped the game in gifts. When they do offer military equipment it is often through corrupt deals that we cannot compete with.

They have replicated our professional military education. They have ubiquitous IT solutions. They have created engineering and cyber scholarships for military personnel that goes beyond the kind of education and training that we offer in our IMET programs. They have expanded their defense attaché presence. They have at least turned a blind eye to a range of illegal activity, unregulated fishing, unreported fishing, illegal mining and logging. All this is done in an environment fueled by corruption, with no regard, or little regard for human rights, in trying to write their version of the rules of the game.

We have got to stay on the field to compete. We do that well. No one is better than the United States military, Department of Defense. But we have got to work hard and tirelessly, with a sense of urgency that you mentioned, to stay number one in the game and to be the best.

Senator TUBERVILLE. Thank you. General, in regards to our southern border security we hear all the negatives. What do you think has improved the most in the last four years, and then what worries you most looking forward at the southern border?

General VANHERCK. I think the coordination between the Department and the interagency with regards to since 2018, has been probably the biggest improvement. With regards to what worries me most, it is about having domain awareness and the opportunities and vulnerabilities that I already talked about, in our own Western Hemisphere, for state actors such as China, Russia, or

Iran, in our own neighborhood, due to instability, due to ungoverned areas and spaces. So I am significantly concerned about what is going on right here in our own hemisphere and neighborhood.

Senator TUBERVILLE. Do you think we need a wall?

General VANHERCK. I will stay out of the politics of a wall. Border security——

Senator TUBERVILLE. Not politics. Do you think we need one?

General VANHERCK. Border security is national security. We need to ensure that we have policies in place, laws are enforced to ensure that homeland defense does not become a more strategic issue from the borders.

Senator TUBERVILLE. Yeah. One thing I noticed coaching for 40 years and being in education is just the influx of drugs. You know, just take away everybody coming across the border, it is just the influx of drugs are killing our kids. We are losing 60,000 a year to overdose. I mean, that right there should be just an alarm that we have got to have something different.

General VANHERCK. Senator, I agree with you. Actually, I believe the number this past year was approximately 80,000. That is unsatisfactory, and we have to get after that, and that is a symptom of that broader problem that I talked about, transnational criminal organizations, that we can apply priority and resources to, to get after it.

Senator TUBERVILLE. Thank you. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Tuberville. Now let me recognize Senator Blackburn via Webex.

Senator BLACKBURN. Thank you, Mr. Chairman. We so appreciate having the hearing today and getting the update, and Admiral Faller, thank you for the time that you spent with me on the phone last week.

General VanHerck, I want to go back to your statement on Pathfinder, the prototype Pathfinder data analytics project. This is the kind of project that I think attacks two primary concerns with DOD data streams. One is the stovepiping and the other is the need for modernization, and many times I sound like a broken record, if you will, by talking about what has happened with DOD through the years as things have become so stovepiped, and the need for this modernization, because information is power. We all know that. But you have to be able to analyze to share and to make actionable that data.

So my question for you is, how could the Pentagon better utilize some of these emerging technologies such as artificial intelligence, such as the data that we are getting via ISR, and the AI that is used by Pathfinder to really make that information accessible, sharable across platforms and divisions, and actionable when you are looking at how you implement plans for the future, how you change plans based on the information that you are getting?

General VANHERCK. Senator, first I would tell you that I am encouraged by the joint warfighting concept, which also has a supplement for information advantage that will help us move down this.

As far as utilizing the data, I agree, it is a strategic asset, if you will, data. We can utilize it to not only dominate in conflict but to

create deterrence day to day. So, for example, as an operational commander, this data that is available to me, if I utilize it, with applying artificial intelligence and machine learning, and then disseminate it to key decision-makers, I am able to position forces ahead of a competitor or adversary's actions, which creates deterrence. It is deterrence by denial.

But we must go faster in the Department. Thirty years ago, the Department led the way with innovations. Today, I think that paradigm has flip-flopped to where much of industry and Silicon Valley is leading the way forward, especially with regard to data, and so we need to take a look at our acquisition processes, our modernization processes, and potentially flip the paradigm to stay competitive.

Senator BLACKBURN. Do you feel like that the Pentagon itself is flexible and agile enough to make these changes, utilize this data, make a change in a game plan immediately, and apply what they are learning from that intel?

General VANHERCK. I believe that the Pentagon has proven, over history, to be incredibly successful in adapting when we need to. It has not always been as fast, and that is one of the reasons I talk about it. We have to have some culture change.

I would also tell you this may require some looks at policy. It may even require some looks at law, to utilize data differently as we go forward. What we do not want to do is create capabilities that we can utilize, and the policies that we have and the laws that we have do not allow us to be successful with the data and the information that is available.

Senator BLACKBURN. Thank you for that. I may come back to you for some specifics.

Admiral Faller, we have talked a lot about China this morning and the transnational organizations. But as you look at dealing with China, whether it is through fentanyl and drugs or Belt and Road or great power competition, what do you not have access to in SOUTHCOM that you need?

Admiral FALLER. As we have discussed, China is a global threat and we have got to address that challenge holistically across the United States Government. In the SOUTHCOM AOR we have to be appropriately postured, so we need the right footprint of forces, working with our embassies and our interagency team to stay engage with our partners. So additional locations for presence, not permanent, but access is really critical moving forward.

Senator BLACKBURN. So it is the teamwork concept with our allies. Correct?

Admiral FALLER. Correct, Senator.

Senator BLACKBURN. Okay. Thank you all for that. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator, very much, and gentlemen, thank you for your testimony and your service to the Nation. Let me remind my colleagues that upon adjournment we will immediately move to SVC–217 for a classified briefing by Admiral Faller about increasing Chinese influence in the SOUTHCOM area. There also is a vote scheduled for noon, so we will accomplish both. I will see you shortly over there, Admiral Faller, and General, thank you for your distinguished service at NORTHCOM.

No further business before the Committee, I will adjourn.
[Whereupon, at 11:58 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

WOMEN, PEACE AND SECURITY (WPS)

1. Senator SHAHEEN. Admiral Faller, as your command continues the promotion of gender inclusion with allies and partner nations, can you share the overall impact you have witnessed across the region?

Admiral FALLER. As we have started holding gender-focused roundtables and events in Colombia, Honduras, and El Salvador, and numerous other countries, leaders from across the region have seen how powerful it is to integrate gender perspectives and are requesting that we collaborate and assist them with gender integration. We have seen more women fulfilling key roles and positions and they have achieved greater presence in decision-making spaces as a result. Notably, we have seen more female International Military Education and Training (IMET) graduates taking leadership roles within their countries.

2. Senator SHAHEEN. Admiral Faller, how has implementation of the program contributed to the advancement of U.S. Southern Command's (SOUTHCOM) long term mission within the region?

Admiral FALLER. Part of our mission within the region is to work with our partner nations to build professional military and security forces that are legitimate in the eyes of their populations. This includes fostering respect for human rights, the rule of law, and the importance of integrating all perspectives—to include NCOs and women. A legitimate and professional force will be resilient to any threats it faces—transnational criminal organizations, corruption, violence, and meddling from external state and non-state actors.

3. Senator SHAHEEN. Admiral Faller, what gender programs have you seen be successful, and what has been learned from those successes?

Admiral FALLER. In addition to creating standalone WPS events, SOUTHCOM demonstrates its commitment to WPS by ensuring it is part of every key leader engagement in the region. We seek ways to collaborate with, and assist, partners in their own efforts to advance WPS, such as our support to Colombia as they work to meet NATO WPS standards.

One key success that stands out is our new "Breaking Barriers" podcast, hosted by our Civilian Deputy to the Commander, Ambassador Jean Manes. The purpose of this podcast is to amplify WPS principles and recognize women leaders in defense and security forces across our Hemisphere. The most senior woman in the Trinidad and Tobago Defense Force, Lieutenant Colonel Jozette McLean was the first guest featured on the podcast. In addition to the regional partners, SOUTHCOM has strengthened academic partnerships as well. In collaboration with the William J. Perry Center, SOUTHCOM published a book called "Twenty Years, Twenty Stories: Women, Peace, and Security in the Western Hemisphere," which included essays from 25 authors from 13 countries in our hemisphere. Themes from the book included cyber security, peacekeeping, and humanitarian assistance and disaster relief. I have personally distributed this book to Ministers and Chiefs of Defense across the region. SOUTHCOM uses all social media platforms to regularly highlight the achievements and contributions of women across the Western Hemisphere, part of the overall effort to "make the invisible, visible." We are also working toward increasing the number of women participating in the IMET program and in our multilateral exercises.

Breaking Barriers Podcast: https://www.southcom.mil/Lines-of-Effort/Strengthen-Partnerships/SOUTHCOMs-Women-Peace-and-Security-WPS–Program/?audioid=65826

4. Senator SHAHEEN. Admiral Faller and General VanHerck, WPS is intended to not only foster foreign and defense policies that proscribe the incorporation of women for partner countries, but it is also designed to ensure that our own systems, chains of command and decision-making processes include gender-oriented considerations. The 2021 defense appropriations act included funding for full-time gender advisors across the combatant commands (COCOM). Can you discuss how you are utilizing those funds?

Admiral FALLER. SOUTHCOM elevated this program and made it a strategic priority under the leadership of AMB Jean Manes, Civilian Deputy to the Commander. We allocated a field grade officer to lead the program and a contractor, who is a lawyer, to assist with its implementation.

SOUTHCOM has three WPS priorities for fiscal year 2021: 1) Train our force; 2) Increase women participation in IMET; and 3) Integrate WPS into exercises. For example, in January 2021, WPS was injected into Exercise MERCURY conducted by JTF–Bravo and the Panamanian National Border Service. WPS is also being integrated into exercises TRADEWINDS and UNITAS, hosted by Guyana and Peru, respectively.

SOUTHCOM has received $250,000 for fiscal year 2021. This funding is directed to pay for one full-time gender advisor as well as the development of training and strategic messaging initiatives.

General VANHERCK. Funding for Women, Peace, and Security (WPS) in fiscal year 2021 enabled USNORTHCOM to hire a full-time contract WPS subject matter expert, while also supporting the training of a network of military and civilian gender advisors who are responsible for Command implementation of the WPS Act and DOD WPS Strategic Framework and Implementation Plan. In addition to these efforts, USNORTHCOM utilized fiscal year 2021 WPS funds to conduct a WPS-focused analysis of USNORTHCOM mission sets, sponsor WPS events tied to USNORTHCOM missions, promote training and awareness regarding how WPS informed the USNORTHCOM responses to COVID–19, and develop WPS training content in collaboration with our partners in Canada and Mexico. USNORTHCOM is also proud to have partnered with eCornell University and USSTRATCOM on training that resulted in over 20 military and civilian personnel receiving a certificate in Gender and Women in Leadership. Finally, the funding is providing the opportunity for USNORTHCOM to begin WPS data collection and reporting.

5. Senator SHAHEEN. General VanHerck, how has U.S. Northern Command (NORTHCOM) incorporated gender advisors into the structure of decision-making and the chain of command?

General VANHERCK. In December 2020, I signed WPS implementation guidance for USNORTHCOM that established a gender network of 20+ formally appointed representatives from USNORTHCOM directorates and component commands. These advisors, called Gender Focal Points, also include a NORAD volunteer, and are trained and empowered to advance implementation of WPS principles and approaches in all areas and functions. In March 2021, USNORTHCOM's WPS leadership team, with support of the Joint Staff, delivered the Level 100 Operationalizing WPS course throughout our USNORTHCOM WPS network. This network convenes monthly to discuss initiatives, identify opportunities and requirements, and also to track and implement WPS guidance; it provides progress reports to me semi-annually.

COUNTER-NARCOTICS AND TRANSNATIONAL CRIMINAL ORGANIZATIONS (TCO)

6. Senator SHAHEEN. Admiral Faller and General VanHerck, given the scope and persistent nature of the drug trafficking threat, how are your combatant commands prioritizing its limited enforcement resources to effectively target the trafficking activity that may be most detrimental to U.S. interests?

Admiral FALLER. SOUTHCOM works hard to make sure that 1+1=3. This means we look for innovative approaches to acquire information and intelligence on transnational criminal organization (TCO) activities, applying advanced analytics, artificial intelligence and machine learning techniques. We then share that information as quickly as possible with our strong and willing partners—both U.S. Law Enforcement Agencies and partner nations—to target the greatest threats. We also focus our limited assets in areas where the preponderance of drugs are flowing toward the US, currently the Eastern Pacific. We know that we will never be able to interdict our way out of the drug crisis, so we also focus on understanding the TCOs themselves so we may work with law enforcement to dismantle the organizations that will traffic in any commodity to turn a profit at the expense of American lives.

General VANHERCK. In a support role to federal partners, USNORTHCOM prioritizes resources based on law enforcement partner requests and assessments of significant threats. At this time, Mexican cartels are increasingly focused on trafficking synthetic drugs such as fentanyl that are fueling record numbers of drug overdoses in the United States. In response, I directed our Joint Task Force North and Special Operations Command North to support law enforcement and regional partners by identifying new approaches, in coordination with law enforcement, to

reduce the trafficking of illicit synthetic drugs. To fully get after the resourcing process, I believe the United States needs a whole-of-government strategy with directed prioritization to enable optimum resource application of limited resources.

7. Senator SHAHEEN. Admiral Faller and General VanHerck, can you discuss how your combatant command coordinates with the Department of Homeland Security (DHS), civil law enforcement, State governments and other Federal Agencies to respond to an evolving drug threat that requires aggressive enforcement to interdict illicit narcotics and root out TCOs?

Admiral FALLER. USSOUTHCOM works very closely with the interagency on the counternarcotic mission, as this is a true team effort. DHS, and specifically the US Coast Guard (USCG), working with Joint Interagency Task Force-South (JIATF–S), is our primary law enforcement partner for drug interdictions at sea. The USCG regularly provides USSOUTHCOM with surface and air assets for this mission, with their medium endurance and fast response cutters being critical to this fight. In return, USSOUTHCOM provides regular support to USCG movements and Panama Canal transits through designated authorities. We have increased our support to US and partner nation law enforcement by sharing information and intelligence to help develop law enforcement target packages aimed at dismantling the TCOs and their leadership. We supported the State Department Bureau of International Narcotics and Law Enforcement (INL) Affairs with the movement of 13 helicopters to Colombia and Peru, moved 80 MTs of cocaine from Costa Rica to a destruction site in Florida in support of the Drug Enforcement Agency, airlifted four INL interdiction boats for delivery to Guatemala, and moved the Customs and Boarder Protection Unmanned Aircraft System into Panama to support regional counter narcotics, detection and monitoring efforts. We also continue to focus on efforts to assess the financial underpinnings of national security threats in the region and have deepened our counter threat finance support with the Department of Treasury Office of Foreign Assets Control (OFAC) with intelligence analysis as they work to impose sanctions on drug kingpins.

While we must continue to prevent as many drugs from entering our Homeland as possible, we must also look toward a whole-of-society approach to address this scourge. For our part, USSOUTHCOM can directly impact the supply side by continuing to work with our partners to stop the TCOs who will traffic in any commodity to turn a profit. It's not just about stopping the flow of drugs, we must go after their logistics chains, their profits, and all sources of their power.

General VANHERCK. At the national level, I engage with my DHS and law enforcement (LE) counterparts through regular personal meetings and through semiannual meetings of The Interdiction Committee (TIC). This senior interagency forum provides opportunities to discuss and resolve issues related to drug interdiction efforts from an interdepartmental perspective. At the Command level, USNORTHCOM hosts liaison officers (LNOs) at USNORTHCOM headquarters and also embeds LNOs across the interagency community. These open lines of communication assure my team understands DHS and LE requirements, and that DHS and LE in turn fully understand the support UNORTHCOM can provide. It is only through a whole-of-government approach that identifies transnational criminal organizations (TCOs) as a priority and National Security imperative that the United States can successfully counter TCOs and their illicit activities.

8. Senator SHAHEEN. Admiral Faller and General VanHerck, despite decades of interdiction and diligent enforcement efforts by military forces and Federal Agencies, the drug threat has gotten worse not better. Do you believe we need any new and innovative capabilities and strategies to address this problem?

Admiral FALLER. As I stated earlier, we will never interdict our way out of the drug crisis. TCOs are constantly innovating and changing their tactics to avoid disruption. Theirs is a lucrative business with almost limitless resources. TCOs make approximately $90 billion a year so we must continue to innovate—looking for nontraditional ways to crush their money. Capabilities like our operation Mortal Mint (artificial intelligence/machine learning program for foreign adversary financial targeting) that focuses on following the money, Asymmetric Target Acquisition Center that looks to harness publicly available foreign information and Technical Network Analytics Cell that uses data analytics for actionable intelligence are low-cost, high-return activities in which we should be investing more.

General VANHERCK. Yes. I believe countering transnational criminal organization (TCO) activities and their influence is a national security imperative because of the impact on U.S. citizens and the pressures they create in partner nations, as well as the opportunities they create for exploitation by our strategic competitors. TCOs continually adapt their tactics, techniques, and procedures, which undermine U.S.

Government and USNORTHCOM efforts to degrade them, and I believe the U.S. Government must become more agile and adaptable to meet this challenge. Existing tools and applied resources are not enough, and it is increasingly necessary to leverage emerging technologies and non-traditional partners, such as the U.S. Postal Inspections Service to track and identify illicit drug shipments, as well as to leverage local law enforcement interdiction of precursor materials or supplies originating in the United States. We must have unity of effort across defense, law enforcement, and policy organizations to effectively address the TCO threat to the Homeland.

I also believe the United States needs a whole-of-government strategy with directed prioritization to enable optimum resource application of limited resources. This will enable the Federal Government to go after the TCOs and their network enablers that are the true source of the problem, rather than a focus on drugs, human trafficking, and migration challenges that are just symptoms.

9. Senator SHAHEEN. General VanHerck, similarly, do you think there is an opportunity to partner more closely with the Federal Bureau of Investigation and the Department of Justice broadly to track the money that funds these operations?

General VANHERCK. Yes. Closer partnerships with the FBI and other federal law enforcement agencies are critical to defending our Homeland, but that is only part of the answer. I view countering transnational criminal organizations (TCOs) from a homeland defense perspective and also as a national security imperative, and I believe a whole-of-government strategy addressing illicit TCO funds and the TCO activities generating those funds is absolutely essential. This effort requires a single lead organization that can bring the whole-of-government together to prioritize and manage requisite resources to tackle Transnational Organized Crime, as USNORTHCOM and the Department of Defense in a support role cannot do this alone. I am encouraged by the plan to establish the U.S. Council on Transnational Organized Crime (USCTOC) to streamline and align law enforcement requests with available DOD support. USCTOC, once formalized, could provide a whole-of-government approach to denying criminal organizations the proceeds of their illicit activities while simultaneously helping to counter their activities and influence.

10. Senator SHAHEEN. Admiral Faller, what are some of the capabilities or authorities that you think would allow your combatant command in partnership with DHS and others to stem the flow of illicit narcotics?

Admiral FALLER. SOUTHCOM is pursuing non-traditional approaches to go after TCOs' money and logistics. Working closely with our partners in this hemisphere is also critical to stemming the flow of illicit narcotics—both to prevent them from ever beginning the journey north, as well as to stop them once they're already on the high seas. SOUTHCOM leverages the security cooperation program to increase the capacity of our partner nations to operate alongside us and counter our shared threats. Our significant security cooperation initiatives focus on developing critical functional areas that include improving maritime domain awareness and information sharing; increasing interoperability between partner nations and U.S. Forces, and building institutional capacity through professional military education. Programs like those commonly referred to as section 333 are key to increasing our partners' capacity and capability, making them force multipliers in our counternarcotic efforts and integrating them seamlessly into our operations. As an example of how we can successfully integrate our partners into our operations, at the end of March, a United States maritime patrol aircraft detected a suspect vessel 15 nautical miles from the Costa Rican and Panamanian border. JIATF–S notified the Costa Rican and Panamanian Coast Guard, who then launched maritime vessels in pursuit. Panamanian forces intercepted the vessel with Costa Rican support. Panama seized 900 kgs of cocaine and detained 3 persons.

While one might expect to see a decrease in partner nation participation in counternarcotic operations due to increased domestic demands created by COVID–19, our partners have stayed in the drug fight with us. The modest increase in DOD resources and assets during our enhanced CN operations last year demonstrated US leadership in the region and our partners responded to that by increasing their presence as well. Key partners like Colombia, Costa Rica, Panama, Guatemala, El Salvador, and others have been involved in 60% of drug disruptions during the operation.

In order to ensure our trusted partners in the region are able to continue to support to our enduring Counter Transnational Criminal Operation, I believe we will need to provide additional economic support to those countries that are still willing to conduct counter-narcotics operations while experiencing economic pressures imposed by COVID–19. In order to stay on pace with China and other authoritarian regimes who are increasing their investments in the region, we will look to strength-

en our already solid relationships by providing resources to the security sectors, enabling them to conduct all-domain operations with the equipment (Boston Whalers, Maritime Patrol Aircraft, Midnight Express boats, helicopters) that have been donated or procured through the United States Foreign Military Finance system.

RUSSIAN INFLUENCE:

11. Senator SHAHEEN. Admiral Faller, Russia received a positive review of their vaccine by Britain's leading medical journal, "The Lancet" and Russia is a provider of COVID–19 "SPUTNIK V" vaccines to Latin America. Six countries across the region—Argentina, Bolivia, Mexico, Nicaragua, Paraguay, and Venezuela—have authorized use of the Sputnik V vaccine and others are considering authorization requests. What consequences does this have as we approach a post-pandemic world, and how does it impact our overall influence in the region?

Admiral FALLER. We are rightly focused on getting our own population vaccinated to the greatest extent possible. However, once we offer all Americans the vaccine, we, too, should offer our partners help, because it's the right thing to do. Countries like Russia and China offer vaccines to gain advantage. Since our partners are desperate to protect their populations against COVID, they will turn to Russia and China for help and perhaps become beholden to them once the pandemic is behind us. If we can provide vaccines, we can prevent Russia and China from gaining undue influence here in our hemisphere. This is about being a good neighbor.

12. Senator SHAHEEN. General VanHerck, you stated that, "Russia presents a persistent, proximate threat to the United States and Canada and remains the most acute challenge to our Homeland defense mission." I am in agreement with that statement. You also shared that, "Last year, NORAD responded to more Russian military flights off the coast of Alaska than we've seen in any year since the end of the Cold War." Are we postured with the necessary capabilities to anticipate and effectively defend against Russian hostilities?

General VANHERCK. I am concerned about my ability to defend the Homeland as our competitors continue to develop capabilities to hold the Homeland at risk. Specifically, during crisis or conflict, USNORTHCOM and NORAD will require significant additional capabilities to defend North America and our Homeland. Many of these capabilities are the same as those that would be sought out by other combatant commanders for operations overseas, creating an internal competition for resources within the Department. Additionally, as Russian and other competitors' capabilities grow, it will be increasingly important to establish global all-domain awareness and increase our sustainable presence in the Arctic. These capabilities will allow us to achieve information dominance and decision superiority to provide leaders at all levels with the options, time and space necessary to deter competitors in competition, de-escalate in crisis, and if necessary, defeat in conflict.

13. Senator SHAHEEN. General VanHerck, have our defensive capabilities kept pace with the threat? If not, what are the primary concerns with our legacy warning and assessment systems and defensive capabilities?

General VANHERCK. No. The Department's warning, assessment, and conventional defense systems have not kept pace with the threat. In particular, legacy systems are challenged by competitor advancements in systems designed to avoid detection, including low radar cross section, long-range cruise missiles and bombers, and a new generation of very quiet submarines. While nuclear deterrence remains the cornerstone of homeland defense, the challenges posed by competitor conventional advances have created a growing gap between U.S. nuclear and conventional deterrent capabilities that could be exploited by our competitors to hold the Homeland at risk below the threshold of nuclear war.

Investments in persistent homeland defense and deterrent capabilities are needed to close the gap between the United States' nuclear and conventional capabilities, which will force competitors to question the efficacy of their strategy, and ultimately to change their calculus. DOD homeland defense investments must begin with improving domain awareness sensors in the approaches to North America from below the surface of the ocean to space, and in the cyber domain.

Investments must then continue with development of artificial intelligence networks enabled by machine learning to fuse data from military, intelligence, partner nation, and commercial sources in order to create information dominance and provide awareness of competitor intent and action much sooner than today. Through all-domain awareness and information dominance, military commanders and senior civilian decision makers will gain decision space and the ability to employ a greater

range of options to deter in competition, de-escalate in crisis, and deny and defeat in conflict.

While USNORTHCOM and NORAD are responsible for defending certain non-DOD assets and infrastructure in the United States, designating and prioritizing potential targets that must be defended with kinetic systems must be determined through an interagency process that is not solely a DOD responsibility. To ensure that our commands' defensive planning accurately reflects national priorities, USNORTHCOM and NORAD have requested Department policy guidance and are seeking unity of effort within the interagency regarding vulnerable critical assets. The commands are working to ensure that those defensive requirements are appropriately resourced to ensure continuity of operations and a deterrent effect.

NORTH WARNING RADAR SYSTEM

14. Senator SHAHEEN. General VanHerck, during your confirmation hearing last July we discussed the importance of new technologies that can improve our military's ability to operate in cold weather environments. A few years ago, I had the opportunity to visit with then NORTHCOM commander General Lori Robinson in Colorado and I was briefed on the North Warning System. I was pleased that section 1651 of the Fiscal Year 2021 National Defense Authorization Act (NDAA) requires a report to Congress that includes an assessment of the North Warning System, including the operational integrity of its infrastructure and of its current technology compared with technology deemed necessary, as well as a plan for mitigating vulnerabilities and modernizing the capabilities of the North Warning System. Can you speak to the importance of the North Warning System in the defense of the United States and the need to develop modernization plans outlined in the report required by the NDAA?

General VANHERCK. NORAD is the United States and Canadian bi-national command charged with the missions of aerospace warning, aerospace control, and maritime warning for North America. These missions require air and maritime domain awareness to detect and track potential air and maritime threats, including Russian long-range bombers and cruise missiles. NORAD's legacy North Warning System provides radar coverage of the northern approaches to North America in support of aerospace warning and aerospace control missions. However, the current architecture is a Cold War-era design with radars that are limited to line-of-sight range coverage with minimal capability to detect or track small radar cross section, low-altitude, long-range maneuverable weapons and their associated delivery platforms.

A modernization plan for all approaches to North America is critical to achieve all-domain awareness against the advanced threats we face today. NORAD is aggressively working within the DOD, along with Canada and other partners, to assess and identify new capabilities to provide domain awareness. Capabilities include over-the-horizon-radars that may complement terrestrial, airborne, and space-based technologies to improve early warning capabilities against current and future threats. NORAD looks forward to continuing efforts to achieve the modernization required in support of NORAD missions.

15. Senator SHAHEEN. General VanHerck, can you discus the need to utilize new technologies that can operate more efficiently and cost effectively in cold environments, such as new composite radomes, which are protective covers that house the actual radars?

General VANHERCK. NORAD requires continuous domain awareness in support of our aerospace warning, aerospace control, and maritime warning missions. The current North Warning System utilizes radar surveillance and has radomes designed to withstand harsh climates that are regularly inspected and evaluated for integrity and necessary repairs to meet mission requirements. Cold environments provide unique radome challenges and NORAD strongly supports ongoing industry efforts to develop new compounds for increased sustainability and resiliency of legacy North Warning System radars and for the development of future capabilities.

COUNTERING RUSSIAN AND CHINA INFLUENCE:

16. Senator SHAHEEN. Admiral Faller, your maps of Russian and Chinese influence in Latin America asserts that Moscow is executing military training assistance, port calls, strategic operations and engagements with head of states in regional countries. Is United States influence across the Latin American region increasing or declining in comparison to previous years, in particular prior to COVID–19?

Admiral FALLER. Although the United States still maintains a stronger relationship with most nations in the region than China and Russia, some metrics show US influence waning. For example, US trade with the region declined from a high

point of 354 billion in 2012 to $270 billion in 2019. Conversely, trade between China and Latin America was up from $188 billion in 2015 to $254 billion in 2019. Overall, I assess our strategic advantage and influence in this region is eroding.

17. Senator SHAHEEN. Admiral Faller, what strategic actions are being taken to not only deter Russian and Chinese influence across the region, but also enhance United States influence?

Admiral FALLER. United States leadership, presence, and time are absolutely critical in countering Russian and Chinese influence and strengthening our own relationships in the region. I have personally been engaging with regional leaders, emphasizing the risk of dealing with countries who do not share like values and principles. To maintain connectivity in the COVID environment, our Command has been resourceful using methods commonly available such as video teleconferencing and even instant messaging to reinforce our regional relationships. Now that vaccinations are becoming more common and testing is readily available, I've traveled more in the AOR visiting partners and seeing for myself the positive impact we are having. SOUTHCOM has used the Humanitarian Assistance Program to provide donations to help fill critically needed shortages with PPE, ventilators and field hospitals at the speed of relevance to our partners. To date, we have executed 498 projects, in 28 countries, totaling $72 million. This is saving lives and winning hearts and minds.

SOUTHCOM's joint exercise program enables the U.S. to maintain access, presence, and influence in the region, not just during the execution of these events but throughout the entire planning process that spans 12 to 18 months. Our exercises are critical in building readiness, interoperability, domain awareness, and enhance our ability to share information and intelligence with our partners. Over the last 6 months we have been able to demonstrate that we can operate in a COVID environment through the execution of our UNITAS, CENTAM GUARDIAN, and RESOLUTE SENTINEL exercises. The commitment to planning and executing in this challenging environment is a testament to the resolve and resiliency of the U.S. and our partners. Over the next few months we plan to fully execute our remaining exercises to include TRADEWINDS, PANAMAX, FUERZAS COMANDO, FUSED RESPONSE, and second UNITAS exercise. These events will train thousands of United States, Partner Nation forces and regional organizations sending a strategic message to Russia and China that we stand ready with our partners even during the most difficult of times.

18. Senator SHAHEEN. Admiral Faller, please provide an updated map of United States influence in Latin America noting humanitarian assistance, military training assistance, medical diplomacy, WPS Engagement, port calls and visits to head of state.

Admiral FALLER. Below is an updated map of U.S. influence focused on recent humanitarian assistance to the region to include COVID response; military education and training; equipment sales and transfers; and women, peace, and security engagements. Because port calls can many times involve minimal engagement with the host nation, we have included information on assistance provided by hospital ships, to include the USNS *Comfort.* These naval deployments have made a significant impact in the nations visited. We have also include security agreements as an indication of the level of cooperation and partnership with the nations of this hemisphere.



QUESTIONS SUBMITTED BY SENATOR RICHARD BLUMENTHAL

DOD ROLE AT THE SOUTHERN BORDER

19. Senator BLUMENTHAL. General VanHerck, why do we still have active duty military personnel and National Guardsmen deployed to our Southern Border?

General VANHERCK. DOD personnel are deployed to the southwest border in fiscal year 2021 in response to a request from the Secretary of Homeland Security that was subsequently approved by Secretary of Defense authorization for up to 4,000 total DOD personnel on the border. All are currently National Guard members in title 10 status providing support to the Department of Homeland Security (DHS) and U.S Customs and Border Protection's (CBP) homeland security mission, enabling DHS and CBP personnel to focus efforts on law enforcement.

20. Senator BLUMENTHAL. General VanHerck, what is the criteria for withdrawal of troops from the border?

General VANHERCK. I defer to the Secretary of Defense regarding criteria for ending the current title 10 DOD mission on the southwest border.

21. Senator BLUMENTHAL. General VanHerck, what feedback are you getting from subordinate Commanders on the impact of border deployments on mission readiness and concurrent deployment commitments?

General VANHERCK. Service assessments indicate a slight reduction in unit readiness at the tactical level. This is likely due to individual members of some units operating below unit level across a large geographic area, whereas previously most units were able to deploy together. Unfortunately, the unique requirements for southwest border support somewhat limit the opportunity for units to operate together and conduct recurring training on unit-level mission essential tasks.

FOREIGN INFLUENCE

22. Senator BLUMENTHAL. Admiral Faller and General VanHerck, in both of your testimonies, you note that China and Russia are increasingly competing with the United States for influence in your areas of operation. Do you believe military partnership programs can be a cost-effective tool to counter the spread of Russian and Chinese ideology and influence?

Admiral FALLER. I absolutely do believe military partnership programs can be a cost-effective tool to counter Russian and Chinese in the region. I believe that the best way to counter Chinese and Russian influence is to always model what "right" looks like and strive to be a good partner. That means working with partner nation military and security forces to build their institutional capacity and resilience against all threats, to include external malign influence. At USSOUTHCOM, we

strive to be the partner of choice (or trusted partner) for the nations of the Western Hemisphere. Security cooperation and assistance programs are our main battery in that effort. Programs like those commonly referred to as section 333 aimed at building partner nation capacity enable us to train and equip our partners to counter regional and external threats, to include cyber and disinformation threats that are increasingly becoming a concern for our partners, especially those with upcoming elections. International Military Education and Training (IMET) is also a critical program for building and strengthening long-term military partnerships. When a foreign officer or NCO attends a U.S. school, they learn more than just military strategy; they learn our democratic values and take that back to their countries. These programs are all low-cost, high-return tools that strengthen our partners' democratic institutions and ability to counter malign influence and ideology.

General VANHERCK. Yes. I believe effective military partnership programs are a low-cost and highly effective means to counter the growing influence of global competitors. I regularly engage with the military leadership of Canada, Mexico and The Bahamas to advance shared military objectives. Our commands also conduct military exercises with allies and partners in the USNORTHCOM area of responsibility and NORAD area of operations to enhance interoperability, hone common operational skills, and send a strong signal to our competitors regarding the strength and durability of the relationships we have with our closest neighbors.

The United States Professional Military Education (PME) program is another effective tool for countering Russian and Chinese ideology and influence in the region by integrating future senior international leaders into United States Service war colleges, staff colleges, and senior enlisted courses. Most courses run for an entire academic year, thus creating lasting friendships between future senior military leaders and fostering greater mutual understanding of participating countries and cultures. International PME programs also permit our partners to bring their families to the United States, where they often form strong bonds with both military families and within the local community. These programs pay lasting dividends and allow us to demonstrate our values, professionalism, and commitment to our allies and partners.

23. Senator BLUMENTHAL. Admiral Faller and General VanHerck, what can Congress do to support your efforts to compete with Russia and China in the realm of military exchange and education programs?

Admiral FALLER. Security cooperation and assistance programs truly are the key to building military partnerships and strengthening our partners against external influence. Increasing support to these programs in the Western Hemisphere—the front line of competition—would be critical to preserving our competitive advantage. A little goes a long way in this region. Modest investments in section 333 and IMET, as well as in multilateral exercises and training would pay dividends in our efforts to compete with Russia and China.

General VANHERCK. Congress can continue to support programs and funding associated with military exchange and education programs as we balance priorities in this new era of strategic competition. As competitors seek to increase their influence globally, especially in the western hemisphere, USNORTHCOM's theater security cooperation (TSC) mission plays a key role in ensuring that the United States remains the partner of choice for nations in our area of responsibility. Military exchange and education programs supplement our TSC efforts by fostering personal relationships between international participants, exposing attendees to outside cultures and perspectives, and demonstrating the widespread national benefits of inclusive, rules-based societies and governments. These programs are crucial to maintaining trusted relationships and demonstrating the United States' commitment to regional safety, security, and cooperation. Continued congressional support is vital to efforts to deny competitors influence and access in the approaches to our Homeland.

RUSSIAN AGGRESSION

24. Senator BLUMENTHAL. General VanHerck, in your posture statement you stated that North American Aerospace Defense Command (NORAD) has responded to more Russian military flights off the coast of Alaska than we've seen in any year since the end of the Cold War—can you speak to the nature of these flights and the associated responses?

General VANHERCK. In the last year, Russian military flights off the coast of Alaska involved heavy bombers, anti-submarine aircraft, and intelligence assets. The Russians frequently penetrate the Alaskan Air Defense Identification Zone and they have demonstrated increasingly integrated and sophisticated operational tactics in-

cluding multi-axis approaches. NORAD forces consisting of ground-based radars and aviation assets—including fighters, tankers, and Airborne Warning and Control Systems—detect, monitor, identify, and intercept these aircraft at the time and place of our choosing in accordance with my stated guidance.

25. Senator BLUMENTHAL. General VanHerck, what do you think the strategic advantage is for Russia's growing investment in the Arctic?

General VANHERCK. More than 20 percent of Russia's gross domestic product is derived from the Arctic, making the region of critical strategic importance to Russian leaders. Diminishing Arctic sea ice could lead to faster and more efficient shipping routes; access to the region's largely untapped hydrocarbon, mineral, and protein resources; and greater operational maneuver space for maritime forces. As such, Russia continues to invest in capabilities and infrastructure—both defensive and offensive in nature—to secure its 13,000-nautical mile Arctic coastline and conduct influence activities throughout the region, including potential military operations directed toward North America.

The ability to regulate activity in the Arctic has long been a challenge given its extreme environment and the lack of established rules and adopted norms for the region. Russian and Chinese activities in the Arctic, including the recent increase in Russian military aircraft incursions into the United States and Canadian Air Defense Identification Zones, Russian bomber missions into the Arctic Ocean, Russian maritime exercises that have included operations within the United States Exclusive Economic Zone, and deployment of Chinese icebreakers to the Arctic Ocean—are a concerted effort to shift these norms and patterns of behavior to demonstrate Russian and Chinese intent to compete in the northern approaches to North America.

On 21 May 2021, Russia will assume the Chair of the Arctic Council, an official multi-lateral body that attempts to establish a set of international measures and standards in the Arctic region. Russia's continued military build-up in the northern region, its intent to claim a considerable expanse of the Arctic seabed, and its desire to increase the influence of observer states like China with the Arctic Council, leaves me very concerned that Russia will seek to introduce security initiatives via the Arctic Council and potentially drive a wedge between Arctic allies and partners. Such actions could alter the strategic balance in the region and shift the advantage toward our strategic competitors.

26. Senator BLUMENTHAL. General VanHerck, what would you recommend that the United States be doing to support NATO [North Atlantic Treaty Organization] activity in the Arctic?

General VANHERCK. The asymmetric advantage the United States has over Russia and China is our network of allies, partners, and like-minded nations. NATO operations in the Arctic are critical to demonstrating the alliance's capability and commitment to deter and respond to regional threats. USNORTHCOM and NORAD are fully integrated with NATO member operations, activities, and investments in this vital region. One of the major tenets of my recently published USNORTHCOM and NORAD Strategy is that our commands strengthen Arctic partnerships to include NATO members, interagency partners, and Indigenous peoples and governments by building Arctic awareness; enhancing Arctic operations, capabilities and infrastructure; and ensuring a credible defense presence. Improved interoperability and timely information sharing with allies and partners is critical to establishing global all-domain awareness, information dominance, and decision superiority. As such, USNORTHCOM and NORAD will continue to partner with NATO in pursuit of a global approach to an integrated and layered homeland defense that starts abroad. USNORTHCOM and NORAD also routinely collaborate with NATO members on strategic messaging to ensure alliance intent is clear and to reduce the likelihood of misunderstanding or miscalculation.

CYBER

27. Senator BLUMENTHAL. General VanHerck, how does NORTHCOM and NORAD see itself in our common mission to defend the Homeland against cyber security threats?

General VANHERCK. USNORTHCOM is the designated Department lead for defense support of civil authorities. I see the primary common mission for USNORTHCOM as working with the whole-of-government to determine priorities for critical infrastructure defense and, if needed, responding in support of civil authorities in support of crisis or contingency management. On a daily basis, USNORTHCOM's two allocated Cyber Protection Teams defend USNORTHCOM

and NORAD cyber terrain and mission systems against cyber threats to provide mission assurance for both Commands, and also closely coordinate with USCYBERCOM and the Canadian Forces for additional support if required.

28. Senator BLUMENTHAL. General VanHerck, how does the DOD ensure that our geographic COCOMs, especially NORTHCOM, are coordinated on cyber security threats and defending COCOM infrastructure?

General VANHERCK. USNORTHCOM and USCYBERCOM coordinate daily on potential cybersecurity threats to ensure that we are at the ready to defend DOD and United States infrastructure whenever needed. In addition, USNORTHCOM has USCYBERCOM personnel embedded in our headquarters to further align our collective cyber threat response actions. USCYBERCOM's Cyberspace Operations Integrated Planning Element is resident in our headquarters and synchronizes with USCYBERCOM multiple times daily on cyber threats to aid in the defense of USNORTHCOM cyber terrain and command and control infrastructure. Finally, USCYBERCOM facilitates cyber threat discussions several times a week with all of the combatant commands to ensure cyber threat visibility.

29. Senator BLUMENTHAL. General VanHerck, you stated in your posture statement that you were deeply concerned about the development of Chinese capability in transitioning from cyber exploitation to cyber-attack—what do you think is the relative threat level of additional Chinese cyber-attacks on the United States Homeland?

General VANHERCK. We have seen the impact cyber-attacks can have on our domestic critical infrastructure in crisis or conflict, and I believe the threat level of additional cyber-attacks on the U.S. Homeland and North America is high. Today, China routinely conducts cyber espionage against United States military, government, corporate, and academic networks to steal sensitive data and aid its weapons programs, inform its diplomacy, and advance its online influence operations. In a crisis or conflict, China almost certainly will launch cyber-attacks on military and civilian infrastructure in an attempt to delay or disrupt a United States response and to destroy United States will and public support for intervention.

30. Senator BLUMENTHAL. General VanHerck, what are we currently doing, and what do we need to be doing in order to successfully counter and deter this threat?

General VANHERCK. USNORTHCOM continues to employ allocated cyber forces to defend our cyber terrain and critical mission systems. In addition, if a lead federal agency requests DOD support, as the Defense Support of Civil Authorities Synchronizer I will provide DOD capabilities as needed to support whole-of-government efforts to defend U.S. critical infrastructure. In order to do this, I need a whole-of-government approach to prioritize U.S critical infrastructure so I can employ allocated forces needed to protect and defend critical non-DOD assets against cyber threats. In addition, I believe cybersecurity and cyber threat information sharing must continue to increase between the Federal Government and private sector. Although some progress has been made, improved information sharing will provide all-domain awareness to support a whole-of-government approach to countering and deterring the cyber threat.

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (ISR) ASSETS

31. Senator HIRONO. Admiral Faller, in your statement to the Committee you point out that SOUTHCOM employs less than 1 percent of DOD's ISR resources to counter external state actors (ESAs) and transnational criminal organizations (TCOs) in the Region, and then go on to mention your team's embrace of increasingly non-traditional intelligence collection efforts to bolster these efforts. In an era of increasingly constrained DOD resources, are there any additional procurement authorities or support Congress could grant you in the area of ISR to increase your collection capabilities, especially via non-traditional means?

Admiral FALLER. We will be submitting a UFR list to Congress shortly after the President transmits the fiscal year 2022 budget to Congress that will include both traditional and non-traditional ISR capabilities.

COUNTERING CHINA, RUSSIA, AND OTHER ESAS IN THE REGION

32. Senator HIRONO. Admiral Faller, you highlight all the additional malign activities China, Russia, and other ESAs are taking in the area of responsibility (AOR) to undermine United States credibility and partnerships in the Region. With that, and similar to ongoing efforts with the European Deterrence Initiative (EDI) and Pacific Deterrence Initiative (PDI), should Congress consider a similar approach to focus lines of effort and align a whole-of-government approach to address increasing security threats in your AOR?

Admiral FALLER. As I have testified to my increasing concerns about the challenges in our own hemisphere, various Members of Congress have raised this concept of a regional initiative for the Western Hemisphere. Given the perfect storm of threats I see facing our neighborhood, I would agree that it's time for a big idea for this region. The President has publicly voiced concerns about the root causes of migration—the violence, corruption, and instability in Central America—and has pledged to work with those countries to address those challenges.

Many of those root causes are driven by transnational criminal organizations (TCOs) that traffic in drugs, humans, arms, and any other commodity that will turn a profit for them. The corruption, instability, and human suffering that is fostered by these illicit organizations opens the door for competitors like China to leverage the dire circumstances in these countries for their gain. TCOs are violent—43 of the 50 most violent cities in the world are in this hemisphere. With the added pressure that COVID–19 and two back-to-back major hurricanes have placed on the region, a whole-of-government strategy that includes all U.S. elements of national power will be critical to ensuring security and stability in the Western Hemisphere—our shared home.

DOD'S ROLE IN ADDRESSING IMMIGRATION ISSUES IN THE AOR

33. Senator HIRONO. Admiral Faller, President Biden introduced the United States Citizenship Act recently, which if passed, would include $4 billion over 4 years to address root causes of migration in the Northern Triangle countries of El Salvador, Guatemala, and Honduras. How might DOD be involved in this?

Admiral FALLER. I believe that DOD does have an important role to play in such an initiative, in support of greater diplomatic and development efforts. Any strategy aimed at stability and prosperity will require basic security in order to be successful. One of the primary root causes of migration from El Salvador, Guatemala, and Honduras is the violence and insecurity facing that region, created mostly by the murderous TCOs that operate with impunity in those countries. TCOs also use the incredible profits they earn from trafficking in humans, drugs, and arms to foster corruption and instability that drives people from their homes in search of a safe place for their families.

The military brings capabilities to the table that are critical to building our neighbors' institutions and resiliency to the threats they are facing. DOD has established programs to help partner nations develop diverse and inclusive militaries that respect the rule of law and human rights. Our programs help develop the professional forces necessary to secure and stabilize our hemisphere. Our security cooperation programs include institutional capacity building in which we assist our partners in strengthening their basic security institutions to plan and manage resources. Our exercise program develops readiness, interoperability, and the ability to respond regionally to counter these threats. USSOUTHCOM also has the only Human Rights Office among Combatant Commands and has over 25 years of experience working with partner nations to institutionalize respect for human rights in military and security forces. Through professional military education, we teach our partners what "right" and professional forces look like. If the U.S. military is not present to model the values of a strong democracy and respect for civilian authority, others, with less desirable values, will step in.

34. Senator HIRONO. Admiral Faller, has your office done any pre-planning on the U.S. Citizenship Act?

Admiral FALLER. USSOUTHCOM has not been part of the planning effort for this initiative. However, the work we do every day in this hemisphere—our shared home—is completely aligned with the goal of addressing root causes of illegal migration. Our efforts could easily be incorporated into a whole-of-government effort to assist our neighbors as they face the perfect storm of threats all colliding in our hemisphere—violent TCOs fostering corruption, China and Russia taking advantage of that corruption, the long-term economic impacts of COVID–19, and two back-to-

back devastating hurricanes. USSOUTHCOM stands prepared to play a supporting role in this important effort.

SECURITY COOPERATION WITH ALLIES IN THE REGION

35. Senator HIRONO. Admiral Faller, thank you for emphasizing the importance of our allies and partners in the AOR—you specifically mention the flexibility to spend a greater share of title 10 section 333 funds over multiple years as an important tool to continue building partner capacity. Are there any other legislative changes that would further assist you in the important area of marshaling a stronger coalition of allies and partners in the Region to counter ESAs and TCOs in the AOR?

Admiral FALLER. USSOUTHCOM is working within current authorities and will engage the Congress if we find a need for further legislative changes.

SERVICEMEMBER QUALITY OF LIFE

36. Senator HIRONO. Admiral Faller, I am pleased you mention in your posture statement a continued focus on quality of life challenges directly affecting the force like finding adequate, affordable housing in the Miami area for SOUTHCOM servicemembers. Can you expound upon some of the efforts you've taken to combat this issue, including outreach with the local community, and the status of the Army's efforts to find a permanent, cost-effective housing solution in Miami?

Admiral FALLER. While Miami is a wonderful home for SOUTHCOM, it is a high cost of living area, which presents challenges for Servicemembers and civilians alike. Housing in the local area has been particularly challenging, with some landlords requiring 3-months rent up front, totaling ~$10,000. We are working with local communities to create exemptions to these high up-front costs for Servicemembers. While we work to alleviate the immediate financial burden, we are also working closely with the Department of the Army to find a low-cost, long-term housing solution near our Headquarters on already federally-owned land.

In addition to these efforts in direct support of lowering housing costs, we also pursuing other quality of life initiatives to further mitigate financial burdens on our Servicemembers. This includes working closely with the Army on initiating a review of Basic Allowance for Housing (BAH) rates for our local area as well as participating in a DOD cost of living allowance data collection to ensure our Servicemembers are receiving adequate compensation for this area. Finally, we are working with the State of Florida to seek tollway relief for those Servicemembers who are priced out of living near our headquarters and instead must commute over 20 miles each way to work via tollways.

CLOSING THE DETENTION FACILITY AT GUANTANAMO BAY, CUBA

37. Senator HIRONO. Admiral Faller, the New York Times reported in the last year or so that keeping detainees at Guantanamo Bay costs approximately $13 million per detainee per year, or over $500 million per year total to house 40 detainees—compare that to the $78,000 per year the United States spent in 2012 to hold individual prisoners at the ADX 'Supermax' Facility in Florence, CO. Should we finally close down Guantanamo Bay and use those funds for additional operations to combat drug traffickers and TCOs in your AOR, thereby saving hundreds or even thousands of American lives per year?

Admiral FALLER. USSOUTHCOM and JTF–Guantanamo are responsible for the safe, legal, and humane care and custody of law of war detainees. Closing the detention facility at Guantanamo Bay would be a policy decision, as would be any decision on how best to use any money saved if it were to be closed.

CYBERATTACKS ON THE HOMELAND

38. Senator HIRONO. General VanHerck, you talk about the increasing sophistication of cyberattacks on our networks and infrastructure from a variety of adversaries, particularly Russia and China. You coordinate Defense Support to Civil Authorities (DSCA) in this area for the Homeland—are you confident your command has the authorities and tools necessary to ensure our state and local partners are protected from the increasing threats posed by nation-state cyberattacks?

General VANHERCK. I have the authorities and tools necessary to execute my role as the DSCA Synchronizer to ensure that DOD responds appropriately to any approved Request for Assistance we receive from lead federal agencies. I remain concerned about whole-of-nation preparedness for attacks from peer competitors or ad-

versaries in a future crisis or conflict. We need a whole-of-government approach to prioritize U.S critical infrastructure in order for me to employ allocated forces to defend critical non-DOD assets against cyber threats that place mission assurance at risk. We are also working with USCYBERCOM to identify where new capabilities may be needed; for example, the interagency-approved standardized information template that facilitates rapid sharing of critical information from state and local levels to the DOD about possible threats to elections infrastructure is now a core element of our toolkit.

39. Senator HIRONO. General VanHerck, cyberattacks blur the line between traditional offensive military operations and operations short of war. What steps is NORTHCOM taking, in partnership with U.S. Cyber Command (CYBERCOM), to continue to convey to our adversaries how we view cyberattacks and, specifically, what our significant responses might be in order to deter future attacks?

General VANHERCK. USNORTHCOM closely coordinates with USCYBERCOM to ensure our strategic messaging efforts and target audiences are aligned, and to assess possible competitor reactions and repercussions. We are unlikely to completely deter all malicious cyber activities, but the Department's "Defend Forward" and CDRUSCYBERCOM's "Persistent Engagement" strategies are specific responses that signal that malicious cyber activities against the United States cannot be conducted without cost. Even so, Russian and Chinese cyber activity against the Homeland in the competition phase remains a significant concern.

I believe national-level policy engagement, beyond DOD, with Russia and China is needed to establish rules and norms of expected behavior in cyberspace to reduce the potential for unintentional escalation or failure of strategic deterrence. USNORTHCOM and USCYBERCOM are not in the lead for cyber defense and response, but both commands provide policy inputs regarding cyber rules and norms to key agencies in the U.S. Government. The Cyber Response Group—with participation from federal departments and agencies such as the Department of State, the Director of National Intelligence, the Department of Homeland Security, and the Department of Justice—leads policy and strategy development, coordination, and implementation procedures for responding to significant cyber incidents.

BALLISTIC MISSILE DEFENSE

40. Senator HIRONO. General VanHerck, while I realize Hawaii technically falls within the geographic bounds of U.S. Indo-Pacific Command (INDOPACOM), can you talk about the importance of getting the Homeland Defense Radar-Hawaii (HDR–H) operational to support our overall layered ballistic missile defense system?

General VANHERCK. I believe an operational HDR–H could contribute to an overall layered defense capability as one of several potential options that could be considered to provide additional capacity and capability—in this case, a layered defense specific to Hawaii—pending a Department decision on layered defense. I am confident I can defend all of the United States, including Hawaii and Alaska, with the missile defense system capability that we have today against a limited number of intercontinental ballistic missile threats from rogue nations. I remain concerned about my ability, specifically regarding future capacity and capability, to provide ballistic missile defense as the threats continue to adapt and evolve.

QUESTIONS SUBMITTED BY SENATOR JAMES M. INHOFE

HOMELAND DEFENSE RADAR—HAWAII

41. Senator INHOFE. General VanHerck, during your testimony, you highlighted the increasing risks posed by North Korea's advancing intercontinental ballistic missile (ICBM) program, and the importance of continuing to update and evolve Homeland missile defenses in order to meet this threat. However, in its fiscal year 2021 budget request, DOD proposed eliminating funding for the Homeland Defense Radar—Hawaii. While Congress ultimately restored this funding, could you explain the impact to Homeland missile defense capabilities should the radar ultimately not be completed?

General VANHERCK. Please see response to #40.

MISSILE DEFENSE TECHNOLOGY

42. Senator INHOFE. General VanHerck, in your written testimony, you outlined the growing threat to the United States Homeland posed by Russia's and China's investments in large numbers of long-range precision strike weapons, and North Korea's continued development of larger and more complex ICBMs. While you highlighted the range of efforts your command and DOD are taking to address these issues, are you concerned that we may be on the wrong side of the cost curve, especially since these countries can produce strike systems faster and cheaper than we can produce defensive interceptors?

General VANHERCK. Yes, a bullet-for-bullet strategy to kinetically defeat precision strike and ballistic missile threats to the Homeland is fiscally challenging. Although USNORTHCOM and NORAD require effective defensive capabilities to address threats faced by USNORTHCOM and NORAD today, my belief is that the focus should not solely be on kinetic kill capabilities. Policy makers must determine what USNORTHCOM and NORAD must defend with kinetic capabilities, as it is neither affordable nor realistic to defend every potential target in the Homeland.

It is my belief we need to change our perspective beyond kinetic kill to emphasize deterrence by denial. We do this by drawing attention left of enemy launch by identifying adversary delivery platforms and preconditions for actions. As part of this strategy, USNORTHCOM and NORAD are pursuing a globally integrated defense approach that emphasizes the use of domain awareness sensors, data and information, and an open data architecture utilizing machine enhanced processing and artificial intelligence. This approach is designed to move decision space left and provide military commanders and senior civilian decision makers time to assess and act well ahead of our competitors.

43. Senator INHOFE. General VanHerck, are there defensive technology areas where you would like to see greater investment—areas where progress might help the United States offset the cost imbalance without sacrificing operational effectiveness?

General VANHERCK. Yes. I recommend investments in multi-mission, all-domain awareness capabilities and capitalizing on modern processing (machine learning and artificial intelligence) that is commercially available today to provide civilian decision makers and military commanders with information required to quickly assess situations and if needed, take action. I have communicated my integrated priority list to the Department, which emphasizes investment in these priorities. The ability to deter in competition, de-escalate in crisis, and deny or defeat in conflict requires all-domain awareness, information dominance, and decision superiority.

MISSILE DEFENSE POLICY AND STRATEGY

44. Senator INHOFE. General VanHerck, in response to questions posed during his confirmation, Secretary of Defense Lloyd Austin committed to conducting a review of missile defense policies as part of the administration's overall defense strategy development. In the context of such a review, what would you consider your top three most critical capability shortfalls that DOD should work to address over the next several years?

General VANHERCK. Our ability to deter in competition, de-escalate in crisis, and deny or defeat in conflict requires significant improvements in all-domain awareness, information dominance, and decision superiority—these are my top three critical capability shortfalls. A capable and persistent defense at home is a prerequisite to projecting power to a globally integrated forward fight. The integration and sharing of data for a global, layered sensing grid will provide warfighters and decision makers at strategic, operational, and tactical levels with increased awareness and decision space needed to make timely, well-informed decisions. It is my recommendation that such a missile defense review be part of an overall strategic deterrence review. Missile defense is integral to overall strategic deterrence and should be aligned with the nuclear posture review. If conducted independently, separate reviews will lead to separate solutions or decisions that have broader implications, and thus should be considered as part of overarching strategic deterrence.

INTEGRATED TACTICAL WARNING AND ATTACK ASSESSMENT

45. Senator INHOFE. General VanHerck, over the past several years, DOD has clearly articulated the urgent need to modernize and replace all aspects of the Nation's nuclear triad, as well as the associated nuclear command, control, and communications systems. However, a critical component that supports our strategic de-

terrent, the Integrated Tactical Warning and Attack Assessment (ITW/AA) system, is often overlooked. Could you provide us your assessment of the condition of the ITW/AA system?

General VANHERCK. The ITW/AA system provides strategic warning and attack assessment as originally designed against legacy threats. However, even with the current and future planned improvements to the ITW/AA system, my ability to provide threat warning and attack assessment in the future lags behind our adversaries' rapid development of low radar cross section, high-speed, maneuverable, long-range weapon systems. As our competitors' capabilities continue to improve, USNORTHCOM and NORAD require timely and accurate information across all domains to counter their advancements in weapons systems, global influence, and actions.

46. Senator INHOFE. General VanHerck, are there portions of the ITW/AA system that you believe are in urgent need of modernization in order to ensure its continued effectiveness?

General VANHERCK. Yes, I believe the ITW/AA system has a pressing need to enhance all-domain awareness through integrating already-available sensor data. In addition, the Department must continue investments in service-life extensions of aging, but still-viable capabilities; development of new capabilities to include capabilities to hold hypersonics at risk; and inclusion of non-DOD capabilities to ensure effectiveness against current and future threats.

QUESTIONS SUBMITTED BY SENATOR ROGER F. WICKER

GRAPHIC DEPICTING U.S. INFLUENCE IN THE U.S. SOUTHERN COMMAND (USSOUTHCOM) AREA OF RESPONSIBILITY (AOR)

47. Senator WICKER. Admiral Faller, you submitted graphics depicting Chinese, Russian, and Iranian influence in the SOUTHCOM AOR. Please provide a similar graphic that shows U.S. economic and diplomatic engagement in your AOR.

Admiral FALLER. Attached is an updated map of U.S. influence focused on recent humanitarian assistance to the region to include COVID response; military education and training; equipment sales and transfers; and women, peace, and security engagements. Because port calls can many times involve minimal engagement with the host nation, we have included information on assistance provided by hospital ships, to include the USNS COMFORT. These naval deployments have made a significant impact in the nations visited. We have also include security agreements as an indication of the level of cooperation and partnership with the nations of this hemisphere.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

MISSILE DEFENSE

48. Senator SULLIVAN. General VanHerck, the National Defense Strategy articulates the top defense objective as: "defending the Homeland from attack;" a vital component of meeting this is robustly investing in our Nation's missile defense capabilities. Unfortunately, we are trending in the wrong direction regarding this issue: North Korea and Iran continue to expand the quantity, range, and lethality of their arsenals, as do our top great power competitors. Yet, as these threats trend upward, the budget allocated to missile defense trends flat or downward. In your personal opinion, how soon do you think the missile capabilities of rogue nations –North Korea and Iran—will outpace NORTHCOM's ability to defend the Homeland?

General VANHERCK. There are many variables that challenge my ability to pinpoint a specific time when our ballistic missile defenses might be outpaced. While I currently have the ability to defend against a limited number of ballistic missile threats from these rogue nations, I am very concerned about their ability to exceed my defensive capacity and capability in the near future. My intelligence team keeps me continuously apprised of North Korean and Iranian efforts to advance their missile programs. Without improvements to our current system—such as fielding of the Next Generation Interceptor, on time or sooner, and a Department decision about a layered missile defense capability—our defensive capacity will remain constant,

while the threat continues to grow, eventually exceeding my defensive capacity and capability.

49. Senator SULLIVAN. General VanHerck, in a 2020 House Armed Services Committee hearing, former Under Secretary of Defense for Policy (USD–P) John Rood agreed with the NORTHCOM assessment that North Kora's ballistic missile threat could challenge the capability of the ground-based midcourse defense (GMD) system as soon as 2025. Unfortunately, the Next Generation Interceptor (NGI) is not expected to be fielded until 2030 on the current timeline. How important is it that we field the NGI?

General VANHERCK. While ultimately this will be a policy decision, I believe that it is extremely important to field the NGI. My top priority as I work with VADM Hill at the Missile Defense Agency is to maintain the schedule, and if possible, seek ways to accelerate the fielding of the NGI to provide much needed capacity and additional capabilities to maintain or outpace adversary capability development.

50. Senator SULLIVAN. General VanHerck, what level of risk does NORTHCOM (and by extension our Nation) take on if the current timeline is not accelerated to keep up with the missile capability, capacity and reach of rogue nations?

General VANHERCK. My top priority for ballistic missile defense is to maintain or accelerate the fielding of the Next Generation Interceptor (NGI). While today USNORTHCOM can defend against a limited number of intercontinental ballistic missile threats from rogue nations, without NGI, current capability or capacity could be exceeded in the future and the risk to our Nation, and overall strategic deterrence failure, will increase as countries like North Korea continue to advance their missile programs. The DOD is continuing to evaluate additional options to mitigate potential capability challenges prior to the NGI being fielded.

51. Senator SULLIVAN. General VanHerck, the missile capabilities possessed by rogue nations—North Korea and Iran—continue to rapidly evolve. The New York Times recently reported that North Korea showcased the country's "largest-ever" ICBM just over a month ago, and revealed a new submarine-launched ballistic missile even more recently. Provided the presence of these very real and capable threats to our Nation's Homeland, are the 44 ground-based interceptors (GBI) currently postured enough to present a credible defense of the American people?

General VANHERCK. I defer to OSD and the SECDEF on the overall policy for the total number of ground-based interceptors. Although I maintain the capability to defend the Homeland against the current threat today, I remain very concerned about USNORTHCOM's ballistic missile defense capacity and capability being exceeded in the future as rogue nations continue to develop ICBM technology.

POLAR COMMUNICATIONS

52. Senator SULLIVAN. General VanHerck, in your statement for the record, you highlight NORTHCOM's focus on improving Arctic communications through a commercial constellation of low earth orbit (LEO) satellites. You describe this effort's ability to: " . . . dramatically improve communication for military users in the Arctic, as well as for civilians in remote, high latitude communities." Congress appropriated $50 million of the $130 million requested for this program in NORTHCOM's Unfunded Priority List. Can you describe for me the current status of this program and why LEO satellites—in support of polar communications—are so important,and, what the impact would be to NORTHCOM if unfunded?

General VANHERCK. I am grateful to the Committee for the funding authorized in the fiscal year 2021 National Defense Authorization Act for improved polar communications. In early May 2021, the Air Force awarded contracts to two commercial vendors, presenting the opportunity for competition to test Arctic capability between two different contract providers. This will enable initial testing of commercial Arctic communications capabilities, with the testing likely to commence by late summer 2021. In coordination with the Air Force Research Laboratory, USNORTHCOM and NORAD have already deployed terminals to Arctic locations and will begin testing as soon as the commercial satellite providers are ready. My expectation is to have reliable capability from multiple commercial vendors with near-24/7 Arctic coverage in the spring 2022 timeframe.

Commercial proliferated low earth orbit (LEO) satellite constellations are essential to the Homeland defense mission due to their high data rates, low latency, and expected lower costs—particularly in the polar region where there is currently little to no communications capability. Low latency, which can only be achieved using satellites in LEO orbits, is critical to fusing data from the North Warning System, ap-

plying advanced analytics via artificial intelligence/machine learning capabilities, and maximizing the detection capability of the system used to protect the United States and Canada. When I talk about domain awareness and information dominance, and being able to perceive and respond to complex threats, this system enables USNORTHCOM and NORAD to achieve those objectives. If unfunded, extremely limited SATCOM accessibility and bandwidth will continue to hinder Arctic persistence and military operations by restricting the ability to provide early warning and other important communications to USNORTHCOM and NORAD command and control systems.

ARCTIC CAPABILITIES

53. Senator SULLIVAN. General VanHerck, in your statement for the record, you identify: "Improving our domain awareness, communications systems, and our ability to conduct and sustain multi-domain operations in the high north are all important priorities for both NORTHCOM and NORAD." With this in mind—in your personal opinion, what capability gaps presently exist that inhibit your ability to effectively 1) project and sustain power in the Arctic, 2) compete with Russia and China in the northern latitudes, and 3) implement the National Defense Strategy?

General VANHERCK. My capability gaps related to establishing a persistent, sustainable presence in the Arctic include maritime fueling capability north of Dutch Harbor, which is necessary to expand the Navy's and Coast Guard's operational reach; improved infrastructure for our air assets (e.g. fighters, tankers, and ISR platforms); reliable, resilient communications systems; and modernized high-north domain awareness systems developed in coordination with our Canadian allies.

Additionally, USNORTHCOM and NORAD must have a dedicated allocation of Arctic-trained forces and Arctic-proven capabilities via the Global Force Management (GFM) process in order to effectively implement the National Defense Strategy and successfully execute the commands' assigned missions in the Arctic. Recent USNORTHCOM and NORAD exercises in the Arctic have been accomplished through support of units volunteering for the training opportunity and expending Military Personnel Appropriation (MPA) days, instead of being supported through assignment by the GFM process. In order to deliberately build capability in the Arctic, the Department must increase the prioritization of homeland defense and Arctic exercises and training against other requirements within the larger GFM process. We cannot execute the Strategy without adequately trained, equipped, and allocated forces.

54. Senator SULLIVAN. General VanHerck, what level of resourcing would you need to close these gaps?

General VANHERCK. USNORTHCOM and NORAD's collaboration with the Services and industry partners shows we can achieve affordable but significant capability advancements and innovative solutions to our most pressing challenges. In a key recent example, I am grateful for the Committee's support for initial efforts to operationalize emerging commercial space internet systems. However, I still require concurrent, coordinated binational, bilateral, and unilateral investments by the United States and Canada in NORAD warning systems to meet current and future threats, as well as NORAD modernization efforts focused on all-domain awareness in support of achieving information dominance and decision superiority.

55. Senator SULLIVAN. General VanHerck, in your personal opinion, do we have the necessary infrastructure—like Strategic Arctic Ports and expeditionary airfields—to project power and effectively compete in the Arctic?

General VANHERCK. No. USNORTHCOM and NORAD do not have the necessary infrastructure to execute the National Defense Strategy and Canadian Defence Strategy, compete with peer competitors day-to-day, or respond in crisis and conflict. Fuel is necessary for persistence and to support maritime power projection and sustainment. I am agnostic about what solution mitigates that capability gap. I do know that if the Port of Nome expansion as recommended by the 2019 U.S. Army Corps of Engineers feasibility study comes to fruition, it will increase Navy and Coast Guard reach and persistence in the Arctic. In addition, testing and developing Arctic Expeditionary Air Base Sets are also essential to meeting force laydown and shelter requirements. Finally, it is also necessary to fix deteriorating infrastructure in the high north (e.g. hangars, runways, distribution facilities, and storage for petroleum, oil, and lubricants) and update communications systems to modern standards.

56. Senator SULLIVAN. General VanHerck, what risk do we assume if we continue to forego adequate investments in these types of infrastructure?

General VANHERCK. Access to adequate infrastructure in the Arctic is critical to our ability to effectively defend the Homeland by deterring adversaries in competition, de-escalating in crisis, and defeating threats in conflict. Our competitors are making national investments in their Arctic operational capabilities; we must make similar smart, targeted investments to ensure the Joint Force's continued ability to operate effectively in this critical region while continuing to invest in training, personnel, and equipment readiness to operate in this challenging environment.

57. Senator SULLIVAN. General VanHerck, in your personal opinion, do we have the right mix of U.S. Navy surface ships to visibly contest illegal maritime claims, provide maritime warning and defense, and ensure a free and open maritime domain YEAR–ROUND—with surface freedom of navigation operations (FONOP)—in the Arctic? If yes, please explain how this could/will be executed with the current inventory.

General VANHERCK. I defer to the Navy and DOD regarding specific Naval force structure. With that said, I believe the Arctic continues to be an emerging global area of interest with many unique challenges which require us to constantly review and improve our technologies, tactics, techniques and procedures. The demand for future global naval capacity is likely to increase, not decrease.

INTEGRATING ARCTIC STRATEGIES

58. Senator SULLIVAN. General VanHerck, the Department of Defense released its Arctic Strategy in June 2019, the Air Force followed suit with its own strategy in July 2020, the Department of the Navy published their Arctic Blueprint in January 2021, and the Army's Arctic Strategy was released just this week. Can you describe to me—as the advocate for Arctic capabilities and one of two combatant commands with primary responsibility for Arctic military operations—how you are integrating these strategies and ensuring their implementation?

General VANHERCK. My USNORTHCOM and NORAD Strategy covers the Commands' entire area of responsibility, including the Arctic, and aligns with objectives identified in the *Interim National Security Strategic Guidance, the National Defense Strategy,* and the *2019 DOD Arctic Strategy.* It directs USNORTHCOM and NORAD elements to defend the United States and Canada in and through the Arctic with allies and partners, including Indigenous peoples and governments, by building Arctic awareness; enhancing Arctic operations, capabilities, and infrastructure; and ensuring a credible defense presence.

This Strategy will be implemented through the forthcoming USNORTHCOM Combatant Command Campaign Plan, which adds fidelity to my strategic guidance. The Combatant Command Campaign Plan includes specific objectives and tasking for USNORTHCOM Service components regarding development and implementation of Arctic-related Service capabilities and concepts, including operational test and evaluation for Arctic operations. Because these objectives and tasks align with, and are enabled by, the implementation of Service Arctic strategies, USNORTHCOM will be able to advocate more effectively for resourcing Arctic requirements.

59. Senator SULLIVAN. General VanHerck, do you believe each Service is assigning adequate attention and focus toward the Arctic?

General VANHERCK. Yes, for now, I am encouraged by the Services' development of Arctic strategies and attention toward the Arctic. However, I look forward to reviewing the Services' Program Objective Memoranda (POM) and the fiscal year 2022 President's Budget to gain a better sense of how the Services plan to resource those strategies.

RUSSIA'S "DEFENSIVE" ARCTIC POSTURE

60. Senator SULLIVAN. General VanHerck, several senior defense officials and nominees have recently characterized Moscow's approach in the Arctic as: "largely from a territorial defense perspective." Yet, Russia has increased its incursions of the Alaska Air Defense Identification Zone markedly over the last year. In fact, the average number of intercepts of Russian aircraft from 2007 to 2019 was six to seven. In 2020—through October—there were a total of 14. Further, Russia has also increased the frequency and scale of military exercises in the region. Last August, the Russian navy conducted a major exercise consisting of more than 50 warships and 40 aircraft in the Bering Sea; which, also encompassed them expelling United

States fishing fleets from our own exclusive economic zone. Do you view these activities as defensive in nature?

General VANHERCK. No. The Arctic is key terrain for both Russia and the United States, and Russian military forces regularly conduct exercises in the region that are likely designed to accomplish multiple objectives—including training in the harsh Arctic environment and directing strategic messaging at the United States, NORAD, and the North Atlantic Treaty Organization. More specifically, Russian heavy bombers are inherently offensive platforms, so I view any of their flights near Alaska as Russia messaging that it can hold North America at risk with its inventory of advanced air-launched cruise missiles. Further, Russia's naval exercise in the Bering Sea in August 2020 was its first such exercise in that area in decades and included launches of anti-ship and coastal defense cruise missiles against targets near the Russian coastline. I believe these activities are primarily intended to demonstrate the Russian Pacific Fleet's ability to destroy naval surface platforms in the North Pacific in the event of escalation of conflict with the United States.

61. Senator SULLIVAN. General VanHerck, what, in your opinion, would constitute military activity in the Arctic that could be characterized as offensive?

General VANHERCK. In my role as the Commander of USNORTHCOM and NORAD, I view actions that threaten the United States and Canadian Homelands as potentially offensive in nature—including those in the Arctic. In recent years, Russia has developed and demonstrated advanced air-, sea-, and ground-launched land-attack cruise missiles, and I see any military activity that simulates the employment of these systems in the Arctic as demonstrating offensive capability. This includes flights by Russian heavy bombers into the Alaska Air Defense Identification Zone and the Canada Air Defense Identification Zone. I see large-scale demonstrations of offensive assault capabilities using airborne or amphibious troops and activities that threaten to sever or significantly restrict legitimate access to the Arctic in a similar light.

TED STEVENS CENTER

62. Senator SULLIVAN. General VanHerck, last year Congress appropriated $10 million for the Department of Defense (DOD) Ted Stevens Center for Arctic Security Studies which was authorized in the Fiscal Year 2021 NDAA. The Ted Stevens Center will be the first DOD regional center in the Arctic and will seek to support defense strategy objectives and policy priorities through an academic forum, while also fostering strong international networks of security leaders. As the advocate for United States Armed Forces capabilities in the Arctic, how do you see this center supporting NORTHCOM objectives in the Arctic and what topics would you like to see the center focus on?

General VANHERCK. I see a Center for Arctic Security Studies as having the potential to support USNORTHCOM's homeland defense objectives by improving cooperation with allies and partners, promoting shared understanding of Arctic security challenges, and facilitating international collaboration on matters of common interest. A center could also provide significant value in research and development of software and systems that advance my top priority of providing global all-domain awareness, improving information sharing with allies and partners, and creating open architectures for Arctic sensor and data feeds. Finally, it could also be helpful for such a center to analyze environmental, strategic, and economic issues in the region; foster international cooperation; and promote the value of the Arctic as an international commons.

WHOLE OF GOVERNMENT APPROACH IN THE ARCTIC

63. Senator SULLIVAN. General VanHerck, the Arctic encompasses a wide range of government institutions to include the U.S. State Department's role on the Arctic Council and coordination with allies, the U.S. Intelligence Community's role in maintaining Intelligence, Surveillance, and Reconnaissance operations, and the numerous Federal Agencies involved in research, infrastructure, commerce, and natural resource development in the Arctic region. Would you agree with me that the United States must use a whole-of-government approach to address issues in the Arctic? If so, how would you suggest the DOD better include other Government agencies in their approach to Arctic issues?

General VANHERCK. Yes. A whole-of-government approach is critical to success in the Arctic, and I believe the United States must implement all elements of national power to keep pace with the rapidly evolving strategic and environmental situation in the region. To ensure success, the DOD must work with partners from across the

interagency, and with our allies and partners, to develop a whole-of-government framework for rising to the challenges of strategic competition, which would certainly include challenges in the Arctic. Further, continued interagency participation in international forums such as the Arctic Council, Arctic Coast Guard Forum, and the Arctic Security Forces Roundtable, along with close coordination between the State Department, the DOD, and the intelligence and scientific communities, are necessary to maintain unity of effort, consistent messaging, and consensus among our Arctic allies and partners.

ARCTIC FORCES COMMAND STRUCTURE

64. Senator SULLIVAN. General VanHerck, as you know, NORTHCOM is the advocate for capabilities in the Arctic, United States European Command (EUCOM) contains much of the threat in the Arctic, and INDOPACOM is assigned the forces that operate in the Arctic. In your personal opinion, given its convoluted nature, what changes would you recommend, if any, to improve the organization of the command structure to better address threats in the Arctic? Please elaborate.

General VANHERCK. I believe current command structure and relationships require adjustment to maximize the Joint Force's ability to operate under a globally integrated construct and provide effective military options in the Arctic during periods of competition, crisis, and conflict. In order to develop and field a modernized defense design for the continent and our Homeland, USNORTHCOM and NORAD are developing a series of focused table top exercises and senior leader seminars to examine the current command and control structure and its effectiveness in supporting Arctic operations. I have also directed USNORTHCOM and NORAD to examine and modify our internal command and control constructs wherever possible under current authorities. Once that analysis is complete, I intend to convene a series of discussions with USINDOPACOM, USEUCOM, the functional combatant commands, the Services, and the Joint Staff to examine options for adjusting the current construct.

I would add that I welcome opportunities to explore potential benefits associated with Service retention of Alaska-based forces to ensure timely and effective employment of assets wherever they might be needed globally in the event of a crisis or contingency. My intent is to better support the Joint Force's ability to conduct integrated operations across the Arctic region, which, as you note, involves the operational interests of three geographic combatant commands.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

MODERNIZATION AND STOVEPIPING

65. Senator BLACKBURN. General VanHerck, what specific policy changes would be required for the Department of Defense (DOD) to improve its efforts to leverage emerging technologies—e.g., the artificial intelligence used by Pathfinder—to make data accessible, shareable, and actionable?

General VANHERCK. I believe acquisition policies that can accommodate innovative software and cloud-native approaches will be increasingly important as technology rapidly improves. Pathfinder showed us that current acquisition policies, which are oriented to fielding physical systems, inhibit the agile development and evolution necessary to fuse data from many sources and provide the warfighter with actionable information. As a Department, I believe we can improve the ways in which we approach security, acquisition, development, and costing in order to capitalize the strength of cloud-native approaches.

I would also note that USNORTHCOM and NORAD have made huge strides in our modernization efforts by utilizing direct hiring authority for Science, Technology, Engineering, and Mathematics (STEM) positions. By using this authority, our Pathfinder effort mirrors the hiring standards of industry, allowing the team to rapidly hire information technology experts from outside the Department and embed those personnel with the warfighter. As a result, the work on data feed integration and artificial intelligence that was originally scheduled to take a year was completed in less than six months.

66. Senator BLACKBURN. General VanHerck, what specific culture changes would be required for DOD to improve its efforts to leverage emerging technologies—e.g., the artificial intelligence used by Pathfinder—to make data accessible, shareable, and actionable?

General VANHERCK. I believe the Department should stop developing a DOD data standard and instead re-vector efforts towards DOD data governance. The time it takes industry partners to decode and parse data is measured in days, hours, and minutes, vice the weeks and months that it often takes within the Department. Industry has an agnostic approach to data format and so should the Department—it is what gives industry their speed and agility. The Department should standardize governance across the combatant commands and Services to ease restrictions on data transfer, usage, access, and sharing.

A two-pronged approach is needed to affect culture change: top-down and bottom-up. For the top-down effort, combatant commanders need to work closely with Department support agencies to articulate how important global integration is to approaching our greatest threats. Few threats stop at a geographic boundary or are contained within a domain. This type of thinking must infuse policy guidance. For the bottom-up effort, Airmen, Soldiers, Sailors, Guardians, and Marines need to participate in cloud-native development environments, allowing and encouraging them to explore and experiment without over-burdensome rules, to leverage technology and deliver warfighting capability at the speed of relevance.

67. Senator BLACKBURN. General VanHerck, does DOD have the knowledge base necessary to optimize modernization through emerging technologies? Please explain your answer.

General VANHERCK. Yes. The DOD continues to grow its knowledge base of emerging technologies through partnerships with commercial, private, and academic groups to ensure the Department stays abreast of promising developments. Examples such as the Defense Innovation Board; Defense Innovation Unit; Space Development Agency; Defense Advanced Research Projects Agency; and Service innovation centers, labs, and sponsored groups like AFWERX help optimize modernization throughout the DOD.

68. Senator BLACKBURN. General VanHerck, what immediate actions could Congress take to enhance the roles of public-private partnerships, our national and defense labs, and the National Guard in supporting DOD's modernization efforts—especially those relating to emerging technologies and data science? Please explain your answer.

General VANHERCK. Immediate actions Congress could take are to ensure sufficient research and development funding for emerging technologies and data science developments, while continuing to create opportunities for partnerships between DOD and outside experts. Also, Congress can help to create and support a culture where failure, when properly managed, is okay and a natural part of accelerating capability development—the Department learns the most from failures. Those collaborative efforts are critical to achieving all-domain awareness, information dominance, and decision superiority. As threats continue to advance, it is increasingly important to foster public-private partnerships, as well as collaboration with national and defense labs and the National Guard to outpace our competitors.

INFLUENCE CAMPAIGNS

69. Senator BLACKBURN. Admiral Faller, how is SOUTHCOM especially adept at "doing more with less" to implement the National Defense Strategy?

Admiral FALLER. SOUTHCOM continues to learn how best to leverage capabilities that are not within DOD programs of record or assets/capabilities in order to stay innovative. We have very willing partners in this hemisphere, who with a little assistance via security cooperation become an integral part of our regional approach to counter regional threats. Our partners have proven to be an integral part of regional security—having been critical participants in 60% of our TCO disruptions over the last year. Our efforts through programs like section 333 have demonstrated clear return on investment, building interoperability and operational capacity of our partners to operate shoulder-to-shoulder with us.

SOUTHCOM will look to continue expanding and investing in non-traditional ISR utilizing 21st century social media tradecraft as a means of illuminating and limiting disinformation/misinformation in a whole-of-government approach that includes engaging with industry to best compete in a competitive information environment.

70. Senator BLACKBURN. Admiral Faller, which of these high-return-on-investment activities are most effective in countering Chinese influence campaigns in the SOUTHCOM AOR?

Admiral FALLER. Intelligence drives everything. Small investments in our non-traditional intelligence programs can help inform us and, just as important, our partner nations, on the activities of the PRC in this region. With capabilities like COGINT (Commercial + Open Geointelligence) and Open Source Intelligence, we are able to understand the impact Chinese influence campaigns are having in the SOUTHCOM AOR and do so rapidly, leveraging automated machine learning. For instance, we have a better understanding of which Chinese companies and vessels are conducting illegal, unreported, and unregulated fishing, and are constantly monitoring patterns of activity. This information is key to help strengthening relationships and for maritime sovereignty and security throughout the region.

IMET and other International Training Programs build professionalism and trust, which helps "box out" the competition. The opportunity to bring our partners to the United States for training provides an invaluable experience for them and their families and build lifelong friendships with future regional leaders.

The National Guard State Partnership Program is a low-cost program that is a tremendous force multiplier for SOUTHCOM. We have the most State Partners of any region in the world, recognizing the power of the long-term, habitual relationships and engagements that this program brings to the table.

The tools available through Security Cooperation allow for maximum engagement with our partner nation military and security forces. These tools include Key Leader Engagements, Subject Matter Expert Exchanges, Conferences, Workshops, Mobile Training Teams, and Institutional Capacity Building at the Ministry level, to name a few. A little bit goes a long way in this theater, time invested through engagements whether in person, virtual, or a hybrid are invaluable.

MISSILE DEFENSE

71. Senator BLACKBURN. General VanHerck, the Strategic Homeland Integrated Ecosystems for Layered Defense (SHIELD) will employ repurposed legacy systems and newer technology in tandem. How do you assess the desirability of combining these systems to address threats from strategic competitors and rogue regimes?

General VANHERCK. I believe the ability to get more capability out of legacy systems while folding in new technology is key to the overall capability and affordability of proposed architectures in a credible layered defense against strategic competitors and rogue regimes. The architectures developed must capitalize on current systems to address current threats, but must also be adaptable to integrate new and developing systems to counter evolving threats across the full spectrum of conflict from the tactical to strategic level, from peer nations to rogue actors. Our nation can no longer afford stove-piped capabilities that cost billions of dollars and take decades to deliver. Several current technologies can be modified or improved to help create a persistent, capable area defense at home, while also preserving the Department's ability to contribute to the forward, globally integrated fight. Building upon our existing legacy systems allows the Services to maintain current programs of record, as well as increasing their interoperability with new technology to address the evolving threats.

72. Senator BLACKBURN. General VanHerck, are there additional roles or niche areas in which Canada could take a more offensive role within the SHIELD ecosystem—e.g., non-kinetic disruptive capabilities in the cyber domain? If so, please identify them and explain their desired impacts.

General VANHERCK. The United States and Canada have complementary roles in homeland defense. In the near term, systems improving all-domain awareness are the top priority for NORAD modernization, and Canada plays a key role in that effort. For example, Canada is the leader in polar over-the-horizon radar (POTHR) research, and recently began work on a prototype system in the Canadian Archipelago. When fielded, POTHR will provide an ability to detect approaching aircraft and missiles at extremely long ranges, closing gaps in our current legacy warning and assessment systems, and denying the Arctic as an avenue of approach.

QUESTIONS SUBMITTED BY SENATOR JOSH HAWLEY

CHINA'S MILITARY PRESENCE IN THE WESTERN HEMISPHERE

73. Senator HAWLEY. Admiral Faller, you wrote in your testimony that China seeks to "establish global logistics and basing infrastructure in our hemisphere in order to project and sustain military power." Are you worried that China may one

day seek to establish a more regular or permanent military presence in the Western Hemisphere?

Admiral FALLER. Examples exist around the world of the PRC establishing dual-use facilities that it initially touted as strictly commercial, but later used for government/military purposes. Likewise, the PRC is moving out methodically on its stated goals in the Western Hemisphere—to expand trade, presence, and influence—goals that will increase investments in this region in critical infrastructure like deep water ports and space tracking facilities.

74. Senator HAWLEY. Admiral Faller, what would it mean for United States national security if China were able to regularly deploy or permanently station forces in the Western Hemisphere?

Admiral FALLER. From experience in other regions, when the PRC comes to town it is rarely "just economic" and the PRC envisions dual use capability. Greater port access will provide strategic locations for future military presence. We are currently seeing PRC influence across the full spectrum in this hemisphere – political, economic, and military.

As the Department's most recent report to Congress on military and security developments related to China notes, the PRC is working to establish a robust global network of overseas bases and logistics nodes to allow its military, the People's Liberation Army (PLA), to project and sustain military power globally. A persistent PLA presence in the Western Hemisphere would present both a broad challenge to U.S. access, presence, and influence in our own neighborhood and a threat to the ability of the Department to operate in our own neighborhood.

75. Senator HAWLEY. General VanHerck, Admiral Faller testified that China seeks to "establish global logistics and basing infrastructure in our hemisphere in order to project and sustain military power." Are you worried that China may one day seek to establish a more regular or permanent military presence in the Western Hemisphere?

General VANHERCK. Yes. I am concerned China will attempt to establish a permanent military presence in the Western Hemisphere. Over the past decade, Chinese naval ships visited regions very distant from China's shores, including multiple countries in the Western Hemisphere. The Chinese actively compete with the United States in this Hemisphere for influence and economic advantage, pursuing investments in natural resources and energy to meet demands at home and to finance interests abroad. China uses its One Belt-One Road initiative to modernize port facilities worldwide to ostensibly support trade, and could leverage an expanded presence in this Hemisphere to deepen its regional influence and to broaden its security cooperation relationships.

76. Senator HAWLEY. General VanHerck, what would it mean for United States national security if China were able to regularly deploy or permanently station forces in the Western Hemisphere?

General VANHERCK. From a homeland defense perspective, a permanent or semi-permanent Chinese military presence in the Western Hemisphere would be a significant concern. It would erode and undermine U.S. global leadership, constrain our options in crisis, and create significant challenges during a conflict. Moreover, it would amplify the influence China has gained through trade and investment by offering an alternative to United States security guarantees.

77. Senator HAWLEY. General VanHerck, you wrote that China is augmenting its offensive cyber capabilities with "a new family of long-range precision-strike weapons capable of targeting key logistical nodes" in the continental United States. What should the United States prioritize doing in the next five years to strengthen deterrence against Chinese attacks, kinetic or otherwise, on our critical infrastructure?

General VANHERCK. To deter competitors like China, it will be increasingly important to prioritize our protection of critical capabilities for homeland defense and power projection. Our current doctrine of deterrence by denial will be increasingly challenged by competitors that possess the capability to strike the Homeland from multiple avenues of approach and in multiple domains. To outpace these advanced threats, we must get ahead of our competitors' decision making by establishing global all-domain awareness and working toward information dominance and providing our leaders at all levels with decision superiority.

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, MARCH 25, 2021

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

UNITED STATES SPECIAL OPERATIONS COMMAND AND UNITED STATES CYBER COMMAND

The Committee met, pursuant to notice, at 9:30 a.m. in room SD–G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Kaine, King, Peters, Manchin, Duckworth, Rosen, Kelly, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. Let me call the hearing to order. Just to make everyone aware, we have four votes scheduled to begin at 10:45, so we will have to be, yeah, we will be very flexible.

But let me make my opening remarks, and then recognize Senator Inhofe, and then recognize our panel.

Good morning. Today, the Committee meets to receive an update on the readiness and posture of both the U.S. Special Operations Command (SOCOM) and the Cyber Command.

Our witnesses are Acting Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict, Christopher Maier; Commander of U.S. Special Operations Command, General Richard Clarke; and Commander of U.S. Cyber Command, National Security Agency Director, and Chief of the Central Security Service, General Paul Nakasone.

Both Special Operations Command, or SOCOM, and Cyber Command, are at the forefront of addressing the asymmetric information and technical challenges that transcend the boundaries of the geographic combatant commands. I hope our witnesses will convey our appreciation to the men and women you represent and their families, for their dedication and sacrifice in carrying out many of our Nation's most difficult and complex missions.

In 1986, when Congress created SOCOM, to ensure the readiness of Special Operations Forces, or SOF, it also established the posi-

tion of the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict, or ASD SO/LIC, to be the service-like secretary tasked with day-to-day advocacy and oversight of SOF.

In recent years, Congress has sought to further empower the ASD SO/LIC and optimize the partnership with the commander of SOCOM through the annual National Defense Authorization Act. Unfortunately, the Department has not made sufficient progress in implementing these reforms, particularly with respect to hiring appropriate personnel and establishing a strong role for the ASD SO/LIC and all decisions relating to the organization, training, equipping, and readiness of SOF.

We are pleased Mr. Maier is joining us today as the acting ASD SO/LIC and look forward to receiving a nominee so the Department can have a fully empowered, Senate-confirmed civilian in this important position.

Mr. Maier and General Clarke, I hope you will provide your assessment of how this Committee can help to ensure that the SO/LIC reforms are both, fully implemented and effective, in their ultimate goal of supporting the SOF enterprise.

In recent years, there have been several incidents and allegations of misconduct involving special operators that, as General Clarke has noted, jeopardized the trust placed in SOF. I applaud SOCOM for taking a hard look in the mirror by completing a comprehensive review of SOF culture and ethics last year.

Among other things, the review concluded that SOCOM disproportionately focused on SOF employment and mission accomplishment at the expense of training and development of our force. In some cases, this imbalance has set conditions for unacceptable conduct to occur due to a lack of leadership, discipline, and accountability.

General Clarke, I am interested in hearing more about the specific actions you have taken to address the findings of the comprehensive review and what more must be done.

Turning to Cyber Command, General Nakasone, you have been working to mature the cyber force, ensuring their readiness, and overseeing the development of capabilities to conduct defensive, offensive, and supporting intelligence operations. I understand there are positive trends in all of these areas, but the threat to our cybersecurity may be advancing at an even faster rate.

Indeed, recent disturbing cyber intrusions and attacks, likely conducted by Russia and China, will command attention in today's hearings.

In the SolarWinds incident, hackers conducted a sophisticated operation that installed a backdoor and a software update that left approximately 18,000 enterprises vulnerable to exploitation and attacks, including many government agencies and companies that provide essential goods and services. We have recently learned that a Chinese entity exploited multiple previously unknown vulnerabilities in the software running Microsoft Exchange email servers and there are hundreds of thousands of these servers around the world. After Microsoft announced the breach and issued methods to protect it, multiple Chinese Government-sponsored hacking groups rushed to compromise thousands of vulnerable servers before they could be patched.

A third event that merits attention is the reporting that China attacked the power grid in India during recent physical clashes the Himalayan border regions.

General Nakasone, in the first two events, paid actors exploited vulnerabilities to steal data. While some may consider this tolerable and expected behavior from a competitor nation, others view the scope and scale of these operations as reckless and a different class that merits a sharp response, and I am interested in your views in this matter.

In the matter of China's attack on the Indian power grid, which followed multiple Russian cyberattacks on Ukraine's power grid, there is a sense of growing willingness of adversaries to attack critical infrastructure in any serious confrontation; again, I am interested in your perceptions on this matter and if we need to be concerned about our Nation's critical infrastructure.

I, again, want to thank the witnesses for their service and willingness to be here today, and I look forward to your testimony.

Senator Inhofe, please?

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Thank you very much, Mr. Chairman. Great statement. I appreciate that and for calling this important hearing to examine the posture of the U.S. Special Operations Command and the U.S. Cyber Command.

I also want to thank our witnesses for being here with us today. They are the right guys for this hearing.

My top priority continues to be ensuring the effective implementation of the National Defense Strategy. We have been talking about that at almost every meeting that we have. It prioritizes competition with China and Russia, while maintaining pressure on global terrorist groups like ISIS, and I will have some specific questions on that at question time.

As I said on the floor on Tuesday, we need to match the budget with strategy. It takes at least 3 to 5 percent real growth in the defense budget above inflation. It doesn't look like it is going to be easy to get to that point. We are going to have to keep trying.

Military advancements and the expanding global ambitions by China and Russia pose new and increasingly complex challenges to our national security. In addition to growing their conventional military capabilities, China and Russia are expanding their use of irregular warfare tactics, involving cyber disinformation, proxy forces, and economic blackmail around the world.

They have proven these tactics are effective in places like Ukraine, in Syria, in the South China Sea, and now they are exporting them to Africa and to the Western Hemisphere. As we discussed before, this reality makes implementation of the irregular warfare annex to the National Defense Strategy (NDS) critically important. It also requires that Special Operations Forces are organized, trained, and equipped to compete in this domain of warfare.

At the same time, ISIS [the Islamic State of Iraq and Syria] and al Qaeda have proven resilient and still pose a threat. History has shown us that without sustained pressure, that threat will grow. I think we all understand that.

I understand that President Biden is reviewing the U.S. counterterrorism policy, and according to media reports, has issued interim guidance, requiring the White House to sign off on operational military decisions that were previously delegated to the DOD [Department of Defense]. Let me be clear, I have serious concerns with the decision to return to the Obama era policies that tied the hands of our military commanders and made it harder to keep pressure on ISIS and al Qaeda. I expect this Committee will be consulted often during the administration's review. I have talked to the President about this and I believe that is going to happen.

Another critical component of implementing the NDS is developing robust capabilities to counter growing threats in cyberspace. The 2018 Cyber Strategy provides a roadmap on how we are going to do this. Significant efforts have occurred in recent years across the DOD to implement the strategy and to build the capabilities of Cyber Command and the cyber mission forces.

Today, I look forward to our witnesses' testimony in addressing these critical problems that are out there, and we are going to do all that we can to try to solve that. So, I appreciate this hearing and I think we will all benefit from it.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Inhofe.

Mr. Maier, please?

STATEMENT OF CHRISTOPHER P. MAIER, ACTING ASSISTANT SECRETARY OF DEFENSE FOR SPECIAL OPERATIONS AND LOW–INTENSITY CONFLICT

Mr. MAIER. So, good morning, Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee. Thank you for the opportunity to testify on our global posture for America's Special Operations enterprise.

I would also like to thank Congress and especially this Committee for its strong support for the SOF community and its mission. I am honored to testify alongside General Clarke and General Nakasone, who have dedicated their careers to safeguarding our Nation from complex and unconventional threats.

I would like to begin by acknowledging the service and sacrifice of our special operations soldiers, sailors, airmen, marines, and civilians. Although SOF make up only about 3 percent of the joint force, over the past 2 years, this community that has bore over half of all U.S. combat casualties. Many more have sustained life-altering injuries and suffer psychological trauma.

As we look forward, Secretary Austin has outlined his three principle priorities for the Department of Defense. Those are: defend the Nation, take care of our people, and succeed through teamwork. The SOF community will measure ourselves against these priorities.

Representing just 2 percent of the overall DOD budget, SOF played an essential role within the joint staff in advancing multiple strategic priorities for the Department and the Nation. We continue to adapt the unique capabilities and problem-solving expertise of our special operators through the challenge of great power

competition with Russia and China, while strengthening the alliances and partnerships that enhance our ability to compete.

As we innovate to compete more effectively below the level of armed conflict, we recognize that our counterterrorism operations, while still critical to protect Americans from the likes of ISIS and al Qaeda, must become even more sustainable and focused on the most pressing threats to our citizens and interests.

Enhancing the readiness and resilience of our SOF warriors and their families remains a top priority. Despite the COVID–19 pandemic, SOF have continued to maintain a high level of operational readiness. We remain focused on, and are making progress in, easing the strain of high rates of overseas deployments.

I look forward to working with you and your staff to collectively continue to build the resiliency and culture of this community that has given so much in protecting us for nearly a generation.

I also remain concerned about incidents of serious moral and ethical failings within the SOF community, a concern I know General Clarke shares. I commend him and Special Operations Command for leading a comprehensive review of SOF culture and ethics last year.

Civilian-military partnership on all of these issues remains a key priority for me and my team. In response to Secretary Austin's challenge to us, we are also committed to enhancing diversity within the SOF community. As we compete against different and more capable adversaries, a more diverse force empowers us to draw upon broader perspectives, different lived experiences, and new ideas.

Finally, we recognize the strong interest in Congress in empowering civilian leadership in the Department. We appreciate legislation in the most recent National Defense Authorization Act to codify and strengthen ASD SO/LIC's role. It is our collective duty to ensure these reforms meet your intents and serve the interests of the Department and the men and women of our SOF community.

Mr. Chairman, I would like to conclude by thanking the Committee, again, for its strong support for our Special Operations team. Thank you for the opportunity to testify. I look forward to your questions.

[The prepared statement of Mr. Maier follows:]

PREPARED STATEMENT BY MR. CHRISTOPHER P. MAIER

INTRODUCTION

Chairman Reed, Ranking Member Inhofe, and other distinguished Members of the Committee, thank you for the opportunity to testify on our global posture for DOD's Special Operations Forces (SOF) Enterprise. As Acting Assistant Secretary of Defense (ASD) for Special Operations and Low-Intensity Conflict (SO/LIC), my remarks will focus on ASD SO/LIC's statutory responsibilities for administrative oversight of U.S. Special Operations Command (USSOCOM). I am honored to testify alongside General Clarke and General Nakasone. I greatly appreciate their decades of leadership and service in protecting the Nation's national security interests.

I would like to begin by acknowledging the service, sacrifice, and success of our Special Operations soldiers, sailors, airmen, marines, and civilians. U.S. SOF have played a critical role in every major conflict since the Second World War, and they remain in the fight today—conducting operations against ISIS, al Qaeda and its affiliates; working alongside partners and allies; and providing our Nation's leaders with flexible and rapid response options to a wide range of national security emergencies. Since the terrorist attacks of September 11, our SOF community has estab-

lished a remarkable record of achievement. From the overthrow of the Taliban regime in Afghanistan in December 2001, to the complex operations targeting the world's most notorious terrorist leaders like Osama bin Laden, and to the extraordinary effort to eliminate the ISIS caliphate in Syria and Iraq, we owe our SOF community our deepest gratitude.

Despite recent reductions in deployments, SOF remain at the forefront of U.S. combat operations, often operating in remote and hostile environments. Over the past 2 years, 15 members of the SOF formation were killed in combat operations. Although SOF make up only approximately three percent of the Joint Force, they have endured more than half of U.S. combat casualties during that period. Many more have sustained life-altering injuries or suffer from psychological trauma. The service and sacrifice of these men and women challenge us to live up to the high standards they embody.

I would also like to thank Congress for your strong support of the SOF community as well as your predecessors and their foresight in recognizing the need to build and sustain special operations capabilities to respond to an increasingly complex threat environment. The Nunn-Cohen amendment that established USSOCOM and the position of ASD SO/LIC in 1986 was prescient in recognizing that future conflicts would be fought by both state and non-state actors and often through unconventional and irregular means. The authors of these reforms rightly understood that dedicated resources for Special Operations-specific purposes were essential to promoting and sustaining these capabilities within the Department.

My statement this morning will focus on how the SOF community is supporting Secretary Austin's three principal priorities as outlined in his March 3, 2021, "Message to the Force"—1) Defend the Nation, 2) Take Care of Our People, and 3) Succeed through Teamwork. In the nearly two decades following the terrorist attacks of 9/11, SOF have continued to develop new technologies and capabilities to become the most effective counterterrorism (CT) force in history. Today, the SOF Enterprise is in the midst of a critical period of transition as the National Defense Strategy (NDS) and the Interim National Security Strategic Guidance (INSSG) challenges us to conduct counterterrorism operations more sustainably as we also adapt to the challenges of great power competition. At the same time, I am pleased to report that we have continued to improve the readiness of the force and reduce the strain of deployment on our SOF warriors and their families. Your leadership and support and have been, and will continue to be, essential in this effort.

DEFEND THE NATION

Representing approximately two percent of the DOD budget, SOF play a crucial role within the Joint Force in support of multiple DOD priorities, and the SOF community continues to make progress in adapting its capabilities to the challenge of great-power competition with Russia and China. I emphasize the word "competition" because just as the National Defense Strategy calls on us to develop traditional military capabilities to deter and respond to threats, we are also called to strengthen alliances, innovate, and compete more effectively below the level of armed conflict. Revisionist powers, rogue states, and non-state actors are actively pursuing unconventional, irregular, and asymmetric strategies to undermine U.S. strategic interests, erode democratic institutions, and destabilize and re-shape the post-WWII world order to their advantage, without provoking a U.S. conventional military response. Indeed, as the Department continues to strengthen our traditional military capabilities, we can expect that our adversaries will increasingly employ indirect and irregular approaches to achieve their strategic objectives to capitalize on asymmetries that work to their advantage.

Thus, winning the competition is essential to achieving our near-term strategic objectives, and to precluding a major conflict. This is not a theoretical battle to prepare for in the future. This is today's fight, and the SOF capabilities we have nurtured over the past 30 years are essential to successfully competing—and winning—in today's unconventional and irregular battlespaces. In close coordination with the Joint Staff, Services, and Combatant Commands, including USSOCOM, my office is leading the implementation of the Irregular Warfare (IW) Annex to the NDS to institutionalize the Department's approach to IW throughout the Joint Force and to operationalize it for great power competition and resource-sustainable counterterrorism. The IW Annex directs the Joint Force to embrace the potential for irregular warfare to shape great power competitors' behavior proactively to our advantage, create dilemmas to deter future aggression, and strengthen alliances and partnerships.

As we adapt to meet the challenges of great power competition, we remain focused on ensuring CT operations are sustainable and focused on the most relevant threats

to United States national security interests such as ISIS and al Qaeda and their affiliates that continue to pose a threat to Americans and United States interests around the globe. Continued U.S., allied, and partner nation pressure has helped prevent these groups from attacking the Homeland.

Within this strategic context, and consistent with the INSSG, we continue to adapt our global posture and develop SOF-unique capabilities that enable our operators to compete and win in a wide variety of contingencies, including CT, crisis response, competition below the level of armed conflict, and as a force multiplier to the Joint Force if deterrence fails. Although our adversaries increasingly employ irregular warfare tactics, SOF support can ensure the

Department does not depend only on high-end warfighting and deterrent capabilities. Today, approximately 40 percent of SOF deployed forces are tasked with countering malign influence of our great-power adversaries.

Central to our irregular warfare efforts is a suite of legislative authorities that underpin our efforts to address these challenges alongside our international and interagency partners. We appreciate Congress's support for the extension and expansion of "Section 1202" authority to conduct irregular warfare operations and for the establishment of a new Title 10 funding authority for operational preparation of the environment activities in the National Defense Authorization Act for Fiscal Year 2021. Authorities such as these and Section 127e of Title 10 are cost-effective, agile ways for the United States to advance our security interests working by, with, and through partners.

We continue to invest in technologies and capabilities to empower SOF to operate in denied areas and conduct high-risk operations in remote and austere environments, operate seamlessly with our general purpose force counterparts, and produce scalable precision effects. For instance, USSOCOM is developing next-generation Intelligence Surveillance and Reconnaissance capabilities to enhance situational awareness for the SOF warfighter, even in contested areas. Similarly, we are making investments to enhance SOF maritime capabilities, including surface combatant craft, submersibles, and unmanned underwater vehicles, and working with the Department of the Navy to ensure integration of SOF operational concepts and capability investments related to great power competition.

USSOCOM is pursuing technological advancements designed to enhance network interoperability, enable secure communications for command and control, and employ data analytics, artificial intelligence (AI) and machine learning (ML) to enable our SOF to operate more effectively. In close collaboration with the Joint Artificial Intelligence Center, USSOCOM is adapting and employing AI to streamline a wide range of activities, such as intelligence analysis and operational functions. For instance, USSOCOM is leveraging AI/ML to optimize preventive maintenance for aircraft of the Army's 160th Special Operations Aviation Regiment (SOAR) that has demonstrated significant potential for increasing the operational readiness rate of the unit's fleet of aircraft.

USSOCOM has also employed innovative acquisition pathways, including mid-tier acquisitions to execute tailored acquisition strategies and to streamline capability delivery to the warfighter. Additionally, USSOCOM is leveraging public-private partnerships and deepening relationships with academic institutions and non-traditional partners, including through its pilot project to expand small business participation in technology development to enhance SOF warfighting capabilities.

TAKE CARE OF OUR PEOPLE

Consistent with the clear priorities outlined in the NDS and the INSSG, we continue to invest in the readiness of the force and the resiliency of our SOF warriors and their families. Despite the unique challenges associated with the COVID–19 pandemic over the past year, SOF have continued to maintain a high level of operational readiness in support of strategic priorities. COVID–19-related restrictions on CONUS and OCONUS movements have reduced flight hours and training opportunities, particularly alongside our overseas partners. Although the number of forces deployed overseas is down approximately 15 percent over the past year, nearly 5,000 SOF are currently deployed to 62 countries.

In the years following the terrorist attacks of September 11, the high demand for SOF resulted in a near-constant cycle of deployments for some capabilities. To address the strain caused by that operational tempo, we have taken a hard look at the forces that we can responsibly and sustainably provide to support global demand amid multifaceted and simultaneous mission requirements. Over the past several years, we have made considerable progress toward meeting the Department's requirement of a 1:2 deployment-to-dwell ratio across the force, meaning that a typical service member would expect to spend twice as much time at home station as on

deployment. We continue to make progress toward achieving this target with now more than 90 percent of the force at a 1:2 ratio or better.

The additional dwell time spent at home station is not only contributing to increased predictability for the force and improved work-life balance, it is also enabling additional time for training, screening, rest, refit, and reintegration. USSOCOM has also continued to meet the Department's goal of fewer than five percent non-deployable military personnel.

In addition to monitoring metrics of SOF readiness, we are closely evaluating how SOF posture relates to our ability to sustain CT and crisis response operations along with high-priority missions. We are also focused on limiting SOF deployments to those that require SOF-specific capabilities and training. For instance, the establishment of the Army's Security Force Assistance Brigade has provided a capable General Purpose Force option for training and mentoring foreign security forces. The combination of these efforts has helped ease the strain of a high and unsustainable rate of overseas deployments for SOF personnel.

In addition to reducing the strain on the force due to high operational tempo, the SOF Enterprise is further enhancing readiness by taking a holistic approach to caring for SOF warriors and their families. With the strong support of Congress, USSOCOM has continued to develop its Preservation of the Force and Families (POTFF) program to address SOF-unique challenges and to optimize physical, psychological, social, and spiritual performance. The POTFF program leverages a combination of USSOCOM, Service, and DOD resources to meet the needs of the various SOF components and individual unit commanders. These programs include injury prevention/strength training, performance nutrition, rehabilitative care, improved access to behavioral health and suicide prevention, family and community programs, promoting healthy living, and reinforcing resiliency and spiritual fitness.

Participation in the POTFF human performance program and neurocognitive baselining are now mandatory for all USSOCOM personnel. Our SOF warriors recognize POTFF as an invaluable resource for their readiness and career longevity, and data collected from our SOF commanders indicates that the program is having a significant and positive impact on the mission readiness of their units. SO/LIC is currently collaborating with the command to develop standardized and quantitative outcome metrics to help inform future resourcing decisions, and we look forward to working closely with the Committee to ensure we are achieving a solid return on this investment in our personnel.

Similarly, USSOCOM's Warrior Care program continues to provide specialized care for soldiers who have suffered physical or psychological trauma by providing SOF members and their families support through recovery, rehabilitation, and reintegration. We have no greater responsibility than to care for our SOF warriors and to provide them with a path to return to service and/or transition to civilian careers following their years of service. We appreciate the strong support of Congress for each of these efforts.

I remain concerned about instances of moral and ethical failings within the SOF community, and I know General Clarke shares this concern. Incidents such as these have no place in the military or our Department, and if not tackled head-on can erode morale and undermine trust and our moral authority with our partners and allies. I commend General Clarke for his initiative in directing a comprehensive review of SOF culture and ethics beginning in August 2019. The review was directed to address shortfalls and limitations of multiple previous studies and to build upon them to address enterprise-wide issues and to analyze data from across the SOF Enterprise.

SO/LIC strongly supported this effort, and SO/LIC personnel actively participated in the review, which entailed conducting in-depth interviews with approximately 2,000 personnel of all ranks within more than 50 SOF commands. Although the comprehensive review did not identify evidence of a systemic ethics deficiency, it did note that "in some instances USSOCOM's cultural focus on SOF employment and mission accomplishment is to the detriment of leadership, discipline and accountability," and it outlined concrete recommendations. My office is now helping to guide the Comprehensive Review Implementation Team, established to drive implementation of the review's recommendations. These recommendations address training and organization of the force, leader development, and the prevention of over-exertion on the force that we believe contributes in part to ethical lapses.

As we address challenges related to SOF culture and ethics, Secretary Austin has placed special emphasis on combatting sexual assault and addressing actions associated with extremist or dissident ideologies within the Department. The men and women who make up the SOF Enterprise deserve nothing less than a safe and supportive work environment—free from intimidation, harassment, and racial and cultural bias of any kind. We recognize that extremist ideology exists within our mili-

tary, and we must ensure that our service members honor the oaths they have taken to uphold and defend our Constitution against all enemies—foreign and domestic. For this reason, Secretary Austin directed a Department-wide stand-down to allow senior leaders to discuss the importance of our oath of office, impermissible behaviors, and procedures for reporting extremist behaviors. I am committed to working hand-in-hand with General Clarke in leading this effort on behalf of the SOF community, ensuring that our efforts are closely aligned with top-level guidance and actions and policies taken by the Department and the Military Services.

We recognize that many of the solutions have not yet been fully implemented and that true cultural change will require a sustained and focused effort over many years. I look forward to working with you and your staff as we strengthen the foundation of our culture and ethics throughout the SOF Enterprise. SO/LIC will continue to support this effort by focusing on those actions that fall within our administrative role overseeing the organization and training of SOF personnel and ensuring these efforts are adequately resourced. Working closely with USSOCOM and each of the Services, we will continue to develop and sustain a SOF culture of personal accountability that is worthy of the men and women that constitute our force.

We are similarly focused on enhancing the diversity within our SOF formation. As it stands today, our force is not adequately reflective of the American people. In addition to the moral imperative of addressing this challenge, we recognize that a more diverse force makes us more effective operationally by allowing us to draw upon diverse perspectives and talents and new ideas to enable us to prevail in the global contest for influence and legitimacy we are faced with today. Enhancing diversity within the force will become increasingly important as the Department places greater emphasis on operations in the information environment against foreign disinformation and malign influence.

Over the past year, ASD(SO/LIC) served on the Executive Working Group as part of the Department of Defense's Board on Diversity and Inclusion. A SOF officer on my staff sat on the DOD Board on Diversity and Inclusion to ensure that special operations-unique issues were reflected and considered as part of the overarching DOD efforts. Last year, SO/LIC, in partnership with USSOCOM's Commander and Senior Enlisted Leader, issued a memorandum to all SOF personnel emphasizing that diversity and inclusion is a strategic imperative to the mission of SOF. I co-chair, along with the USSOCOM Vice Commander, the SOF Executive Committee on Diversity and Inclusion to oversee and drive the development and execution of the USSOCOM Diversity and Inclusion Strategic Plan. I am pleased that USSOCOM has recently hired its first Chief Diversity and Inclusion Officer, and I look forward to working with the command as we collectively address this challenge.

In addition to addressing racial and cultural diversity within the SOF formation, we are also working to ensure that all SOF career fields are open to all who have the desire and meet the rigorous standards. Women have filled vital roles within the SOF community for many years, and we are proud that in the past year, two women have for the first time successfully completed the Special Forces Qualification Course and are currently serving as Green Berets. Although we recognize that we have much more progress to make in this area, these talented soldiers have blazed a path that we expect many others will follow.

Addressing each of these challenges will require a multifaceted, sustained approach, with a clear strategy, concrete objectives, and measurable benchmarks. Additionally, the continued institutionalization of ASD(SO/LIC)'s role in the administrative chain of command will provide additional avenues to highlight policy and resource issues affecting SOF, including diversity, ethics, and accountability. For instance, regularly occurring readiness briefings from USSOCOM to ASD(SO/LIC) now address sexual assault and harassment prevention and response, domestic violence, suicide prevention, COVID–19 vaccination rates, and accession/promotion by sex and ethnicity. SO/LIC brings unique perspective to these challenges, and you have my commitment that we will remain fully engaged.

SUCCEED THROUGH TEAMWORK

Secretary Austin's Message to the Force challenges us to join forces with our partners and allies; work in partnership across U.S. Departments and Agencies, with Congress, and with private industry; and to build unity of effort and missions throughout the Department, including strengthening civil-military cooperation. The men and women of the SOF community excel in building strong and lasting partnerships, including with our foreign, interagency, and private industry partners. SO/LIC and USSOCOM continue to deepen our civilian-military collaboration across a wide range of issues, including SOF personnel and readiness, budget and acquisitions, special access programs, and legislative affairs.

Civilian control of the military is a bedrock principle of our democracy, and strengthening civilian institutions within the Department is a key priority of Secretary Austin. As the Secretary testified before this Committee in his confirmation hearing, "the safety and security of our democracy demands competent civilian control of our armed forces . . . the subordination of military power to the civil." We also recognize and appreciate the Congress's strong interest in empowering civilian leadership, both within the Special Operations community and throughout the Department.

The continued institutionalization of the ASD(SO/LIC)'s role in the administrative chain of command, as codified in Title 10, is one of many examples where the Department is making progress in empowering civilian leadership, oversight, and advocacy within the Department's decision-making mechanisms. Over the past year, we have made progress in strengthening civilian oversight of SOF, but we recognize that more remains to be done to realize the full intent of recent legislative reforms to strengthen the ASD(SO/LIC)'s role and to establish the Secretariat for Special Operations. Recent actions include designating ASD(SO/LIC) as a Principal Staff Assistant to the Secretary of Defense for Special Operations administrative matters, establishing a position of Deputy Assistant Secretary of Defense to lead the Secretariat and to assist the ASD with those responsibilities. The ASD(SO/LIC) also has been added to numerous senior Departmental decision-making bodies, in many instances marking the first time the SOF Enterprise has had representation and a voice in these discussions and decisions.

Enhanced civilian leadership and oversight are essential to advocating for SOF within the Department and tackling key issues affecting the SOF Enterprise. These elements also help ensure an independent and objective assessment of military capabilities and policy issues. Further institutionalization of the ASD(SO/LIC)'s administrative chain of command responsibilities will require continued close coordination with senior DOD leadership, USSOCOM, and Congress. I fully embrace this role, and I also recognize that there is more work ahead as we fulfill Congress's intent. As these efforts mature, I look forward to working with you, General Clarke, and other DOD senior leaders to ensure that these reforms meet the intent of Congress and serve the interests of the Department and the men and women of our SOF community.

CONCLUSION

Mr. Chairman, I would like to conclude by thanking the Committee again for its strong support for our special operations personnel, who serve as a critical linchpin in safeguarding our national security—in wartime and peacetime. As an integral component of the Joint Force, SOF bring unique capabilities that complement and strengthen those of our general purpose forces as well as our interagency and international partners.

I thank the Committee again for the opportunity to testify, and I look forward to your questions.

Chairman REED. Thank you, Mr. Maier.

General Clarke, please?

STATEMENT OF GENERAL RICHARD D. CLARKE, USA, COMMANDER, UNITED STATES SPECIAL OPERATIONS COMMAND

General CLARKE. Chairman Reed, Senator Inhofe, and distinguished Members of the Committee, thank you for the opportunity, and I am honored to testify with Mr. Chris Maier and General Paul Nakasone. Also joining me is Chief Greg Smith, my command senior enlisted leader. Greg marked his thirty-first year in uniform this month and I am thankful for his continued counsel and leadership as he represents the almost 50,000 enlisted operators in our force.

USSOCOM, our structure, our authorities, and our purpose are the direct outcome of Congress and, in particular, this Committee. We strive to honor Congress' vision by training and employing the world's finest Special Operations Force, a team that is inclusive and professional, supremely competent and trusted, and reflective

of American diversity and values, and most of all, committed to our constitutional oath.

The incredible women and men of this command employ their unique skills globally, fully integrated with the joint force, and aligned with national priorities. SOF continue to deter and disrupt persistent threats by terrorist and extremist organizations. Twenty years of this fight have honed our capability and, most importantly, our resolve.

We remain oriented on these threats with approaches that are both, effective and sustainable, to defend the Homeland and our American people; additionally, we are well-postured within the joint force to compete against malign state influence. SOF provide unique value in this critical endeavor.

Below the level of armed conflict, SOF teams support a wide range of United States policy objectives and generate options to counter China, Russia, and other competitors. Often, our activities to counter violent extremist organizations have tangible, derivative value to counter terrorist, extremist organizations.

As SOF forged partnerships and built partner capacity, we gain access, placement, and influence in contested regions. Should future conflicts arise, our modernization priorities will provide interoperable forces that are able to win as part of the joint war-fighting concept.

Your continued support and the vital trust of the American people allow this command to support the Nation now and prepare for the challenges of tomorrow. Today, as we sit here, nearly 5,000 special operators stand vigilant in almost 60 countries. Their commitment to American security and prosperity is inspirational, and their enthusiasm to learn, adapt, and serve is infectious.

It is my honor to lead them and I look forward to answering your questions.

[The prepared statement of General Clarke follows:]

PREPARED STATEMENT BY GENERAL RICHARD D. CLARKE

Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee, thank you for providing this opportunity to discuss the posture of the U.S. Special Operations Command (USSOCOM). I am proud to testify alongside Mr. Christopher Maier, Acting Assistant Secretary of Defense for Special Operations and Low Intensity Conflict (ASD(SO/LIC)), and General Paul Nakasone, Commander of U.S. Cyber Command (USCYBERCOM).

The unwavering support of Congress, particularly this Committee, has ensured that our Nation's special operations forces (SOF) are the most capable in the world. Your support remains essential to our efforts to defend the Nation, care for our people, and strengthen alliances and partnerships. Your SOF remain engaged globally, ensuring violent extremists have no respite, while setting advantageous conditions across all domains to compete with adversaries. We are ready to meet today's requirements, while adapting to address tomorrow's challenges.

Today, I present an account of USSOCOM priorities, activities, and investments to provide the Nation with peerless SOF talent, tactics, and technologies. Each of you are keenly interested in how we are building a professional force, caring for our people, defending our Nation forward, and modernizing for the future. I will address each of these concerns.

The current strategic landscape comprises a complex set of problems presented by nation-state competitors and violent extremist organizations. Overmatch in strategic deterrence, conventional military force, and space and cyberspace capabilities are unequivocal necessities. However, our overmatch compels competitors to seek asymmetric avenues to attack, erode, or undermine the advantage and interests of the United States, our allies, and partners. Many of these challenges take place in the information space, with disinformation employed as a political weapon at unimagi-

nable speed and scale without regard for geopolitical boundaries. These concerns are further amplified by disruptive, destabilizing impacts of climate change, diminished influence of international institutions, and shifts in global power dynamics.

SOF are problem solvers, and their enduring value resides in their ability to adapt and combat asymmetric threats; employ precision and surprise to achieve strategic effects in conflict or crisis; and build access, placement, and influence through sustained partnership with foreign forces—all providing discrete options when conventional action is impractical. Our team extends beyond operators in the field, to a wide array of military and interagency support, as well as our unassailable partnership with ASD(SO/LIC). The oversight, policy guidance, and advocacy within the DOD provided by ASD(SO/LIC) are essential for the modernization, readiness, and wellbeing of SOF and their families.

The COVID–19 pandemic challenged our readiness in unexpected ways. Disciplined enforcement of DOD risk mitigation strategies has largely protected our uniformed, civilian, and contractor populations. The postponement of several major exercises and a majority of fiscal year 2020 Joint Combined Exchange Training events has been unfortunate, but barring long-term disruption, our joint interoperability and multinational partnerships remain strong. We appreciate the CARES Act funding from Congress that enabled us to reduce immediate risk through distribution of protective equipment and improved telework systems.

To address current and future strategic challenges, SOF are aligned with the priorities set forth in the 2018 National Defense Strategy (NDS) and newly published Interim National Security Strategic Guidance. The full range of USSOCOM's operational and institutional efforts coalesce within three broad objectives: strengthen our force and their families, enable the Joint Force to compete and win globally, and innovate to transform for the future.

STRENGTHEN OUR FORCE AND FAMILIES

The primacy of our people is central to the success of every endeavor. These competent and creative men and women stand ready to adapt and evolve to be the SOF the Nation needs to meet any challenge. Our commitment to advancing professionalism, improving policy to acquire and groom the right talent, and caring for the health and welfare of our teammates underpins every organizational decision.

ADVANCING PROFESSIONALISM AND CREDIBILITY

Last year, USSOCOM and ASD(SO/LIC) provided Congress the results of our Comprehensive Review which identified opportunities to improve our force and address lapses in leadership, accountability, and discipline. Our Comprehensive Review Implementation Team used that assessment to make institutional adjustments that promote active and engaged leadership at all levels accountable for force governance, leader development, sustainable tempo, and behavior reflective of Constitutional and Service values. Our forthcoming report submission to Congress will provide details on each of our actions thus far. This is a long-term, institutional approach, and we will see this process through to make our force better.

Furthermore, the urgent need to remove the scourges of sexual assault and extremism within the force has our full attention. USSOCOM supports DOD and Service policies on sexual assault and harassment that have improved reporting processes and victim advocacy. With maturing response and victim support systems, we are applying focused leadership toward prevention. Our SOF components are implementing tailored programs to promote a climate and culture intolerant of these abuses, committed to identifying and removing predators, and able to rapidly identify and address shortfalls.

Extremist and dissident ideologies conflict with our Constitutional obligations and corrode cohesion, discipline, and public trust. USSOCOM is fully engaged in DOD's effort to remove behaviors that promote discrimination, hate, or harassment. We are working closely with the DOD and Services to engage service members at all levels to ensure the force is undivided in their commitment to defend the Constitution against all enemies foreign and domestic.

MANAGING AND WELCOMING DIVERSE TALENT

In 1999, a RAND study identified barriers to the participation of women and minorities. Since that study twenty-two years ago, we have made limited progress in fully opening those doors. The past few years have provided the momentum and support to correct this problem for future generations. We continue to see positive movement with the contributions of women leaders in all four Service Component Commands and the selection of the first African American officers to command a

Navy SEAL Team and a Ranger Battalion. However, these steps are not sufficient as we envision a force that better reflects the society it defends.

We need men and women of all ethnicities and races along with a diversity of backgrounds and beliefs in our formation. Improving diversity and inclusion in our force is an operational imperative. In a force charged with solving multifaceted problems in a complex global environment, service members who are included, respected, and empowered are more ready to deter aggression and win wars. We developed a five-year Diversity and Inclusion Strategy and hired a Chief Diversity and Inclusion Officer. Together, USSOCOM and ASD (SO/LIC) chair the SOF Executive Committee on Diversity and Inclusion ensuring senior leader oversight and engagement to keep us accountable for tangible progress over time. We are absolutely committed to finding and removing barriers where they exist, and welcome all service members who have the desire and aptitude to pursue a career in SOF.

In addition to diversity of background, the current and next era of competition and conflict require different skills, specifically in artificial intelligence (AI) and digital technologies. In fiscal year 2020, our AI–Ready Workforce initiative took two steps forward in growing data-savvy leaders and technology experts inside SOF. First, in collaboration with Carnegie Mellon University and the DOD's Joint AI Center, we educated hundreds of senior and midgrade SOF leaders on basic AI principles and ethics. Second, USSOCOM welcomed our first cohort of data science interns. The program exposes talented students and graduates to SOF problems and harnesses their creativity and technical skill in developing AI solutions for the force. We are working with DOD to expand these programs and find flexible means to exchange talent with industry and academia to supplement the organic growth of AI-ready service members.

GROWING A HEALTHY AND RESILIENT TEAM

USSOCOM continues to build on the successes of the Preservation of the Force and Family (POTFF) initiative and the Warrior Care Program (WCP). The POTFF program gained early traction and notice through its work with physical readiness; however, 62 percent of the POTFF team's manpower now supports the psychological and cognitive performance of SOF. Today, the program continues to increase its focus on brain health and cognitive performance to address the growing cognitive load on operators facing technologically advanced adversaries and information-rich battlespaces. Not only must we build resilience, we must care for those in need, and we have no more sacred duty than to care for our wounded, injured, and ill teammates.

Since 2005, the USSOCOM Warrior Care Program (WCP), also referred to as the Care Coalition, has led this vital effort. Over the WCP's 16-year lifespan, 72 percent of wounded SOF have been retained in military service, with 61 percent returning to duty inside their original occupational specialty. This remarkable achievement has only been possible with Congress's continued support for these programs.

Lastly, USSOCOM has not diverted our attention from the crucial problem of suicide within our ranks. In 2020, we lost teammates to suicide and saw teammates hospitalized for suicide attempts. We are seeing a slight reduction in suicides among SOF; however, any suicide is an unacceptable loss of life. We continue to work closely with DOD and the Services to apply engaged leadership, education, and training resources to prevent these tragedies.

COMPETE AND WIN GLOBALLY

Special operations capabilities are essential tools to address both violent extremist threats and strategic competition with other states. Counterterrorism (CT) and Countering Violent Extremist Organizations (C–VEO) remains a priority mission for SOF, but we do not allow these missions to prevent us from also responding to the other threats facing the Nation. USSOCOM fluidly prioritizes force employment to build readiness, strategic flexibility, and apply unique SOF capabilities judiciously, in concert with the Joint Force and Interagency, to counter and impose cost on the malign activities of adversaries.

Today, we have nearly five thousand SOF deployed to 62 countries. We continue to streamline direct C–VEO investments abroad and rebalance SOF to force generation, modernization, and Great Power Competition (GPC) activities. Our deployed forces are down 15 percent from last year—the lowest since 2001, and in fiscal year 2021, nearly 40 percent of our deployed forces will focus on GPC requirements. In the coming year, we expect to achieve a sustainable balance of deployed forces across both C–VEO and GPC mission sets and reach the DOD's directed 1:2 deployment-to-dwell ratio for all SOF.

SUSTAINABLE C–VEO PRESSURE

Violent Extremism remains a threat to our national interests and the safety of our people. Drivers of extremist violence exist in deep, multigenerational ideological divisions that cannot be overcome quickly or with military force. This problem will persist, and USSOCOM is committed to a sustainable approach to C–VEO focused on threats that exhibit both intent and capability to export violence transregionally, specifically against the Homeland, while building burden-sharing partnerships that enable local and regional leaders to manage others. Additionally, USSOCOM fulfills our role as the DOD's Coordinating Authority for C–VEO by producing a quarterly VEO threat assessment that uses our inherently global outlook C–VEO engagement across multiple Geographic Combatant Commander (GCC) areas of responsibility (AORs) to inform department-wide policy, priorities, and activities.

Over the past year, USSOCOM has assumed moderate but acceptable risk to C–VEO capacity as we rebalance the force for modernization, readiness, and strategic competition. Despite these constraints, our unified action with joint, interagency, and multinational partners continues to illuminate terrorist attack planning, track illicit financing, and sustain pressure on transregional networks, all while meeting directed reductions in troop presence across multiple theaters. In Afghanistan, our forces continue to dismantle remnants of al-Qaeda (AQ) and Islamic State (ISIS) leadership and support the ongoing peace process. In Iraq, we continue to support multinational pressure on pockets of ISIS leaders and fighters while building the capacity of our partners in the Iraqi Security Forces. The information sharing model of Operation Gallant Phoenix continues to enable allies and partners to prosecute violent extremists. While we realize success on multiple fronts, challenges linger.

Capable terrorist leaders continue to operate in portions of Afghanistan. Despite losing territory and momentum, ISIS has avenues to reconstitute and spread transregional violence if pressure is abated. Violent extremism among internally displaced persons is a major security concern in the Middle East. In east Africa, VEOs remain a destabilizing force, reliable local partners are limited, and remotely delivering sustainable, effective pressure is problematic. In many remote areas, intelligence, surveillance, reconnaissance (ISR) and close air support assets are stretched thin and come at high cost, and we continue to work with DOD to address this issue.

SOF IN STRATEGIC COMPETITION

Competition among states remains a constant strategic consideration across multiple regions, and we must adapt to maintain advantage. Since their inception, modern SOF have contributed to this contest through the aperture of irregular warfare. These capabilities are as relevant today as they were at the onset of the Cold War. USSOCOM continues to rebalance SOF training, activities, and investments to better enable the Joint Force to compete below the threshold of armed conflict. For SOF, this requires us to reinforce core competencies in irregular warfare, foreign partner capacity building, clandestine activities, and information operations.

As the United States seeks to reinvigorate and modernize our alliances and partnerships to counter China, Russia, and other powers, SOF will play a central role. The "by, with, and through" approach inherent in SOF operations, coupled with our global C–VEO partnerships, information operations, and Counter Threat Finance authorities and expertise, present opportunities to maintain advantage. Our C–VEO activities provide cross-cutting value as SOF illuminate adversary activities, interests, and illicit finances and inform U.S. strategy and whole-of-government efforts. With U.S. SOF as the partner of choice for C–VEO, we will continue to capitalize on these investments that build credible partners and gain access and influence abroad to counter competitor ambitions and malign activities.

Information technology is another instrument used by our competitors, allowing countries like China and Russia to exploit and manipulate populations across the globe. As the DOD's Joint Proponent for Military Information Support Operations (MISO) and Coordinating Authority for Internet-based MISO, USSOCOM is positioning our psychological operations forces for today's environment. The Joint MISO WebOps Center (JMWC) is our flagship effort to coordinate MISO conducted via the internet and actively engage foreign audiences to expose, counter, and compete with hostile propaganda and disinformation online. In 2021, we will incorporate our first foreign partners and interagency liaisons.

The collaborative, mutually supporting relationship among the functional combatant commands is essential to maintaining U.S. advantage. These commands have global perspective and are well-positioned to observe our competitors' regional activities and goals across all domains. One example is USSOCOM's role as DOD's Coordinating Authority for Countering Weapons of Mass Destruction (CWMD), in

which we focus on improving Joint Force readiness to mitigate risk posed by WMDs and supporting unified approaches to countering proliferation of WMDs and related technologies, materials, and expertise.

Finally, we are grateful for a range of authorities granted by Congress that allow SOF to have outsized impact across multiple mission sets. Operations conducted under 10 USC § 127e (CT) provide flexible options to apply CT pressure in otherwise inaccessible or contested areas, and operations under fiscal year 2018 NDAA § 1202 (Irregular Warfare) are essential for applying SOF capabilities to illuminate and impose cost on malign actors. Additionally, authorities under 10 USC § 127f (Intelligence / Counter-Intelligence) and fiscal year 2020 NDAA § 1057 (Clandestine Operational Preparation of the Environment) replaced the Emergency and Extraordinary Expense authorization allowing application of SOF capability with greater efficiency and transparency.

INNOVATE TO TRANSFORM

Our SOF must modernize to compete and win. Guided by DOD priorities and operating concepts, SOF are divesting of legacy platforms that fail to provide increased value across GPC and C–VEO mission sets. Over the last five budget cycles, USSOCOM has realigned 14 percent (roughly $9B) of its Total Obligation Authority to modernizing SOF. We are focused on capability development improvements, digital age changes, and business administration reforms.

MODERNIZING CAPABILITY DEVELOPMENT AND ACQUISITIONS

The acquisitions authorities given to USSOCOM by Congress are indispensable in modernizing SOF capabilities. Our SOF Acquisitions, Technology, and Logistics team works tirelessly to improve the lethality, survivability, and sustainment of our operators and special-operations-peculiar equipment. Our research, development, and acquisition priorities center on adapting emerging technologies to empower hyper-enabled operators and teams. Our initiatives seek to accelerate gains in our ability to provide power, protection, and force projection at the tactical edge.

Over the years, SOF have been an incubator and testbed for new technology, and USSOCOM continues as a pathfinder for select capabilities. In fiscal year 2020, we achieved notable returns across multiple programs, including modernization of AC–130 and MC–130 platforms, fielding of next-generation software-enabled tactical radios, and successful combat tests of suitable Precision Strike missile prototypes. For future combat platforms, USSOCOM is working closely with the Services to introduce SOF requirements into the development process. Our collaborative work with the U.S. Army's Future Vertical Lift initiative is an exceptional example. By synchronizing requirements early, SOF will receive next generation systems that require minimal modification, and the Joint Force will save on sustainment and upgrade costs.

Critical SOF capability gaps still exist, and Congressional support is essential in delivering these assets to reduce risk for our operators and bolster SOF's ability to complement conventional capabilities in competition. To provide sustainable support to C–VEO operations, we are working with the U.S. Air Force to develop the Armed Overwatch program. This program will provide cost-effective, multipurpose aircraft to support operations in remote, austere areas for the foreseeable future. Additionally, we are working with the U.S. Navy to modernize Naval Special Warfare undersea warfare capabilities central to GPC. These include wet and dry submersibles, unmanned options, and offshore delivery solutions to provide coastal subsurface clandestine activities and access.

MODERNIZING A DIGITAL AGE FORCE

To compete in the current environment, we need world-class talent enabled by cutting-edge data management, software, and AI. USSOCOM is committed to serving as a vanguard for the integration of AI in mission command, intelligence analysis, and operations processes. Our newly published strategies for data and digital network architecture align with DOD's vision and advance a path toward greater data processing, network interoperability, and security in contested environments. Digital transformation, multi-domain data search and discovery, and cross-domain data solutions are USSOCOM critical priorities. Incorporating these capabilities with AI at the tactical edge within a secure, reliable cloud-computing framework is essential for competing with our adversaries across multiple domains. We are working closely with USCYBERCOM, DOD leadership, and the Services to develop and implement these solutions.

We are building a wide range of partnerships to explore the potential of data-driven technologies. Our work with the DOD's Project Maven and multiple service-led

initiatives have expanded our understanding of data collection and algorithm development to support the warfighter and lay the initial groundwork for future AI integration. Some of our newest partnerships focus on using AI to study cognitive performance and brain health. We are investing in AI technologies with goals to boost intelligence analysis and reduce overhead for ISR processing, exploitation, and dissemination; accelerate identification and response to online disinformation; improve reporting and decision making at the tactical level; enhance predictive maintenance and logistics; and optimize human performance.

MODERNIZING BUSINESS ADMINISTRATION

USSOCOM is steadfast in improving efficiency, costs, and transparency in business administration, auditability, and capability development. In fiscal year 2020, we completed our third financial statement audit and developed a roadmap aligned with DOD and Service plans to obtain a clean audit opinion by fiscal year 2028. Additionally, USSOCOM continues to reduce low-return activities and reallocate funds toward SOF, Joint Warfighting, and DOD strategic competition priorities.

We have also taken action to balance the SOF portfolio to address national priorities and SOF capabilities that will remain in high demand. In depth reviews of deployed forces and regionally aligned headquarters are reducing pressure on the force and allowing our teams to focus on priority tasks to build long-term readiness, assist the joint force in competition, and experiment for greater interoperability. Most importantly, these reviews are now integrated with the DOD's routine force management processes. These changes better posture USSOCOM to meet the full range of national priorities.

Our acquisitions team continues to be a defense leader in applying Middle Tier Acquisitions and Other Transactional Agreement authorities provided by Congress, and we have had continued success in leveraging our SOFWERX platform via a Partnership Intermediary Agreement. SOFWERX enhances USSOCOM's ability to collaborate and connect with a diverse network of small, non-traditional companies, labs, scientists and academia. The fiscal year 2020 NDAA § 851 authorization to use this platform to improve our interactions with Small Businesses through the Small Business Innovation Research pilot program has been especially effective. Since the pilot implementation, we have awarded 17 contracts with results that matter to both DOD and industry: a 200 percent increase in small business participation, 80 percent reduction in total contracting time, and 60 percent decrease in the time from initial award to prototype delivery.

CONCLUSION

In closing, USSOCOM is committed to providing the best trained and equipped SOF to support the Nation. We are actively realigning our operations, activities, and investments to align with NDS priorities and the operational needs of the GCCs, maintaining sustainable pressure on priority C–VEO threats while enabling the Joint Force to maintain advantage in competition, respond in crisis, and win in conflict. We are modernizing and innovating for the future, updating our organizational structures and processes for improved performance and affordability. Most importantly, we are staying true to our first SOF Truth—"Humans are more important than hardware"—by investing in our people, ensuring a trusted, capable, diverse, and committed force that is ready to meet any challenge. We are thankful to Congress for the foresight in creating USSOCOM many years ago, for trusting and sustaining this command as we developed a peerless force, and for your continued support for this truly special cohort of men and women who volunteer to undertake the most complex, challenging, and dangerous missions in defense of our great nation.

Chairman REED. Thank you very much, General Clarke.

General Nakasone, please?

STATEMENT OF GENERAL PAUL M. NAKASONE, COMMANDER, UNITED STATES CYBER COMMAND; DIRECTOR, NATIONAL SECURITY AGENCY; AND CHIEF, CENTRAL SECURITY SERVICE

General NAKASONE. Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee, I am honored to be here and to testify beside Acting Assistant Secretary Maier, and my good friend, General Rich Clarke. I am joined today by

CYBERCOM's senior enlisted leader, Command Sergeant Major Sheryl Lyon.

Entering our Army as an Arab linguist, Command Sergeant Major Lyon's 30-year career with airborne, special mission, and intelligence and cyber units makes her uniquely qualified to serve as USCYBERCOM and NSA's senior enlisted leader.

Over the past year, I emphasized the importance of defending the election against foreign interference. We did this through the Election Security Group, a combined team from U.S. Cyber Command and the National Security Agency. We built on the lessons from earlier operations and honed partnerships with the Federal Bureau of Investigations and Department of Homeland Security's Cybersecurity and Infrastructure Security Agency, sharing information with those who needed it as fast as possible.

We also worked with the National Guard Bureau to create a mechanism that enabled Guard units to share information about incidents quickly, easily, and uniformly.

U.S. Cyber Command conducted more than 2 dozen operations to get ahead of foreign threats before they interfered or influenced our elections in 2020. Three points stand out to me. First, U.S. Cyber Command must be, and is, able, ready, and willing to act. Second, USCYBERCOM's partnership with NSA remains the foundation of our success, and thirdly, we enable our domestic industry allies and partners by providing critical-threat information and insights which improve their ability to act under their unique authorities.

I am proud of the work the command and the Election Security Group performed as part of a broader government effort to deliver a safe and secure 2020 election.

CYBERCOM is building on a recent guidance from the Department seeking to promote readiness, improve training, and attract and retain high-end talent. Regarding readiness, CYBERCOM is improving its ability to monitor the status of forces provided by the services down to the team, mission element, and even individual levels.

CYBERCOM is expanding, enhancing the training that our personnel receive.

As the trailblazer for the Department of Defense's Cyber Excepted Service, the Command benefits from flexible hiring authorities to recruit civilian talent. Even with COVID–19 impacts and lengthy security-clearance timelines, that impact to the entire Department, CYBERCOM has offered and was able to attract a number of high-end talent to our force.

Diversity is what makes us better. Extremism can tear us apart. Last week at Cyber Command, we held a Secretary of Defense-directed stand-down day. Extremism has no place in the Armed Services and must not be allowed to affect our cohesion or impact the security of the United States.

At CYBERCOM, I have strived to cultivate an environment where personnel are empowered to report abuses and reject participation in activities that demean or harass their co-workers or neighbors. We owe it to ourselves, our workforce, and our Nation to set and be the example.

In closing, the cyberspace environment has changed significantly over the past 10 years. Adversaries are demonstrating a changed

risk calculus. They are undertaking malign activities in cyberspace at greater scope, scale, and sophistication. They desire to take on the U.S. cyberspace below the level of armed conflict.

To defend our security and our interests in this environment, U.S. Cyber Command must continue to adapt, innovate, partner, and succeed against such adversaries. The men and women at Cyber Command are truly grateful for the support this Committee and Congress has given to our command.

Again, thank you for your support, and I look forward to your questions.

[The prepared statement of General Nakasone follows:]

PREPARED STATEMENT BY GENERAL PAUL M. NAKASONE

Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee, I am honored to appear before you today and to represent the men and women of United States Cyber Command (USCYBERCOM). 2020 presented some unique challenges to USCYBERCOM that will inform our actions over the next year. Indeed, 2021 is offering opportunities for USCYBERCOM to build upon.

USCYBERCOM was established in 2010 and became a unified combatant command in 2018. Our mission is to plan and execute global cyberspace operations, activities, and missions to defend and advance national interests in collaboration with domestic and international partners across the full spectrum of competition and conflict. We direct, synchronize, and coordinate cyber planning and operations. Our three enduring lines of operation are as follows:

- Provide mission assurance for the Department of Defense (DOD) by directing the operation and defense of the Department of Defense Information Networks (i.e. the DODIN) and its key terrain and capabilities;
- Defeat strategic threats to the United States and its national interests; and
- Assist Combatant Commanders to achieve their missions in and through cyberspace.

In January 2021, our Cyber Mission Force (CMF) comprised roughly 6,000 service members and civilians out of an authorized a total of 6,187 positions. This includes Guard and Reserve personnel on Active Duty serving at our headquarters and on our CMF teams. For comparison, the 2018 DOD Cyber Posture Review counted about 238,000 personnel in the Department's cyberspace operations forces, including the CMF, USCYBERCOM's subordinate command elements, cybersecurity service providers (CSSPs), special capability providers, and specialty units.

The DOD depends on USCYBERCOM and its performance. Every operational plan and every mission across the Department builds from the assumption that we will be able to assure that the bandwidth and data that military forces require will be accessible and trustworthy.

A Look Back at 2020

In 2020, USCYBERCOM made progress in the face of significant challenges.

Operationally, we helped to lead the successful defense of the 2020 elections and played a key role in the Government-wide response to the SolarWinds breach. We also gained Departmental commitments to enhanced resources and a better alignment of cyberspace responsibilities and authorities for the Command (including the Fiscal Year 2021 NDAA elimination of the $75 million cap on funds available for acquisition activities).

We saw increasingly capable cyber adversaries target the United States via influence operations, efforts to compromise sensitive data, and attempts to gain access to our weapons systems. Adversaries still seek to exploit gaps and seams between our organizations and authorities:

- China is a sophisticated cyber adversary. Beijing conducts effective cyber espionage and other operations and has integrated cyber activities into its military and national strategy. Despite public exposure and indictments of Chinese cyber actors, China remains focused on shaping the global narrative and exploiting American networks and cyber systems.
- Russia is a sophisticated cyber adversary. It has demonstrated its ability to conduct powerful influence campaigns utilizing the medium of social media. Moscow conducts effective cyber-espionage and other operations and has integrated cyber activities into its military and national strategy. Despite public exposure

and indictments of Russian cyber actors, Russia remains focused on shaping the global narrative and exploiting American networks and cyber systems.
- North Korea has demonstrated the capability and intent to strike the United States in cyberspace. Its regime sponsors cyber exploitation of international finance via cyber means to evade United Nations sanctions.
- Iran has demonstrated both the capability and intent to strike the United States in cyberspace. Iranian cyber actors are growing adept at exploiting systems as well as delivering disruptive and destructive attacks, and have attempted to execute a series of influence campaigns.
- Finally, non-state actors and criminal cartels remain threats to us and our interests, whether by financing, recruiting, and advertising violent extremist tactics, or through the exploitation of data for theft or ransom.

All of these actors felt the effects of the COVID–19 pandemic – as did we. Fortunately, we saw their operational tempo briefly diminish at roughly the same time that we had to restrict access to our facilities. COVID–19 mitigations remain in full effect across our enterprise, and we are vaccinating our personnel as fast as vaccine supplies and local conditions allow. Overall, I am pleased that the pandemic has not limited the force's readiness or posture to fulfill its missions.

Last year, I emphasized the importance of defending the election against foreign interference, in part through the Election Security Group (ESG), a combined team from USCYBERCOM and the National Security Agency (NSA). The ESG ensured that intelligence informed whole-of-nation efforts to harden defenses and prevent or disrupt threats to the U.S. elections. We built on lessons from earlier operations and honed partnerships with the Federal Bureau of Investigation (FBI) and the Cybersecurity and Infrastructure Security Agency (CISA), sharing information with those who needed it as fast as possible. We also worked with the National Guard Bureau to create a mechanism that enabled Guard units to share information about incidents quickly, easily, and uniformly. We called it the Cyber 9-line, given the nine lines of information a reporting entity would complete. As the election approached, every state had joined this program. I am proud of the work the Command and the ESG performed, as part of a broader government effort, to deliver a safe and secure 2020 election.

USCYBERCOM conducted more than two dozen operations to get ahead of foreign threats before they interfered with or influenced our elections in 2020. Three points stand out for me:
- First, USCYBERCOM must be ready and able to act. Threats can arise rapidly, and opportunities can be fleeting. Our ability to operate successfully in cyberspace is a function of streamlined processes, mission readiness, and the trust of our various mission partners.
- Second, USCYBERCOM's partnership with NSA remains the foundation of our success. Working together under one leader again demonstrated the ability of both organizations to operate with speed and agility to achieve outcomes for the Nation.
- Third, we enable our foreign allies and partners, just as they remain crucial to our ability to act. Operating with allies and partners allows each to magnify each other's unique strengths. Our efforts over the last year highlight the value of not only operating but training together as well.

USCYBERCOM supported the combatant commands with a wide range of other operational accomplishments over the last year. Counterterrorism operations in cyberspace are continuous, helping to protect the force and prosecute targets in Afghanistan and other regions on behalf of USCENTCOM and USSOCOM. We are also shifting JTF–Ares' focus (though not all of its missions) from counterterrorism toward heightened support to great power competition, particularly in USINDOPACOM's area of responsibility. Finally, we are working across the board to ensure that the data links that our warfighters rely on are protected and resilient.

In recent months our priority has been mitigating the threat to federal systems from malicious cyber actors compromising widely-used SolarWinds software and exposing thousands of public and private systems to targeted exploitation. The U.S. Government learned of the compromise in December 2020. As an immediate response to this threat, I directed the creation of a combined USCYBERCOM–NSA team in support of the U.S. Government's efforts, through the Unified Coordination Group, to mitigate the compromise. To date, we have yet to identify any compromise of DOD information networks in the unclassified or classified domains.

My teams have provided almost 100 days of continuous support to the whole-of-government mitigation effort. I have organized our efforts across three lines of effort:

1. *Bound the Problem.* Using both automated and manual processes, we worked to determine the scope of SolarWinds Orion software products employed across the DODIN. Each instance was immediately isolated and disconnected from DOD networks. Meanwhile, NSA worked to understand the adversary's intent and illuminate additional tradecraft and infrastructure to inform threat detection and asset response activities. Finally, we prepared to support and assist other federal departments and the Defense Industrial Base in bounding their respective problems.

2. *Expel the Adversary.* This is a continuous process driven by USCYBERCOM's Joint Force Headquarters-Department of Defense Information Networks (JFHQ–DODIN), which has directed network administrators to enumerate, isolate, and remediate all affected systems before they are reconnected to the DODIN. We have yet to find any adversary presence on the DODIN as a result of the SolarWinds compromise. We continue to work with federal partners to share best practices and expertise to expel the adversary from affected systems.

3. *Impose Cost.* USCYBERCOM and NSA are both planning and informing the whole-of-government response options to the SolarWinds supply-chain compromise and the adversary's associated campaign. Policymakers are considering a range of options, including costs that might be imposed by other elements of our government.

The SolarWinds incident occurred because highly skilled, sophisticated actors inserted a malicious cyber capability into a commercial product that was then downloaded and installed world-wide. The nature of the tradecraft employed by this actor reinforces the imperative for government and industry to collaborate in detecting and responding to malicious cyber activity. We in the U.S. Government, together with our industry partners, must improve our defensive posture to prevent and minimize the impacts and the cost in time and money of remedying such vulnerabilities and incidents, and we must rapidly expose and respond to malicious cyber activity in the future.

Our Focus for 2021

My focus for the coming year is to broaden the foundation for operational progress. In particular, we are building on recent guidance from the Department, seeking to promote sustainable readiness; to improve training; and to attract and retain high-end talent across our military, civilian, Active Duty, and Reserve workforces.

Cybersecurity and defensive cyberspace operations mean mission assurance for the DOD and thus are integral to our Nation's security. For 2021 and the years ahead, there are several areas where USCYBERCOM plans to improve. Our growth to date has highlighted certain misalignments between the responsibilities I have as Commander and the resources and authorities to execute those responsibilities. The following initiatives reflect the Department's guidance to align mission, responsibility, and accountability for the Command:

Accountability: The Secretary of Defense in late 2020 issued a directive emphasizing accountability by aligning cybersecurity efforts with operational risk decisions.

USCYBERCOM will improve risk management while also holding commanders and directors accountable for their risk decisions.

Budget Control: USCYBERCOM's fiscal year 2021 budget is roughly $605 million, which covers the headquarters staff and the Cyber National Mission Force. Meanwhile, 27 different components shape the Department's overall Cyber Activities Budget, which averages about $10 billion a year. USCYBERCOM is working with the Services and the Office of the Secretary of Defense to direct CMF funding in a more collaborative effort while allowing for informed tradeoffs (across the Services) based on operational needs.

Team Realignment: The CMF's original force structure was set in 2012, and several teams were originally aligned to support the counter-terrorism fight. With the return of great power competition, USCYBERCOM is realigning some teams to focus on key nations.

Force Growth: Recent demand across DOD has demonstrated that the original 133 teams in the CMF are not enough. The strategic environment has changed since the original CMF was designated in 2012. Added forces will ensure USCYBERCOM can fulfill its responsibility as both a supported and a supporting command.

Training: USCYBERCOM is centralizing the provision of advanced training. The Army will serve as the executive agent for advanced cyberspace training. This will ensure that each Service presents well-trained personnel to USCYBERCOM who can contribute to our missions as soon as they arrive in the Command.

Sustainable Readiness: We are improving our ability to monitor the status of forces down to the team, mission element, and even individual levels in order to identify and remedy challenges to gaining and maintaining necessary readiness. We

are working to better provide commanders with the situational awareness they require to assess risks and make informed decisions, not just in operations but also in maintaining the force as a whole. I am pleased with the progress here, but more needs to be done.

Domestic and International Partnerships: Such ties collectively are a force multiplier when it comes to cyber operations. USCYBERCOM is enhancing its existing relationships and forging new ones based on U.S. Government priorities. We have been sending teams to "hunt forward" at the invitation of foreign governments, helping them find adversary malware on their governmental systems. Such persistent engagement in cyberspace lets the Command deliver outcomes in competition with adversaries, both by enabling our partners and by acting when called upon.

Realigning Cyber Protection Teams: USCYBERCOM is working with the combatant commands to ensure they have dependable defensive support for their missions while we retain forces to deal with global challenges to the DODIN.

USCYBERCOM executes its operations employing the Joint Cyber Warfighting Architecture (JCWA), which is a cyber capabilities architecture that enables us to act against our adversaries in competition, crisis, and conflict in cyberspace. When fully realized, JCWA will provide unified capabilities for Cyberspace Operations Forces, integrating the data from offensive and defensive cyberspace operations in ways that help commanders gauge risk, make timely decisions, and act.

To help drive operational needs and capability development, USCYBERCOM activated a JCWA Capability Management Office (JCMO). This promoted unity of effort across the Command, the Services, and Department in building the many and varied components that together comprise the JCWA. Those components include:

- Improved operational architectures that give our forces the ability to operate at-scale from multiple locations;
- Data sharing and analytics (the Unified Platform) that provide insight for offensive and defensive operations;
- Command and control features that display the readiness of our forces as well as operational status. One tool in this suite, Project IKE (soon to be Joint Cyber Command and Control), has ensured we can measure readiness down to the individual level while informing exercises, training, recruiting, and even retention;
- Tool development capabilities that are responsive to operational needs and increasingly able to focus talents and innovations when and where they are needed most;
- Realistic collective training (via the Persistent Cyber Training Environment, or PCTE) that lets us rehearse missions and even exercise with Reserve Component and foreign partners.

Last year's operational successes would not have been possible without the Department's Total Force, which includes the National Guard and the Reserves. Before the 2020 elections, the Guard provided local connectivity and insight on key events like Super Tuesday. They also played vital roles during the pandemic. For example, the National Guard and Reserve provided cyber forces in response to a Defense Support to Civil Authorities (DSCA) request from the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency in support of Operation Warp Speed, providing cybersecurity support to the pharmaceutical industry as it developed COVID–19 vaccines in record time.

Finally, the Reserve Component's ability to hire qualified cyber warriors who decide to leave Active Duty upon completion of their service commitment has proved invaluable. Members of the National Guard and Reserve have relevant private-sector experience in fields of strong interest to the Department, and many of them work for some of the Nation's top-tier technology companies. The Air National Guard, for example, has built both offensive and defensive cyber units in which members departing Active Duty can transfer to part-time status while they pursue careers in the civilian sector.

As the trailblazer for the DOD's Cyber Excepted Service (CES) personnel authority, the Command benefits from flexible hiring authorities in filling civilian vacancies and recruiting top cyber talent. Even with COVID–19 impacts and security clearance timelines that continue to challenge the whole Department, USCYBERCOM offered competitive compensation and incentives to our best candidates. We are also partnering with the National Security Innovation Network (NSIN), a Defense Innovation Unit program office, to conduct a virtual hire-a-thon that runs through this month. The most recent hire-a-thon garnered more than 260 resumes from people eager to join our team, and similar events are planned for the future. Civilians continue to play an important role for USCYBERCOM, providing vital continuity in several areas.

Conclusion

USCYBERCOM is actively engaged in addressing the Nation's challenges from sophisticated and evolving adversaries in cyberspace. The Command supports other combatant commanders in every geographic and functional area of responsibility, while implementing the Department's Defend Forward strategy and enhancing our capabilities.

For the year to come our priorities are set. We will focus on great power competition through persistent engagement, especially in support of USINDOPACOM, and particularly through improving the efficiency and effectiveness of DODIN operations and defensive cyberspace missions. To prepare for the approved growth in the CMF, we will enhance our control over resources for the force, improve its readiness (including the metrics we require in doing so), and consolidate CMF training. We will integrate the development efforts ongoing in support of the JCWA. We will also improve recruitment and retention of top military and civilian performers. All of these measures will enhance the proficiency of USCYBERCOM and boost its ability to provide defensive security assurance and options for policymakers and commanders at the senior levels of the government and the Department of Defense.

The men and women at USCYBERCOM are grateful for the support this Committee and Congress in these efforts. I thank you for that support in the important work that we have undertaken together, and now I look forward to your questions.

Chairman REED. Thank you very much, General Nakasone.

Let me make a few points as reminders. Again, at 10:45, we are scheduled to have four votes and we will continue the hearing as we go back and forth and vote. There is a closed session after this hearing in SVC–217 and we will, as soon as we conclude, go to SVC–217.

This is a hybrid hearing, so the questions will be by seniority, not by arrival time, 5-minute standard questions, and please mute your mics so that we can have no disruption of the questioning.

Mr. Maier, again, what is the status today of the Department's efforts to empower ASD SO/LIC and what additional resources or authorities do you believe we need from the Congress?

Mr. MAIER. Thank you, Chairman.

So, the current status is one that is SO/LIC, as a standalone organization, both its policy components and its service secretary-like our 922 component outside of Office of the Secretary of Defense (OSD) Policy, Secretary Austin and Deputy Secretary Hicks are relooking that to see if that continues to make sense. I think one of the potential options is to determine a way to better integrate the policy components that were removed from SO/LIC towards the end of the last administration, back more integrated into policy, but under no circumstances, am I aware of any Courses of Action (COAs) that are being discussed that would remove the service secretary-like responsibility from remaining a principal staff assistant and a direct-report up to the Secretary of Defense. So, I think your legislation has been very clear on that point.

As to progress to date, we continue to make progress, I think, on building the capability, in many cases, in the form of expertise and people, on the components in that administrative chain of command. So, the SSO, or Secretariat for Special Operations, that was explicitly directed in the 2021 National Defense Authorization Act (NDAA) is something we built to about 40 people at this point and it includes a cross-section of experts from the budgeting world, the legislative world, the acquisitions world, really, the, if you will, the nascent or core group of people that will perform that service secretary-like function.

But we are not at the point, Chairman, of irreversible momentum at this point and we are not at the point of having something that is probably sufficient to do the roles that have been described in multiple NDAAs at this point.

The last thing I will say is, I do think the relationship with Special Operations Command is very strong. One of the things that General Clarke and I benefit from is having worked together on multiple occasions in the past, and I think that leadership connection helps to ensure our staffs are proceeding in that direction of collaboration, partnership, and civilian-military relationships.

Chairman REED. Thank you very much.

General Clarke, let me, again, commend you from conducting the review of culture and ethics. These are issues that every organization and, particularly, military organizations have to confront. Sixteen recommendations were generated by the panel. Without going into detail on every recommendation, can you highlight the key ones and the overall status of those recommendations, implementation-wise.

General CLARKE. Yes, sir, I can, if I can get the mic working. Sir, the primary finding, as you pointed out, was, in fact, that the focus on overemployment and mission accomplishment led to the detriment in leadership accountability and discipline. To that end, with those 16 recommendations and the findings from that, our focus, first, was to the overall employment and how many forces were deployed as we looked at, and we conduct our own zero-baseline review of forces employed. Through that, have reduced the approximate SOF employment by about 20 percent.

But we also, probably most importantly, have reduced the amount of headquarters that were forward that put leadership forward, therefore, you didn't have the leadership that was back during the force generation so that the leadership was not engaged and present.

The other specific aspects that we have looked at is the training of our forces as they go through the various pipelines, but also our assessments to improve those. But at the end of the day, Senator, it's about engaged leadership to reduce the amount of incidents that SOF has had in the past.

Chairman REED. Thank you very much, General.

General Nakasone, SolarWinds, the Microsoft hack, they don't appear to be the garden-variety type of back-and-forth that we have seen from nation states.

Are we into a new era in which our adversaries are conducting more and more aggressive attacks that are designed to be just short of a redline that would trigger some type of conventional response? Are we in new terrain?

General NAKASONE. Chairman, I think that, as you point out, what we have seen from both, the SolarWinds and the Microsoft intrusions, is an increasing level of sophistication. This is a scope, a scale, a level of sophistication that we hadn't seen previously. This isn't, simply, you know, email phishing attempts; this is the use of supply chain or this is the use of vulnerabilities we hadn't seen before.

In terms of this changing risk calculus for our adversaries, their intent, obviously, we continue to monitor, but for us, I think it is

the clarion call for us to look at this differently. How do we ensure we have, as a nation, both the resiliency and the ability to act against these types of adversaries?

Chairman REED. We have structurally a gap between our civilian authorities and our military authorities that is being exploited by our adversaries?

General NAKASONE. Chairman, for both of the intrusions, what we have seen, I think I would point out would be two critical areas that we need to address as a nation. First of all, as you point out, it is not the fact that we can't connect the dots; we can't see all of the dots. So, my authorities and my responsibilities, both as the commander of U.S. Cyber Command and as the director of the National Security Agency, are rightly outside of the country.

But in terms of internal to our Nation, our adversaries understand our policies and our laws and the timing to be able to use our infrastructure to achieve access to these companies and have an impact.

Thank you very much, General.

Senator Inhofe?

Senator INHOFE. Thank you, Mr. Chairman.

I am going to go back to a couple of things that I referred to in my opening statement, and I know that, Mr. Maier, in your opening statement, you addressed this. I would like to have a little more detail and maybe aim this at both General Clarke and at you.

We all understand what history has taught us, that if we take our pressure off of the terrorist groups, they are going to rebuild and threaten and all that, so things have to be done at the same time. The two things that I am concerned with still, and specifically getting into resources and capabilities, trying to balance the NDS, and of course we know what we are supposed to be doing there, the requirements to modernize our forces to compete with China and Russia, that is on one hand, but against the need to maintain the pressure on ISIS and al Qaeda, especially in places like Africa.

Do you really think that you have the resources necessary to accomplish both of these?

This is a place where you would want to come to, because if you don't, we need to know about it. Would you respond to that in some detail.

Mr. MAIER. Ranking member, yes, I very much agree with the idea that we have got to be able to do both and as I think General Clarke referred to, in some cases, we can do both with the same forces, but in a lot of cases, we can't.

I mean, in the case of Somalia, there were, as you know, a lot of changes made over the last few months, including moving forces out and there is a policy-review underway now, looking at not only that decision, but how we ultimately posture our forces to ensure we have the right capabilities there and in other places.

I think one of the benefits of the beginning of a new administration is, there are a number of posture reviews and a lot of assumptions are underway. One of the key elements of that is just as you described, how do we weigh the need to continue to protect the American public, citizens, our interests against the al Qaedas, and ISIS, and their affiliates that are still out there, even as we look

to, in some cases, change our capabilities or our posture or our focus towards the peer competitors that we face.

So, this is something that I think I would be happy to drill down in more specifics as we go issue by issue or place by place, but I think my take on this is the counterterrorism fight is not over. The NDS says that, and I think that has been reinforced in the early reviews coming out of these policy reviews.

Senator INHOFE. Okay. Now, General Clarke, do you essentially agree with this?

General CLARKE. Senator, I——

Senator INHOFE. Okay. Well, I think we have a mic problem there.

But let me go back. You brought up Somalia. Now, this taking some of our resources out of Somalia, going into Kenya and some other areas, that was actually a policy of the previous administration and I disagreed with it at that time.

Now that we have already done this, Mr. Maier, what is your feeling now, was that the right move or was that not the right move? What kind of results are we getting now?

Mr. MAIER. Ranking Member, I think we have a review underway right now that is weighing all of this. I think from my perspective, there are probably significant downsides to the pull-out from the perspective of cost and effectiveness, but that is my initial look, and this will have to be an interagency look, but that is something that is being looked at both, from the counterterrorism perspective and the broader, regional objectives we have in the Horn of Africa.

Senator INHOFE. Well, I would like to be in on that because I was pretty outspoken when that decision was made and I would like to see how we are doing on that.

This was brought up already by the Chairman, the Russian SolarWinds cyberattack to the Chinese hack into Microsoft, and all that. We know those problems are there.

DOD began building a total of 133 CMF teams in 2012 and reached full operational capacity with over 6,200 cyber personnel in May of 2018.

General Nakasone, SolarWinds and Microsoft Exchange cyberattacks demonstrate we are vulnerable, we have vulnerabilities out there. What authorities or resources do you need, again, it is kind of the same question I asked Mr. Maier, what resources do you need to accomplish what we have to accomplish, because this is the place you go to for resources.

General NAKASONE. Ranking Member, thank you very much for the question.

I think, first of all, just taking a step back, we as a nation right now, are taking a very hard look at both of these intrusions. I think there are two gaps that are being addressed right now that have to be addressed and one of them is this idea of information sharing. These attacks took place within the United States, these intrusions, and there are, right now, legal barriers and disincentives for the private sector to share information with the Government.

We have a difficulty, as a government, understanding the totality of the actual intrusion, so that is being worked. The second piece is, as I mentioned to the chairman, we have an inability to see ev-

erything. So, we, as U.S. Cyber Command or the National Security Agency may see what is occurring outside of the United States, but when it comes into the United States, our adversaries are moving very quickly. They understand the laws and the policies that we have within our Nation, and so they are utilizing our own infrastructure, our own internet service providers to create these intrusions.

The resourcing of U.S. Cyber Command right now to include the 133 teams has been instrumental in us being able to have an ability to act. Certainly, we are looking as a department, if further growth is necessary, we will come back to the Committee if that is a requirement.

But I would say the first two pieces, being able to identify and being able to fix those areas, are part of the resilience of the Nation that has to be addressed.

Senator INHOFE. Okay. That is very good.

My time has expired, but we are interested and is it a work-in-progress right now and you are making headway, I assume.

Thank you very much, Mr. Chairman.

Chairman REED. Thank you, Senator Inhofe.

Senator Shaheen, please?

Senator SHAHEEN. Thank you, Mr. Chairman, and thank you to each of our witnesses.

General Nakasone, I want to congratulate you on the work that Cyber Command did on the elections in 2020 and your also mentioning of the National Guard. The Guard in New Hampshire were very helpful in securing our election there.

But as you point out, we still have challenges ahead and the Defense Intelligence Agency's defense intelligence officer for Cyber, James Sullivan, recently asserted that Russia right now is clearly ahead and the more aggressive and practiced operator in information operations.

So, how should we, do we need more authorities to allow Cyber Command to respond to what is happening in Russia?

You talked about the gaps between the private sector and the public sector. Do we need a cyber security czar, someone who is going to coordinate the activities on both, the defense side and the private sector side?

What else do we need to do in order to respond to this threat?

General NAKASONE. Senator, I think there are two pieces that are really important for us to continue to focus on regarding the threat. First of all, as I mentioned, the resiliency piece. We can have all the capabilities that we want, all the teams that we want, but if there is a hole in the bucket, and we are filling water, and the water is coming out faster than we can fill it in, there is a problem. That is the analogy I would use in terms of our resiliency right now. We have to be able to see what is happening in terms of the broad depth of our Nation.

The other piece is that we should understand what our adversaries are doing. They are no longer just launching their attacks from different parts in the world. They understand that they can come into the United States, use our infrastructure, and there is a blind spot for us not being able to see them. Those are critical pieces.

The other piece that I would come back to, in terms of your information operations question, that is something that both General Clarke and myself have taken on, and I think that you rightly point out that there is work that we have to do here. We have done a tremendous amount in terms of understanding and operating against adversaries to our election, but now we are in the area of great power competition. Is it the ability for multiple combatant commands, not just U.S. Cyber Command, but our geographic commands like European Command and U.S. Indo-Pacific Command (INDOPACOM) and U.S. Special Operations Command to harness the abilities that we have collectively against adversaries that are using information against us.

Senator SHAHEEN. So we have had, I remember several years ago we had a discussion in this Committee about whether cyberattacks were an act of war and at what point we should consider them an act of war and we never resolved that discussion.

Is that a discussion we should get back to and should we change policy, with respect to cyberattacks on the United States?

General NAKASONE. So, that is obviously a policy question that I would leave to, you know, the policy experts in the Department of Defense and the administration.

In terms of my role in being able to ensure that the Nation has capabilities and capacities, what we are focused on is ensuring we understand our adversaries, understand what our adversaries are attempting to do, and having the capabilities and the capacity to be able to get after those adversaries.

Senator SHAHEEN. Thank you.

I would argue, Mr. Chairman, that we should revisit that discussion in this Committee.

General Clarke, there is a lot of debate right now about whether according to the agreement we made in Afghanistan with the Taliban, that we should withdraw our troops by May 1 and I have been an opponent of doing that because I question whether we have the capacity right now within the Afghan forces to be able to respond to the Taliban.

Can you give us an update on where you think the Afghan security forces are in terms of their ability to respond to the threat.

General CLARKE. Senator, I was recently in Afghanistan and met with the head of their new, what they have stood up as a joint special operations command. While progress has been made, and I found a very dedicated commander in General Aziz, I think the capabilities that the United States provides for the Afghans to be able to combat the Taliban and other threats that reside in Afghanistan are critical to their success.

Senator SHAHEEN. I find it particularly troubling that violence has increased on the part of the Taliban and in the last couple of months, we have had directed assassinations against civil society leaders in the country in a way that is clearly designed to take out the potential for leadership in the country if western forces withdraw.

Do you think that presents an added risk to Afghanistan?

General CLARKE. Senator, it is clear that the Taliban has not upheld what they said they would do and reduce the violence. While, on the positive side, they have not attacked U.S. forces, it

is clear that they took a deliberate approach and increased their violence since the peace accords were signed.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Shaheen.

Now, via Webex, Senator Fischer, please.

Senator FISCHER. Thank you, Mr. Chairman, and thank you gentlemen, for being here today.

General Nakasone, I recall the 2015 Rose Garden announcement with President Obama and President Xi that a common understanding had been reached to halt China's state-sponsored cyber theft of intellectual property. Over 5 years later, how would you assess that commitment and has China's actions matched its words?

General NAKASONE. Senator, based upon what I have seen over the past several years that I have been in command of United States Cyber Command and as the director of the National Security Agency (NSA), I have seen the Chinese continue to utilize cyber activities below the level of armed conflict to steal our intellectual property, to steal our personal identification, and at times, attempt to influence our populous.

Senator FISCHER. More specifically, did this agreement have any impact on cyberattacks against our defense industrial base?

General NAKASONE. Senator, if I might, I would like to take that question for the record just because we are learning things every single day and I want to make sure that it is a fulsome answer.

Senator FISCHER. Okay. Thank you.

What lessons have you learned from the experience, especially on how we can reduce this hostile cyber activity that we are seeing in cyberspace?

General NAKASONE. I think the first lesson is that we should all take this as a wake-up call. That this is not business as usual, as the chairman had mentioned.

These are adversaries that are operating with increased sophistication, scope, scale, and I mentioned sophistication of what they are doing.

The second piece is that this is about partnerships for us as a nation. How do we drive a better partnership between what the public needs and what the private sector can offer?

That information sharing that I mentioned is really critical for us to have success in the future.

Then the last piece is that we truly need to look at the ability for us to see ourselves and right now it is difficult for us to see ourselves because we have adversaries that are coming into our Nation and being able to utilize our infrastructure very timely and very effectively against us.

Senator FISCHER. Thank you, General.

General Clarke, your predecessor testified that, quote, our effectiveness over the last 15 years does not necessarily equate to success against near-peer competitors. We also require urgent investments in capabilities necessary for denied battlefields of the future. This includes submersibles, terrain-following avoidance and all-weather radar, advanced electronic attack capabilities, countermeasures, and precision munitions. We must enhance our effectiveness in partnership with these services, end quote.

Do you agree with that?

General CLARKE. Senator, I do agree with that and I will tell you since General Thomas, my predecessor, made those remarks, SOCOM has been on that path to, in fact, ensure that we are cementing things in place that will allow our force to modernize for both, competition and for future conflict.

Senator FISCHER. What progress has SOCOM made in developing these higher-end capabilities?

General CLARKE. Senator, both team with both, academia and with industry. We are making sure, first, that we are not procuring capabilities that can't be used in a sustainable extremist fight, but that can also be used in near-peer, and we are focused very highly on next-generation, ISR, mobility, and putting a significant amount of effort into data and our networks to ensure that we have precision strike and effects into the future.

Senator FISCHER. In light of the priorities that have been laid out in the NDS, how is SOCOM balancing its investments to operate against those near-peer competitors, like China and Russia, with efforts to fulfill its global counterterrorism requirements?

I would like to know where, if you could answer that, and then let me know where you are willing to accept risk.

General CLARKE. Senator, first, on the acceptance of risk, intel drive ops, and where we put our focus on are those most virulent threats that could actually come back to our Homeland and the persistent threat against threats like al Qaeda and ISIS and those networks.

But then as we have looked at those sustainable capabilities against those threats, what else can come back, and that goes with both access and placement in other countries around the globe where counterterrorism can also equate to great power competition in someplace like the Philippines where our access and placement in helping the Filipinos fight ISIS allows us, also, to be involved in great power competition.

Senator FISCHER. Thank you, General. Thank you both very much.

Thanks, Mr. Chairman.

Chairman REED. Thank you, Senator Fischer.

Now, let me recognize Senator Gillibrand via Webex.

Senator GILLIBRAND. Thank you, Mr. Chairman.

First, for General Clarke, we entrust the special operations community with some of our most important missions and they have truly been the tip of the spear over the last decade. I wonder if these units are not being overtaxed or undersupervised. In recent years, we have heard troubling stories about SEALs [Sea, Air, Land] and Marine Raiders, a murder of a Green Beret, and allegations of war crimes by Navy SEALs.

So, first, should we be more concerned about good order and discipline problems in this community and, second, even if these cases are being prosecuted appropriately, are we taxing the operators with too heavy a load?

The chronic stress of these missions lead to post-traumatic stress, anxiety, and other mental health challenges.

Third, are you adequately resourced to provide the necessary mental health treatment for these servicemembers and their families?

General CLARKE. Senator, the items that you bring up are exactly why I directed last year a comprehensive review to look at our forces, and while, yes, I do believe that we are overfocused on employment and mission accomplishment, I do believe that through that comprehensive review, we have taken a hard look at ourselves and are making the corrective steps to ensure, I think most importantly is that we have the engaged leadership present throughout the force at the right time to reduce those incidents from occurring that have been highlighted.

I think one specific area that you mentioned which is important, is in the resources in our preservation of the force and family, which Congress allocates to us, today, more than 40 percent of our manpower that is associated with that is actually going to the cognitive and, most importantly, the psychological efforts to ensure that our special operators and their families are cared for.

Senator GILLIBRAND. Thank you.

Mr. Maier, as you know, the current special operations force structure is largely derived from counterterrorism and foreign internal defense operations in Iraq, in Afghanistan.

Do you think that this structure has created gaps in Special Operations capabilities to win against global rivals like Russia or China?

Mr. MAIER. Senator, I think it has and I think that has been recognized, and I think that is where we are laser-focused on closing that gap. Whether that gap is, as General Clarke alluded to, having higher-end capabilities that is more data-driven, more technology, more cutting-edge, but also at the same time, as has already been highlighted, being able to do our counterterrorism mission in a sustainable fashion and reap some of the benefits of those partnerships that give us, frankly, an asymmetric advantage over our peer adversaries, because we do work with so many countries in so many different ways.

So, this is absolutely something that I think the NDS has highlighted for us and within the SOF enterprise, continue to be very focused on.

Senator GILLIBRAND. Thank you.

General Nakasone, I really appreciate your leadership, and it was great to see you last week. I want to talk a little bit about sort of where we are, because in February 2020 when you were at a hearing, you said that you were understanding our adversaries better than our adversaries understand themselves. Well, obviously, we just had the SolarWinds hack. Experts estimate that maybe a thousand software engineers executed that operation.

What did we get wrong? What do we need to do to make sure we don't miss those kinds of assaults in the future, and what do you propose to address long-term concerns?

Specifically, we talked a lot about cyber workforce, about how to make sure we have the best and the brightest working for us so that we don't have intelligence gaps like this in the future.

General NAKASONE. Senator, with regards to our adversaries and understanding them, the comment I was making there was in ref-

erence to what we are seeing with their election influence. But I agree with you, we have to understand our adversaries better, particularly, given the recent intrusions that are ongoing.

Part of understanding our adversaries, though, is being able to see our adversaries, So, again, if we have a problem where we only see our adversaries when they operate outside of our country and we don't see them when they operate inside our country, it is very difficult for us to be able to, as I say, connect those dots.

That is something that the administration and obviously others are addressing right now. In terms of what we are doing at U.S. Cyber Command, we are very much focused on how do we ensure that our capacity, our capability remains the best in the world, and that gets back to your point on people what we have learned over the past couple of years is that the services bring in incredible talent for us. We are able to see these young soldiers, sailors, airmen, marines, coast guardsmen come into our force, train them, but then our great challenge is, how do we retain them?

That is something that certainly I give a lot of attention to every single day, and it is retaining the best of the people that we are able to bring in. Now, we have been able to leverage a number of the authorities that this Committee has been able to generate for us, and so that is one of the areas that we are focused on right now, so as we continue to improve being able to see the adversary in its totality, we have the people that are able to apply, obviously, the capacity and the capability to defend the Nation.

Senator GILLIBRAND. I would like to work with the Committee on getting you those authorities.

Chairman REED. Thank you very much, Senator Gillibrand.

Let me recognize Senator Rounds, please.

Senator ROUNDS. Thank you, Mr. Chairman.

Gentlemen, good morning, and I thank you all for your service to our country. I would like to thank your families, as well, for their sacrifice, as you continue that service.

General Nakasone, I want to work through this issue a little bit more about whether or not we see our adversaries, and I would like to just have a discussion with you. I understand that you have always made it very clear in all of our discussions that you are not here to tell us how to do public policy, but in order to make the public policy, we really do need your professional advice in terms of what is working and what is not.

You have alluded to it a couple of times today and I would really like to flush this out. Right now, we have provided the ability for Cyber Command to use cyber activities as traditional military activity, and so you can work outside of a war zone, as long as it is not within the United States. Our country has always said that our Armed Forces are not designed to be utilized within our country; they are designed to be used outside and to defend our country.

Yet now, we face cyberattacks where adversaries, near-peer adversaries, Russia, China, Iran, North Korea, have figured out that because of the laws that we have in place to protect our personal privacy, that they are using internet connections to literally get into the United States and then to launch attacks probably from systems that are found within the United States.

It seems to me that most Americans would suggest that if we have the ability or we have a desire to stop those attacks, we either have to be able to defend forward, to go on out to find them and to literally provide a very active cyber defense outside in an offensive capability, or we have to have the ability, as I think you are suggesting, to be able to see inside of our own country and to find where they are actually launching those attacks at.

I want to take a few minutes here and just allow you to expand on that and to share with us a little bit so that we have a better understanding of what the public policy challenges are that limit your ability to be able to see our adversaries here within the country.

General NAKASONE. Senator, thank you.

So, in terms of my authorities as both, the commander of U.S. Cyber Command and the director of the National Security Agency, I operate outside the United States, our forces do. It is not just a matter of policy; it is also law in terms of we, as a nation, rightly so, have a very, very determined balance between privacy and security. So, the authorities within the United States reside with the Federal Bureau of Investigations and others to do that type of surveillance.

What I am identifying right now, though, is our adversaries understand that they can come into the United States and rapidly utilize an internet service provider, come up and do their activities and take that down before a warrant can be issued, before we can actually have surveillance by a civilian authority here in the United States. That is the challenge that we have right now.

Now, I would, again, would offer that there are probably a number of different ways that we can look at this: whether or not it is greater public-private partnership; whether or not it is, you know, laws in terms of private sector, understanding who their customers are. But these are all areas that I think we, as a nation, have to be able to address.

Senator ROUNDS. Thank you, General Nakasone.

I just really think it is important that we share with the American public, this is not a case of where we are not technically adept. This is a case of where we have made laws that we think are correct and that we don't use our resources, our military uses within the United States, but we do expect that our other law enforcement capabilities are able to coordinate and to rapidly assist you so that you can go on out and find and take these folks out before they do it again, so to speak.

Is that a fair way of looking at it?

General NAKASONE. Senator, I would offer this is at the heart of our Fourth Amendment, and so being able to obviously look at that in terms of why it is so important that we have that right balance between privacy and security that is maintained, so being able to address that, obviously, is the challenge that we have going forward.

Senator ROUNDS. Thank you, sir.

Mr. Maier, I just want to bring up an issue that I think is really important. Secretary Mattis implemented a close-combat lethality task force in 2018. This was an organization dedicated to providing resources and policy solutions to the force who have accounted his-

torically for nearly 90 percent of all the casualties, yet constitute only 4 percent of the force, and receive only 1 percent of institutional investments.

This has been and will remain a very important legislative priority for my office. Nevertheless, despite its noble goals, this task force has floundered in the bureaucracy over the last year and I would like to see it get back on track.

Can you give me your perspective on the need for an effective cross-functional team, such as this task force, that would be focused on our special operations forces, as well as Army and Marine infantry units and their enablers.

I know that I am 30 seconds over my time allotted, so I am asking the question now, but I would ask if you would respond for the record to that request.

Mr. MAIER. Senator, I would be happy to.

Senator ROUNDS. Thank you.

[The information referred to follows:]

Mr. MAIER. I fully support enhancing the lethality, mobility, and situational awareness of our tactical forces that most directly engage with the enemy, those being U.S. Special Operations Forces (SOF) and infantry. The U.S. Army has partnered with the U.S. Marine Corps (USMC) and U.S. Special Operations Command (USSOCOM) representatives since the former Secretary of Defense directed the transfer of the CCLTF to the U.S. Army in March 2020, culminating in a 1-star general officer/flag officer steering committee. Going forward, the CCLTF will operate as a U.S. Army-led cross-functional team, with joint governance maintained through the U.S. Army-USMC-USSOCOM Tri-Service Chairs under the direction of the Secretary of the Army, with reporting requirements to the Secretary of Defense. This effort is critical to accomplishing our strategic priorities, minimizing casualties, and increasing combat effectiveness; particularly among SOF personnel who often operate in remote, austere, and hostile environments. My team continues to engage directly with the CCLTF to develop, evaluate, and recommend improvements to SOF and other squad-level close-combat formations to ensure an advantage in close combat. Maintaining an appropriately resourced and effective cross-functional team ensures that innovative and tailored technology is fielded to meet these warfighter-unique requirements.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Rounds.

Now, let me recognize Senator Kaine, please.

Senator KAINE. Thank you, Mr. Chair, and Ranking Member Inhofe.

It is great to have these great public servants before us. General Nakasone, I would like to begin with you. First, just congratulations. I just have been so impressed with the work of Cyber Command over my time on this Committee both, in the 2018 election cycle and the 2020 election cycle, I think that you have just done a magnificent job and I just wanted to state that up front.

Here is a concern that I have. I am on the foreign relations committee and I am the chairman of the subcommittee that oversees the Western Hemisphere. We had a hearing yesterday on sort of democracy backsliding in the Western Hemisphere, and one of the areas of concern is that the next two years, 2021 and 2022 are kind of, I think one of the witnesses described it as sort of an avalanche of elections or a tsunami of elections in Central and South America in nations where we are partners.

I spoke to the Colombian ambassador to the United States recently and he talked about increasing cyberattacks that they are suffering to delegitimize elections, to promote chaos and division.

Most of these cyberattacks seem to emanate from Venezuela, from probably Cuban or Russian actors in Venezuela, and other nations in the region that are aligned with the United States, are seeing the same thing. The Colombian ambassador to the United States asked if SOUTHCOM and CYBERCOM could be of assistance in this significant wave of elections in the next couple of years.

I wanted to ask you, we had our posture hearing with SOUTHCOM last week, what are you doing or what might Cyber Command do, together with SOUTHCOM, to try to help our allies in the region, avoid this escalating trend of disinformation that destabilizes democratic elections?

General NAKASONE. Senator, let me begin by, first of all, thanking the Committee. What you refer to our successes in 2018 and 2020 are based upon the work that this Committee did in the fiscal year 2019 NDAA to identify cyber as a traditional military activity. That allowed us to operate outside of our networks. It allowed us to do things like hunt-forward operations, of which, we did 11 hunt-forward operations in nine different countries for the security of the 2020 election.

In terms of working with Admiral Faller and SOUTHCOM, both the admiral and I have discussed a series of countries that are coming up. We have worked together to identify teams that can assist these countries to provide advice. We know a lot about what our adversaries are doing in terms of influence and interference when it comes to elections. So, we want to make sure that we share that with our allies as well.

Senator KAINE. I think the U.S. has played a good role. United States European Command (EUCOM) has played a good role with the North Atlantic Treaty Organization (NATO) and European nations with, you know, cyber defense. It is often centered in Estonia, a great center there of cyber defense, and I hope that we might explore what we can do in the Americas, as well. Thank you for that.

Senator Shaheen asked some questions about war powers that we have to grapple with and I am going to have one question for each, General Nakasone and General Clarke.

In the War Powers Resolution, basically, it requires, and there is some confusion and some good faith argument about the legality of portions of the 1974 War Powers Resolution, but it requires notice from the administration to Congress when the U.S. military is engaged in hostilities or situations that can lead to hostilities.

One of the things I have noticed on the Committee is over time, even recently, we will get a notice letter from the administration, for example, about the strikes that were carried out in Syria. If my memory is not playing tricks on me, I don't believe we have ever gotten a notice letter about a cyber, an offensive cyber action carried out by Cyber Command.

Am I right about that?

General NAKASONE. So, we do have a very strict congressional notification that we do adhere to. I think we had just recently had published a congressional notification for the Committee. I will go back and check, though, just to make sure on that, Senator.

Senator KAINE. Okay. It may be that it goes to some on intel or other committees and may not go to all the Members of this Committee, but I would like to explore that.

Secondly, to General Clarke, the War Powers Resolution does have a reporting exception for deployments which relate solely to the supply, replacement, repair, or training of forces in a foreign nation. So, if we deploy forces to do those things, there is not a reporting requirement under the War Powers Resolution and yet sometimes those activities, as in the sad case of the loss of four servicemembers in Niger, I think it was in 2017, they can lead to military action and even loss of United States life, and that is something, again, I just think we need to grapple with.

The notion of what hostilities are might be quite a bit different than it was in 1974 when Congress drafted the resolution and passed it, and it may require that we sort of get into what is the current nature of hostilities and warfare and grapple with that a bit.

Last, I will just say to you, General Clarke, not a question, but thank you to you and Secretary Maier. The special forces community is a really important and valued portion of our commonwealth and we thank you for the work that you do.

I will yield back, Mr. Chair.

Chairman REED. Thank you, Senator Kaine.

I would like to recognize Senator Cotton, please.

Senator COTTON. Thank you, gentlemen, for your testimony.

General Clarke, on January 20, President Biden and his national security advisor, Jake Sullivan, issued a derivative that withdrew authority to conduct certain military operations outside of Syria, Iraq, and Afghanistan, from our combatant commanders and reserved it to the White House, itself.

Has that affected Special Operations Command, or is that simply affecting our regional geographic combatant commands?

General CLARKE. Senator, I am aware of that, as it was reported in the open-source. I would respectfully submit or request that we talk about that in a closed hearing.

Senator COTTON. Okay. It has been confirmed by the National Security Council on the record, but I understand the hesitation.

Maybe I will ask Mr. Maier, do you know the problem that that decision was designed to solve, because it is not apparent to me what problem was raised by having combatant commanders or their subordinate commands make the decision to conduct military operations outside of Afghanistan, Syria, and Iraq. Let's just get down to brass tacks here, we are talking primarily, I think Yemen, Somalia, and the African Sahel.

Mr. MAIER. Senator, I think it is meant to be an initial review of this administration in the use of a series of different actions that, again, we should probably talk about it in closed session. But I think like a lot of the reviews that are underway, I already alluded to everybody on the Committee certainly knows about Afghanistan, Somalia, the posture hearings and reviews that are underway, those are all part of an overall series of looking at what has been done and whether this administration would continue to proceed with those.

Senator COTTON. Okay. We will discuss it in the closed session. Again, this has been reported and confirmed by the National Security Council.

To make a point, I will relay a story the past President told me. I don't think he will be offended if I share his thoughts. He said early in his administration, he was doing some reading late one night and he got a call from an action officer about approving a strike and his response was, well, what do they expect me to know about it? Don't they have some captain on the ground near this country that has been following this target and knows that this is a bad guy and that we should conduct this strike?

I agree with that sentiment.

General Clarke, I have the highest confidence in you and in General McKenzie in Central Command and General Townsend in Africa Command to know whether or not we should smoke a bad guy overseas. That doesn't need to be decided by civilians at the White House.

General Clarke, I want to turn to Special Operations Command and something we discussed in our visit yesterday, and I just want you to elaborate for us on the record here.

What specific changes in force design and capabilities do you believe are necessary to attain the force that you need to accomplish your mission going forward and what do you believe are the most pressing of those needs?

General CLARKE. Senator, in order for us to compete effectively in the future, we have to modernize both, our precision strike and ISR. We particularly have to look at data and data management so that the most specific requirements enabled at the tip of the spear where our operators are, so that they can quickly see and sense the battlefield that they may have to be fighting in, into the time of crisis.

Then we also have to have encrypted and electronic warfare capabilities so that our forces that could be forward in a joint warfighting capacity, reduce the probability for them to be targeted. So, we are looking at all of these, Senator.

I, personally, changed our modernization priorities and restructured some of our funding to modernize those capabilities.

Senator COTTON. Thank you.

General Nakasone, in the time we have remaining, I want to ask a question that may seem to be a boring bureaucratic matter to some people watching, but it is an important question that this Committee has addressed in the past and that the intelligence committee has addressed, as well, and that is the so-called dual-hat. In addition to being the commander of the Cyber Command, you are also the director of the National Security Agency; is that right?

General NAKASONE. That is correct, Senator.

Senator COTTON. That is the so-called dual-hat that you command this military combatant command and also that you run an intelligence agency.

What do you think are the positive things that result from wearing that dual-hat?

General NAKASONE. Senator, over the past 3 years, what I have learned as being both, the commander of U.S. Cyber Command and the National Security Agency is that the ability for myself to operate in both roles provides the Nation, speed, agility, and flexible responses to adversaries that are increasingly modernizing, getting quicker, and getting more sophisticated.

We operate in a domain that changes rapidly and this change is measured in weeks, perhaps months. Being able to rapidly react to that, as we have been able to prove in such things as securities of elections in 2018 and 2020, is empowered by that relationship.

Senator COTTON. Thank you. Thanks, gentlemen. I will see you in the closed session.

Chairman REED. Thank you, Senator Cotton.

Let me now recognize Senator King via Webex.

Senator KING. Thank you, Mr. Chairman.

General Nakasone, a couple of quick questions about your staffing. Would it help, in terms of recruitment and retention if you had the authority, as part of this process, to forgive student loans, would that be a factor that you think might be effective in helping to retain and bring on the people that you need?

General NAKASONE. Senator, certainly, that would.

The services have that power as they recruit talent for our force. We have utilized it also with our civilians, but that is one mechanism that we get feedback that is very attractive to our workforce.

Senator KING. The second specific question, we have had a real backup problem in the past with the security-clearance process. Is that improving or has that been a barrier?

I have heard of people that just get so discouraged they move on even though they have been accepted for a position.

General NAKASONE. Senator, it has improved and it has improved significantly over the past couple of years. I applaud the work that has been done by the Department toward that, but even with that said, for those that operate at U.S. Cyber Command, it does require a full security investigation. So, there are times that there are a fraction of our workforce that takes longer than others.

Senator KING. I think that is something we have to continue to work on, because we don't want to lose good people who are making the commitment but can't set their lives aside for a year or more for that process to carry-forward.

You used the term at one point, to change the subject, you used the term "risk calculus." You have used the new authorities very effectively in the elections of 2018 and 2020 in terms of defending forward and engaging with the adversaries in their systems.

Has that had a deterrent effect that you have observed, do you believe that the adversaries are thinking twice about some of the things they may be planning against us because they know of the capacity that you have demonstrated?

General NAKASONE. Senator, I continue to see our adversaries operate rapidly in terms of being able to try to operate below the level of armed conflict. We have effectively gone from being a very static to a very active force, as you refer to, "defend forward", the Department's cyber strategy of 2018 and our instantiation at U.S. Cyber Command of persistent engagement, how do you both, enable your partners and act?

We continue to do that. We are operating in a space where our adversaries are not going to stop. They are going to continue to look for ways to steal our intellectual property, to steal our identification, and to try to influence our populous.

We, at the same time, have to be forward. We have to be operating, and we have to be engaged with our adversaries, and that is what has been my focus over the past couple of years.

Senator KING. Well, would you agree that we need to develop a cyber doctrine, if you will, of declared deterrences, because, as you say, they are going to continue to do this until they have a risk calculus that tells them that there will be a price to be paid that they are not willing to undertake.

General NAKASONE. So, certainly, Senator, the policymakers continue to look at this type of doctrine and I know that is being worked. From my perspective or my responsibilities, I am very, very focused on operationally how do we ensure that we can operate against these adversaries that continue to try to operate below the level of armed conflict.

Senator KING. I think there is one point that has been discussed repeatedly today that really bears a lot of policy discussion, and that is the gap that you have identified where you aren't able, either in Cyber Command or NSA, to operate within the United States, but our Vice President Harris have learned that if they can hop and use a server or an internet service provider (ISP) in the U.S., they can evade your surveillance, and then we have the Federal Bureau of Investigation (FBI), as you mentioned. We are dealing with the fundamental issue of protection of privacy.

But would you agree that this is a serious issue?

SolarWinds is a perfect example where they operated in this country for something like a year, 9 months to a year, and were picked up by the private sector, not by our services.

So, I take it from your prior discussion, this is something we really need to focus upon; isn't that correct?

General NAKASONE. I do think we need to focus on it, Senator. The only alteration I would make to it, it is not necessarily that it is U.S. Cyber Command or the National Security Agency that needs to be doing this. I am saying that the Nation needs an ability to be able to see what is going on within the United States.

Senator KING. I agree. I am not saying that it is your job, necessarily, but what I am saying is this gap is an issue that we have to address and SolarWinds points it out.

I think one other point, and my time is expired, but that needs to be emphasized is the relationship with the private sector. You have already mentioned that and that is something that we are going to be working on, I hope, in this session of Congress. That is a key part of cyber defense.

Chairman REED. Thank you very much, Senator King.

Let me now recognize Senator Ernst.

Senator ERNST. Thank you, Mr. Chair.

Gentlemen, thank you very much for being here today and for your command teams and, as well, the men and women within your commands.

General Clarke, certainly, our Special Operations Force is probably the most capable military element on the face of the planet, and as well, General Nakasone, the men and women within Cyber Command have proven essential to us over the past number of years. So, thank you very much for being here today.

Mr. Maier, I appreciate the opportunity to sit down with you recently and discuss our SO/LIC forces. We think it is really important and General Clarke, as well. I will start the questioning with you. I appreciate you sitting down a couple of weeks ago and visiting about our shared commitment to the men and women of SOF, so thank you.

Senator Inhofe and Senator Fischer touched a little upon some of the gray zone activities where our SOF covers down and we know how important that is. As we have seen counterterrorism actions in the past, and as we move to, you know, the near-peer competition under the guise of our National Defense Strategy, we understand there needs be a little shift, but if you can, just reinforce how important it is that we continue not only to adjust to that near-peer competition with our special operators, but also to continually focus on counterterrorism efforts.

General CLARKE. Senator Ernst, as you know, SOCOM has to enable the joint force in both, crisis, competition, and if necessary, conflict. In this space, there will remain that persistent threat and we have to prioritize towards that persistent threat and that would be groups like al Qaeda and ISIS.

But there are SOCOM and SOF unique capabilities that can be used in competition that the rest of the joint force doesn't have, and that could be things like undersea, seabed warfare and only we provide, the strategic reconnaissance that our forces are extremely capable of. So, as we look at that competition area and as we look to modernize our force for the future, those are the specific capabilities that we will continue to work with this Committee to move forward on.

Senator ERNST. Thank you, sir.

Just as a reminder to this Committee, as we are looking at potentially flat budget for DOD in the future, we just need to understand the role that SOF plays, that SOCOM has around the globe, and that we do get a lot of bang for our buck when it comes to the men and women within your command.

You know quite well that my heart and soul is behind Preservation of the Force and Family (POTFF) and how important it is, and I know, sir, the fifth pillar of your command philosophy is health of the force, but we go back to the SOF truth that humans are more important than hardware. So, this is something that I have long been involved in.

If you could, please explain a little bit about what your focusing on in the area of brain health.

General CLARKE. Thanks, Senator.

I think it is important that the entire Committee understands when we started POTFF, we focused on the physical, our men and women who were physically wounded where you could see the wounds, and in the last couple of years, we have refocused those efforts towards cognitive and the psychological, as we saw suicides go up. But then we looked at the health of our force for 20 years of engaged combat, and now we have put more than 40 percent of our resources and our capability specifically to the brain health and the cognitive domain and the psychological domain to be able to ensure that our operators are both, physically and mentally capable. So, we baseline all of our operators with their cognitive piece, so

if there are reductions in their capabilities, if they actually have some type of concussive event, we can then go back later. We are working with industry academia and even elements like the National Football League in this space so we can make sure that we take care of our operators.

Senator ERNST. Right, and I think it is just important to stress that the investment into these activities is extremely important for, again, the preservation of our force. I have had the opportunity to visit a number of those types of activities in Coronado with Admiral Green a number of years ago, as we kind of dove into behavioral health activities, as well as spiritual activity is very important for our force, but then also the Tactical Human Optimization Rehabilitation and Reconditioning (THOR3) facilities that are available for our men and women of the force and making sure that they are physically strong and capable of what is expected of them by the American people.

Again, I will continue advocating on behalf of SOCOM and I certainly appreciate your wonderful efforts.

Thank you, Mr. Chair. I yield back.

Chairman REED. Thank you, Senator Ernst.

Let me recognize Senator Blackburn, via Webex. Senator Blackburn?

Senator BLACKBURN. Thank you, Mr. Chairman.

General Clarke, thank you for the time and the conversation yesterday. We talked about 40 percent of SOCOM's forces are aligned to support the great power competition fight. That is a big increase. So, for the record today, I would like for you to talk about the resourcing standpoint of what do you need from this Committee in terms of authority; advocacy, what do you need to engage in near-peer competition from Beijing; and then let's talk a little bit about the posture that SOCOM has to counter these nefarious activities from the Chinese Communist Party (CCP) and where you are positioned there.

I think you can really do more with a lower dollar amount than the regular force, so I would love to just get your comments for the record.

General CLARKE. Senator, thank you.

You know, as pointed out, with about 2 percent of the Department of Defense budget, I think we are a very good return on our investment, with about 3 percent of the force.

The continued resourcing, specifically, you know, for SOCOM so that we can modernize in this area, where we can provide unique capabilities for our forces is critical.

We have to balance both, operations, readiness and modernization, and the continued support of this Committee remains critical.

You specifically asked about our employment and our capacity at 40 percent. That is exactly right. We have, in fact, adjusted our forces to a sustainable presence against the persistent terrorist threats, while, at the same time, rebalancing those forces across the globe. Some of our competitors are now global threats and not necessarily specific to Europe or INDOPACOM, and so we continue to look at where our forces are located across the globe so they can counter, you know, those specific threats.

Then the last thing I would hit in this area is the specific authority for our forces to conduct unconventional warfare in this space.

While I can take specific points in closed session, that authority that allows us to work with partner forces to increase both, the resistance and resilience, working in the information space, is absolutely critical.

So, Senator, thank you.

Senator BLACKBURN. Yes, and we talked a little bit about the term that you and Admiral Davidson use about slowing down China's clock. I would like for you to hit just quickly on what that means and then what we have, what we can do with operations within that gray zone.

General CLARKE. Senator, as you are well aware, we established the joint task force, Indo-Pacific. It is the first task force that went and is actually west of the International Date Line that we developed with INDOPACOM to ensure that we work with like-minded partners in the Indo-Pacific. I think part and parcel of that is that that element is focused on the information operations so that China, who works very well in the space of creating false narratives and not always being up front with the messages that they send, that we actually are able to tamp down some of the disinformation that they continuously sew, and that is an important part to SOCOM and to CYBERCOM, is working in this information space.

Senator BLACKBURN. With the time remaining, we talked a little bit about Operations Tempo (OPTEMPO) and the changes there and the comprehensive review from 2019. Where have you seen holistic improvement across the force and where would you like to continue to see improvement?

General CLARKE. Senator, through our comprehensive review, we have now ensured that by this year, all of or forces will be above a 2:1 deployment to dwell ratio. That will be the first time that that has happened since September 2001. We continue to strive toward meeting the 3:1 dwell ratio for all of our forces, and some of our forces already there and we will continue to strive in that.

Senator BLACKBURN. Thank you, sir.

General CLARKE. Thank you.

Senator BLACKBURN. Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Blackburn.

Before I recognize Senator Hawley, I will depart for the vote. Senator Inhofe will preside, and I will return, and we will switch off.

Senator Hawley, please.

Senator HAWLEY. Thank you, Mr. Chairman.

Thank you, gentlemen, for being here. It is good to see you again.

General Nakasone, let me start with you. Many companies use Chinese hardware like printed circuit boards in their information systems they provide to the Department of Defense, including systems that are used to store and to transmit information. At the same time, DOD and others have warned that the Chinese Government might be able to tamper with these Chinese-made products in order to create cyber vulnerabilities that they can exploit and use against us.

My question is, do you think it is important for the Department to at least know which systems contain Chinese-printed circuit boards so that it can address potential cyber vulnerabilities and contain any exposure or any danger that is identified?

General NAKASONE. Senator, in light of the recent SolarWinds intrusion, I think this is, as you point out, an area that we, as a Department, continue to look at very hard. There are procedures and processes that the Department utilizes to verify this, but I agree that this is an area that we have to obviously shine a light on in the future.

Senator HAWLEY. Do you agree that further steps would be useful in order to identify vulnerabilities here and, as you just said, shine a light on this?

General NAKASONE. So, Senator, I am a person that every single day is worried about the vulnerabilities that our adversaries might exploit, so you can well-imagine that this is an area that I have a great deal of, you know, focus on right now.

Senator HAWLEY. Good. Well, I look forward to working with you on that.

General Clarke, let me come to you. The Baltic nations have spent some years honing their ability to conduct irregular warfare in the event that Moscow attempts to seize a Baltic territory, so it won't be able to hold it. It has become a key part of their deterrent strategy, as you know, in the Baltic region.

What I am asking about this is, do you wonder, do you think that the Baltic model could be applied in Taiwan; in other words, would helping Taiwan improve its irregular warfare capabilities help it deter potential Chinese aggression?

General CLARKE. Senator, bottom line, yes.

We have worked closely with the Baltics. I have met with every Baltic SOF commander personally and we have been engaged in the Baltics for a long time, but we also, and I can talk more specifically in closed hearing, we remain close with capabilities for Taiwan.

Senator HAWLEY. Do you think that it would be helpful to us and should we be prioritizing helping Taiwan develop its irregular warfare capabilities?

General CLARKE. Yes, Senator, I do think we should help them.

Senator HAWLEY. Let me, still with you, General Clarke, but switching topics. President Obama's former acting special representative for Afghanistan and Pakistan recently wrote that, and I am quoting now, for the long term, the United States will need a counterterrorism capability in that region that doesn't depend on a permanent United States military presence in Afghanistan, which I completely agree with.

My question is, what options has SOCOM provided to the secretary to allow us to achieve counterterrorism objectives in Afghanistan without a permanent military presence in the country?

General CLARKE. Senator, we will always provide options. As you well know, al Qaeda and ISIS are not just in Afghanistan, but they are a global threat, and we will always provide the secretary and the Department and the National Command Authority with options so that if there is a threat, that we can actually deter or actually disrupt or defeat that threat.

Senator HAWLEY. Specifically, you are saying, and we can discuss this more in closed session, as appropriate, but just to be clear, you are working on providing options to deal with the counterterrorism threat and with—for counterterrorism measures that do not rely on a permanent standing military presence in country; is that right?

General CLARKE. Senator, there has been no decision made for Afghanistan, so I think it would be, you know, a hypothetical to know what we are going to do at this time, but we will always provide options, you know, for the Department of Defense.

Senator HAWLEY. Good. Well, I look forward to following up with you more on that.

General Nakasone, I am going to come back to you here in my few remaining seconds. The People's Liberation Army (PLA) in their writings often refer to cyber capabilities as the strategic commanding heights of future warfare.

I am wondering how the PLA's emphasis on information operations and maintaining the information advantage influences CYBERCOM strategy for detering China.

General NAKASONE. Senator, I think this whole discussion in terms of where our adversaries are going and in the influence spaces is among the most important areas that we are taking on at Cyber Command, and I know General Clarke is addressing at U.S. Special Operations Command.

This is really the competition that we are involved with today where our adversaries are, again, trying to influence ourselves and our people through a number of different means. So, we have work ongoing today, ongoing both, in our commands and with other commands trying to address that, as well.

Senator HAWLEY. Very good. I will look forward to following up with you on that, as well.

Thank you, gentlemen, for your testimony.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Hawley.

Senator Kelly is recognized.

Senator KELLY. Thank you, Senator.

I understand that in January of 2020, nine combatant commanders, including you, General Clarke, sent the letter to the Director of National Intelligence requesting more assistance from the intelligence community in being able to publicly illuminate, malign influence, and coercive activities by China and Russia.

So, to all the witnesses, starting with General Clarke, what, if anything, has been done in response to this request from the nine combatant commanders?

General CLARKE. Senator, from that request, SOCOM, with the other combatant commanders, continues to look specifically in the information space and where we can best effect to provide capacity against our adversaries. I think that specific memo led to some sort of concurrence requirements being lifted for the Department.

Senator KELLY. In your view, would the illumination of these malign activities help to dissuade or deter China and Russia?

General CLARKE. Senator, at this point, I cannot point to specific deterrents or detraction of that. I would tell you we would continue to look, but I think it is most important that we continue to develop the capacity required to work in the information space.

Senator KELLY. General Nakasone?

General NAKASONE. Senator, to your second point there, I think that is a really important question. In terms of what our adversaries are doing today, our most effective response is being able to respond to what they are doing. We have a number of different ways upon which we respond. Sometimes we respond to other means of the power in our government, whether or not it be diplomatic or sanctions or other ways, but I think it begins with the idea that we are competition right now and our adversaries are operating below the level of armed conflict in a matter of trying to influence us.

Senator KELLY. But in downgrading the classification of this intelligence, is that helpful in meeting the goal of dissuading more aggressive action from China or Russia?

General NAKASONE. I think we have to think broader than that, Senator. I think that it is more than just writing to release or perhaps even downgrading.

It is as General Clarke alluded to, there are other means upon which we gather intelligence these days. How do we take the best tools, the best techniques, not only from our Government, from also from the private sector, to look at what is occurring and being able to shine that spotlight.

I think a lot of times we look and just say, hey, we will simply go ahead and downgrade intelligence and provide that rapidly. Sometimes the better answer is, okay, where are the other streams of information, how can we use that most effectively with an audience.

Senator KELLY. Well, thank you, General.

To Mr. Maier, so, Section 1202 of the Fiscal Year 2018 NDAA sought to provide a new tool to counter these challenges by authorizing the Secretary of Defense to provide support to regular forces, the regular forces, and individuals supporting U.S. special forces, but that irregular warfare operation part, last year's NDAA raised the annual cap on funding for this authority from ten to $15 million.

Mr. Maier, how would you characterize the demand for this authority across the geographic combatant commands?

Mr. MAIER. Senator, that is a, I think, a very important tool we have that we haven't yet talked about in the great power competition. The demand is high. It takes some time, as you can understand, to build those partnerships to be able to operate in that partnership-driven approach.

We view this very much as the successful 127 Echo or the 1208 program, where there is a crawl, walk, run element to it, and I think that started very small. As the progress, and in many respects, the high return on investment in terms of dollars and deployments in dwell and impact started to become apparent to the Geographic Combatant Commanders (GCCs), and became more and more in demand, we see a similar model for 1202, sir.

Senator KELLY. Thank you.

I yield back.

Senator INHOFE. Thank you, Senator Kelly.

Senator Sullivan?

Senator SULLIVAN. Thank you, Mr. Chairman.

Gentlemen, good to see you again. Thanks for all your work.

General, let me start with you. General Clarke, how are you feeling, with regard to the resources that you have for your no-fail mission, you have a lot of no-fail missions, but your Counter-Weapons of Mass Destruction (C–WMD) mission that SOCOM was, a couple of years ago, given that mission, as well. It is not like you didn't have a lot of missions on your plate. That is a big one.

A number of us, myself, in particular, were concerned that the Special Operations Command does a lot of things right, really well, but being given the lead on that one was a whole other area that is really, really important, but also needs resources. Are you resourced enough for that mission?

That is a mission that, of course, there is no doubt, you can't fail on.

General CLARKE. Senator, the bottom line is we do have sufficient resources to do that. The resources from United States Strategic Command (STRATCOM), that had that coordinating authority for C–WMD were moved from STRATCOM over to SOCOM. I will continue to assess if additional resources are required going forward, but as you point out, the WMD threat is something that we must pay continuous attention to, because if we don't, we do it at our own peril.

Senator SULLIVAN. As I know you know, and you and I have discussed this, we are reorienting. I think it is the appropriate orientation for our military and national security to great power competition with China as a rising threat, but the WMD threat continues regardless of great power competition and that could be from violent extremist organizations, which clearly want to get their hands on that. It could be from North Korea, who is a well-known proliferator. Pakistan.

Are there any areas, in particular, that you are focused on, as it relates to the Counter-WMD that is not in the headlines, but we should be sure we are focused on here, as well?

General CLARKE. Senator, one thing that we put some strong recommendations for is that is ensuring that our joint forces actually train to work in a contested environment, so that our adversary is well aware that they will be denied the benefit of use of these capabilities. That deterrent principle, I think is critical.

As you and I discussed yesterday, there are those that would like to wish this problem away, but we don't think we can and we have to be prepared for its potential use.

Senator SULLIVAN. Let me ask another issue, which I think this Committee is very focused on.

You know, the SOCOM enterprise, our Special Operations Forces have been very focused, appropriately, Post-9/11 in the Middle East. They have done a great job, a heroic job. Many have lost their lives in their service to their country.

How are we starting the transition from the focus there, which we still need to do, but we need to also start focusing on China and the Asia Pacific and the INDOPACOM region. Are we doing enough there? Do we have enough experience with special operators?

It is a very different battlefield, as you know. It is probably less kill and capture and more gray zone operations. What is your thinking on that, General?

General CLARKE. Senator, this is going back to the future for SOF. Many of our forces were regionally aligned prior to 9/11 that had both, the cultural and language understandings and now as we have actually reduced forces in the places that you have named, some of these forces are going back to where they do have that understanding and those capabilities.

So, we have aligned, in one case, I think important for the employment of our forces, but I think the second and really key aspect from a SOCOM perspective is that we have actually reallocated our budget for the modernization towards the capabilities that are required. So, I have adjusted 14 percent of my budget in modernization towards great power competition for those unique SOF capabilities.

Senator SULLIVAN. Great. That is good to hear.

General Nakasone, I just want to compliment you, sir. I think you have been doing a phenomenal job. You probably don't get complimented enough because you can't talk about what you do, but in my own experience here, I am just starting my second term in the Senate, there was a hearing that I really remember in 2015, 2016. It was the Cyber Command. It was some of the others who were, I called us the cyber punching bag of the world. The witnesses admitted that we don't retaliate when we are attacked from a cyber perspective.

I don't think we are the cyber punching bag of the world anymore and I think it is because of your work. You can't talk about a lot of that work, but can you just let the American people know that whether it is on elections or other cyberattacks, we are not just taking blows; we are going on offense, we are preemptive. I think it is really important for people to know that.

That was not the posture 5 years ago. We were just getting pummeled and we wouldn't do anything about it. Can you talk a little bit about that, to the extent that you can, in an unclassified session.

General NAKASONE. Senator, I appreciate the question and, importantly, I appreciate the support of this Committee, because as I was mentioning, really, 2018 was a watershed year for us, as we had looked at the future to a midterm election and knowing that we did not want to experience what we had experienced two years previously, the ability for this Committee to pass the NDAA that year that allowed us to operate outside of our networks, cyber as a traditional military activity. Moved us from being a static to an active force.

This idea of persistent engagement, always being involved with your adversaries, whether or not you are enabling our partners or acting against our adversaries is critical in underlying to our support in 2018, 2020, and today.

Senator SULLIVAN. Thank you, General.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Sullivan.

Let me now recognize Senator Duckworth via Webex.

Senator DUCKWORTH. Thank you, Mr. Chairman.

I do join my colleague, the senator from Alaska, in his admiration for the work that we have done, especially under your leadership, General Nakasone.

General Clarke, I appreciate our call yesterday and I wanted to express my support for Special Operations Command's diversity and inclusion strategic plan. As we discussed on our call, bringing more people from diverse backgrounds into the Special Operations community will make it stronger. By infusing teams with different ideas and perspectives and enabling them to engage more effectively around the world.

I agree with you that greater diversity in the Special Operations community is an operational imperative. That is why I sponsored the ELITE Act in last year's NDAA to identify and remove barriers to underrepresented groups' participation in elite communities of the Armed Forces.

I am glad to see that you have taken on the challenge of increasing diversity and inclusion in Special Operations Command and it is an important first step in strengthening our military, and I really look forward to working together with you on this issue in the future.

My first question, I believe that being able to tap into the full talent of every perspective of our population makes our military stronger. I also believe that in order to build the most capable military possible, we need to capitalize on the natural advantage of our National Guard and Reserve forces, namely, that those servicemembers are highly trained in their civilian jobs, as well as their military jobs.

If we viewed this as a strength, we can benefit from the expertise that our Guardsmen and Reservists bring from civilian life, especially infuse in fields that require advanced technical skills like cyber.

General Nakasone, can you please describe how the National Guard and Reservists like members of the Illinois National Guard who are currently working the 176th Cyber Protection Team are contributing to your mission at U.S. Cyber Command.

General NAKASONE. Senator, thank you, and thank you for the question. The 176th Cyber Protection Team is a team well-known to us at U.S. Cyber Command. They mobilized, came on Active Duty, and did a tremendous job in protecting our infrastructure, the actual capabilities, upon which we utilize every single day to engage our adversaries, led by, you know, Major Jaime Marlock, who is the Cyber Protection Team leader.

Really, it starts at the top with the Illinois National Guard, in general, Brigadier General Neely, who has been instrumental in being out front, being very supportive of our efforts, and I think key to your point, attracting those that leave Active Duty service and continue to want to serve. So, the 176th is a great example of our partnership with the Guard.

Senator DUCKWORTH. Thank you.

How will increasing National Guard and Reserve components participation in cyber operations improve our national readiness and capacity to combat cyberattacks and how can Congress support this effort to increase the Reserve forces participation in our cyber activities?

General NAKASONE. Senator, if I might use just an example, and I would say it is from the state of Connecticut. As we were operating with the Connecticut National Guard in the early fall of 2020, on the 2nd of September, Connecticut faced a ransomware attack on their public school systems. Operating with the Connecticut National Guard, they provided us information via a capability that we called a Cyber 9–Line. That is utilizing a common ID card, being able to obviously share that and unclassified with us back at U.S. Cyber Command, we could use the power that we have at U.S. Cyber Command and at the National Security Agency to look at this malware and to rapidly provide assistance.

But at the end of the day, it was the Connecticut National Guard that did the work and, you know, taking an ability to look at a situation where your school has been shut down because of ransomware and then in a matter of days, being able to bring that back up, I think it shows the power of the Guard and the power of the partnership between the private and the public sector.

Senator DUCKWORTH. Thank you.

When I think of complex cyber missions, I do think, in particular, about the challenges that U.S. Transportation Command faces in securing its network and safeguarding sensitive information about our troops, our capabilities, and our postures, and movement plans while also working with numerous commercial partners, whether it is ocean-going or within the aviation community.

General Nakasone, please describe your current work with U.S. Transportation Command and explain why it is important that Congress fully resource and support this and future initiatives like it.

General NAKASONE. Transportation Command is really a unique capability for our Nation. It provides us global logistics. We are perhaps the only nation that can do that so readily and so well.

Under General Lyons' leadership at U.S. Transportation Command, he approached us and said, hey, we operate primarily off of the private sector with unclassified networks. How can you help?

There has been a partnership ongoing for the past year and a half where both, U.S. Transportation Command, U.S. Cyber Command, and the National Security Agency have taken a look at, how do we improve that public-private partnership, how do we ensure the security of the data that is being transmitted, and then, also, how do we look to the future?

Thank you, Senator.

Senator DUCKWORTH. Thank you.

I am out of time.

Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Duckworth.

Let me recognize Senator Tuberville, please.

Senator TUBERVILLE. Thank you, Mr. Chairman.

Thank you, gentlemen. Thanks for being here today. General Nakasone, Space Force has already taken great steps in advancing U.S. national security. In order to provide the effectiveness needed, it is going to continue to need a strong backing from our cyber intelligence community.

What role will the cyber mission force and CYBERCOM play in Space Force?

General NAKASONE. Senator, it has been an early and active role already. General Dickinson has been out to U.S. Cyber Command to talk about how do we secure the networks upon which he operates. How do we work, obviously, as we take a look at our overhead constellation, what are the threats that USSPACECOM is going to approach in the future, and so, we have been actively engaged with him over a period of several months to identify those.

Senator TUBERVILLE. Thank you.

General Clarke, section 922 of the 2017 NDAA, which was signed into law by President Obama, made clear that the administrative chain of command for the Special Operations community runs from the President to the Secretary of Defense, to ASD SO/LIC, and then to you, the SOCOM commander.

Prior to conducting congressional engagements, do you obtain approval from ASD SO/LIC?

General CLARKE. The secretary, we work very closely with ASD SO/LIC in that administrative chain of command for oversight, particularly for our budget, and acquisition.

Mr. Maier and his predecessors provide that oversight. But it also clear that my chain of command, and Secretary Austin made this very clear to me, that my chain of command as a combatant commander runs from the Secretary of Defense to the President.

Senator TUBERVILLE. Thank you.

That is kind of my next question. Do you support the implementation of the law and, specifically, ASD SO/LIC's absolute control over administrative matters, such as legislative engagements, budgetary resource decisions, acquisitions, public affairs, personnel, legal accountability, and other related authorities held by the traditional military service?

General CLARKE. Senator, what I believe is a key role for ASD SO/LIC is actually to be an advocate for SOCOM within the Department. So, when decisions are made about services and service budgets and service personnel decisions, I think ASD SO/LIC in the room to be able to be that advocate for us, to me, is the most important aspect that ASD SO/LIC can do for SOCOM.

It goes back to the old adage if you aren't at the table, you become the lunch, and having ASD SO/LIC in and at that table, which has occurred, has been very helpful.

Senator TUBERVILLE. Thank you.

Mr. Maier, I noted a moment ago the law mandates that the administrative chain of command for SOCOM passes from the President to Secretary of Defense, ASD SO/LIC, SOCOM commander. In light of the clear chain of command, have you met with the Secretary of administrative matters related to SOCOM?

Mr. MAIER. Senator, yes, I have, and I participate in the Secretary's regular service secretary meetings. I also participate, or my staff participate, in the series of governance meetings that the Deputy Secretary runs in order to do, just as was already said by General Clarke, to both advocate, but for the administrative chain of command.

We are responsible for both, setting direction and ensuring execution and implementation, consistent with the law.

Senator TUBERVILLE. How often do you all meet, do you think?

Mr. MAIER. The service secretaries meet at least twice a month. Obviously, a new administration, so a different series of meetings, but every day, sir, there are meetings that I am representing ASD SO/LIC in that service secretary-like hat with the Secretary, Deputy Secretary, or their direct reports.

Senator TUBERVILLE. Thank you.

Thank you for your service.

Chairman REED. Thank you very much, Senator Tuberville.

Senator Peters, please.

Senator PETERS. Thank you, Mr. Chairman.

Thanks to each of our witnesses here today.

Mr. Maier, in General Clarke's words, if I may use your words here, General Clarke, they are good words, he says SOF, quote, strengthens alliances and creates diplomatic options.

These strategic effects ultimately, clearly begin with actions undertaken by people in those areas. It is our number-one assets.

I would like to hear from you how you are modernizing professional development in a way that really reflects this very unique role of your personnel, how you are basically bridging the gap between direct action and working in an embassy across the span of training and education, a very obviously complex set of skills that are necessary.

Specifically, my question is, how are you broadening mid-level SOF leaders and how much of that focus is on senior-enlisted personnel?

Mr. MAIER. Senator, that is a very important part of this pivot, as we described it from being able to still do the counterterrorism missions that we have been involved in for the last, really, generation to be able to do that both, and then be competitive at that level below armed conflict.

A critical component of that, as we have talked about already, is not only the ability to speak languages and really engage at the right level of cultural awareness, with not only the adversaries, but also those third parties, third countries that those adversaries are attempting to influence.

A lot of that happens in the information space, social media, as we know. So, a critical component of a professional military education, but even more specifically, the operational imperatives that we have to evolve that force. This is the key part of this.

It was alluded already at the opening statement of General Clarke, that over 50,000 members of Special Operations Command are enlisted members. That is where the rubber meets the road. These individuals, especially in the SOF world, are often called upon to do things well above what their conventional counterparts, whether that is operating embassies, participating on interagency teams, or engaging with partners. So, we see that as really the crux of progress and where we are going to be successful in this great power fight.

Senator PETERS. So, Mr. Maier, does the SOCOM talent management then emphasize regional experience, is that something that you are really seeking out and trying to develop further?

Mr. MAIER. Senator, yes, sir, and I think, specifically, evolving to those great power concerns, we often forget at times that a lot of what we have been doing over the last years in the counterter-

rorism fight was really focused on fairly narrow set of adversaries. So, I think as we look more broadly and diversely at the adversaries we are going to confront, and in some cases, more importantly, those entities that they are trying to influence, it is important for us to be able to engage in those languages with that cultural awareness.

Senator PETERS. Yeah, absolutely. Well, that is good to hear.

General Nakasone, on Tuesday, I asked Admiral Aquilino how he plans to align security assistance in INDOPACOM with the nature of our competition with China and Russia and if he believes that security assistance should include cybersecurity assistance to help our partners protect their critical infrastructure or enhance their resilience against information warfare.

My question to you, sir, is, do you believe that security assistance to partner nations should include cybersecurity and information warfare measures, first off, and second, do you believe we should pursue these types of relationships outside of the traditional Five Eyes nations that we have talked about mostly?

General NAKASONE. Senator, I believe that in terms of the theater engagement that you discuss right there, our most effective means is to begin with the discussion with the combatant commander. So, if confirmed, we will look forward to obviously working very closely with Admiral Aquilino.

I do take your point on the idea of a broader partnership. We do need broader partnerships. We have tremendous relationships with our Five Eyes. It is a critical capability that we have as a nation, but we are also looking at how do we expand those partnerships to bring a degree of competitive advantage against our adversaries in the future.

Senator PETERS. Great. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Peters.

Senator Blumenthal, please.

Senator BLUMENTHAL. Thank you, Mr. Chairman.

Thank you for your service, all three of our witnesses today.

General Nakasone, I appreciated our discussion before this hearing about the contributions of the National Guard in Connecticut and you were mentioning them in your testimony. Across the country, the National Guard have really been integral to many of our cyber efforts. Before this last election, the Connecticut National Guard, in particular, was a really invaluable resource to many local officials in preventing cyberattacks and taking action to deter them, and then more recently, as you know and we discussed it, the National Guard was an immense resource to Connecticut in responding to ransomware attacks against Hartford schools and in preparing for responses to particular attacks, but also, again, detering them.

I am also very expedited about the grant that the University of New Haven received to train more National Guard members on cybersecurity skills under Project Ironclad. Not only will the University of New Haven help us train more cybersecurity talent in New Haven and Connecticut, but it could also help create a national pipeline to recruit and retain the expertise in our country that we so desperately need.

Could you explain how the University of New Haven's Project Ironclad training program fits with our need for more cybersecurity talent.

General NAKASONE. Certainly, Senator, but let me take a step back and just talk a little bit about the work of the Connecticut National Guard, because I think that in my previous statement, I wasn't specific enough on how big a deal this was.

So, if you think about it, a ransomware, and as I indicated, ransomware on the 2nd of September that is impacting the school system, but it is also impacting fire, and police, and emergency medical services. Think about that, if you are losing that from a capability within your community, Connecticut National Guard, 24 hours, working with us at U.S. Cyber Command and National Security Agency, utilizing a capability called the Cyber 9–Line where they are able to leverage our expertise back at Fort Meade, and then being able to deal with the problem.

This is the Connecticut National Guard though that is solving the problem. They are just getting a bit of assistance from us. That is a huge deal and I think it is really a great exemplar of how powerful the National Guard can be not only in a situation like this, but also, I want to point out the work that they did during the 2020 election in ensuring its success.

Also, most importantly, and I don't think it is well-known, their work with the Department of Homeland Security in ensuring the security of Operation Warp Speed, our ability to bring a vaccine for COVID–19 to the American populous. This is the work that the National Guard has done over the past 9 months and I think it is critical.

In terms of New Haven, this is really a great news story and being able to, again, generate interest, generating context, generating an ability for those that have, you know, a desire, a knowledge, an inkling of what they want to do in the future and bringing them with the capability to train and then being exposed to cyber for the future.

Senator BLUMENTHAL. I think that your points are so well taken. Our National Guard has been such a critical resource in Connecticut in the elections, in countering ransomware, in building the kind of intellectual infrastructure that we need. As I remarked to you in our conversation, the National Guard draws on the expertise of citizen soldiers who are in civilian jobs involving information technology (IT). They are experts in major corporations and they are providing their expertise now to not only our Nation's military, through the National Guard, but also to civilian election officials, to local education efforts to deter ransomware, and I think your point about the University of New Haven is so well taken, the Ironclad project offers tremendous promise of recruiting, training, and retaining the talent that we need in our military, as well as in our civilian lives for cybersecurity and cybersecurity is our future.

I thank you for the work that you are doing and that you are encouraging and promoting by the National Guard. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Blumenthal.

Now via Webex, let me recognize Senator Rosen.

I thank Senator Kelly for his patience.

Senator Rosen?

Senator ROSEN. Thank you, Chairman Reed.

Thank you to our witnesses for your service and, of course, always for being here today.

As a former computer programmer, I am interested in learning how DOD's cyber strategy can really strengthen our Nation's ability to withstand and respond to cyberattacks.

I would also like to recognize today, the role that Nellis Air Force Base plays in supporting SOCOM mission in the battlefield. It is really, really important and I am proud of our men and women there at Nellis Air Force Base.

But I want to talk about information warfare. Despite an unprecedented level of foreign influence campaigns, we know they are targeting the United States and other democracies. We lack a clear strategy to combat information warfare.

As the National Security Strategy makes clear, our autocratic adversaries are using aggressive, aggressive information warfare tactics to interfere in our democratic elections around the world, exploit the pandemic, and erode trust in the rules-based international order.

So, General Nakasone, and then General Clarke, what is the appropriate role for the military to play in this environment of heightened information warfare?

General NAKASONE. Senator, I think the appropriate role is the role that we have begun playing since 2018, which is the perspective of how do we defend forward. The idea of operating outside of the United States, being able to both, enable our partners with information and act when authorized.

This is an active approach to our adversaries. It has been most effective, as we have seen, with the 2018 and 2020 elections with adversaries attempting to influence us, attempting to interfere, but not being able to do that. That is based upon the strategy of defend forward and the instantiation of persistent engagement. That is the start of it.

As I mentioned earlier today, I also think there is a broader piece that is being worked right now by the administration in terms of how do we improve the further resilience of the United States as we look at adversaries continuing to avoid our laws and policies and try to use our own infrastructure in their own attempts.

This is a continual effort that we have to be at. This is not going to be episodic. This is something that U.S. Cyber Command and the other combatant commands need to continue to work at.

Senator ROSEN. So, perhaps, General Clarke, you can speak to this. I want to add one more thing to this question now that you talk about defend forward.

How do we deter our adversaries' cyber aggression by changing their cost-benefit analysis? How do we make it not worth their while to attack us and what policies are we doing there? When you speak about defend forward, isn't that part of this equation, too?

General CLARKE. Senator, you raised a great point.

Number one, I think we have to work closely with our Department of State and other agencies in this space. Number two is that while General Nakasone talks about forces forward, which I agree with, we also have SOCOM forces for it that are absolutely the

MISO [Military Information Support Operations] professionals that work closely with the embassies and with foreign partners, and that ties this ecosystem of forward all the way back to the capabilities and capacities that exist in the U.S.

I think by working closely with those partners to ensure that our adversaries or competitors are not getting that free pass and to recognize what is truth from fiction and continue to highlight that through using our intel communities is critical.

General NAKASONE. Senator, if I might add on to that, to your point with regards to imposing costs, this is not just the Department of Defense. As General Clarke rightly points out, this is a Whole-of-Government effort. This is what the power of Treasury brings to it, the Federal Bureau of Investigations, Justice, Department of Homeland Security. This is the lesson that we have learned is that we have to operate together, because the partnership is where the power is.

Senator ROSEN. Well, that is great.

I want to continue on that. We do have a Cyber Strategy. We have had a lot of cyber espionage.

How often should our cyber strategy be updated to reflect current threats and the current challenges? How often do you envision that we need to do that in order to stay relevant?

If it is 2 years old, 3 years old, it is not being responsive, and so I was wondering what you think would be appropriate for these kinds of cyber strategy reports to be updated.

General NAKASONE. So, we have an interim National Security Strategy guidance that is out, that the administration has put out, that has been very effective for us to start our guideline with it. It talks about cybersecurity as a key enabler in that. That is an important piece of what our Nation needs to do.

Senator ROSEN. Yeah, but actual threats, how do we let people stay up to date on actual threats?

General NAKASONE. Obviously, that is through the continuing dialogue in terms of what our intelligence community is talking about, obviously, what our Government is talking about, and also, really importantly, what the private sector is talking about, because they are seeing so many of these threats, Senator.

Senator ROSEN. Thank you. I believe my time has expired, Mr. Chair.

Chairman REED. Thank you very much, Senator Rosen.

Gentlemen, thank you for your service to the Nation and thank you for your testimony today.

This will conclude the open portion of the hearing. We will reconvene in SCV–217 as quickly as possible.

Thank you very much, again. The open hearing is adjourned.

[Whereupon, at 11:39 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JACK REED

CIVILIAN OVERSIGHT OF U.S. SPECIAL OPERATIONS COMMAND

1. Senator REED. General Clarke, at the hearing, you stated, "What I believe is a key role for [the Assistant Secretary of Defense for Special Operations/Low-Intensity Conflict] (ASD SO/LIC) is actually to be an advocate for [Special Operations Command] (SOCOM), you know, within the department, and so when decisions are

made about services and service budgets and service personnel decisions, having ASD SO/LIC in the room to be able to be that advocate for us, to me is the most important aspect that ASD SO/LIC can do for SOCOM." Do you also support the ASD SO/LIC's role as the "service secretary-like" civilian responsible for the oversight of SOCOM? If so, why?

General CLARKE. I absolutely support the intent of Congress for civilian oversight of USSOCOM from across the Department, including from the ASD(SO/LIC) for those Special Operations-peculiar administrative matters relating to the organizing, training, and equipping of Special Operations Forces (SOF).

QUESTIONS SUBMITTED BY SENATOR JACKY ROSEN

DEPARTMENT OF DEFENSE CYBER STRATEGY

2. Senator ROSEN. General Nakasone, to address the challenge of establishing deterrence in cyberspace, the Department of Defense's (DOD) 2018 Cyber Strategy outlined the "defend forward" approach—meaning identifying our adversaries' cyber campaigns early on and engaging in offensive operations to disrupt the attacker's infrastructure. How often should U.S. Cyber Command (CYBERCOM) be assessing DOD network vulnerabilities to ensure that fixes have been made in a timely and adequate fashion?

General NAKASONE. [Deleted.]

3. Senator ROSEN. General Nakasone, the 2018 DOD Cyber Strategy calls for retaining the current cyber workforce and finding talented new people to recruit. Legislation that I introduced authorizing a Junior Reserve Officers' Training Corps science, technology, engineering, math, and cyber program was included in last year's National Defense Authorization Act. More needs to be done if we are to remain competitive on the global stage. Would you support the establishment of a civilian cybersecurity reserve to cultivate a qualified cyber workforce that supports the DOD mission?

General NAKASONE. Although that is a question for policy makers, I support any national initiatives that better leverage existing cyber talent in defense of the Nation or contribute to the expansion and further development of the Nation's cyber workforce. A talented cyber workforce is essential to maintaining our competitive edge and our Government should be proactive in its development.

CYBER COLLABORATION WITH ALLIES

4. Senator ROSEN. General Nakasone, our allies are essential to enhancing U.S. cybersecurity. We rely on our partners to conduct threat hunting, enable early warning, and harden our collective defenses. How are you collaborating with our allies to use their unique cyber capabilities to support our military cyber operations, and use those capabilities to our collective advantage?

General NAKASONE. [Deleted.]

5. Senator ROSEN. General Nakasone, how will you enhance information-sharing and cooperation with NATO partners to prevent, mitigate and recover from cyberattacks?

General NAKASONE. [Deleted.]

ILLICIT DRUG TRADE

6. Senator ROSEN. Mr. Maier and General Clarke, through the illicit drug trade, transnational criminal organizations are fueling instability in the Western Hemisphere by crippling the rule of law through corruption, eroding good governance, and hindering economic development, which also can serve as root causes of migration in the region. To counter these threats, I am curious what more U.S. Special Operations Command (SOCOM) can do to counter the illegal drug trade. What are the largest gaps in U.S. efforts to reduce the foreign supply of illicit drugs, and does SOCOM have the adequate resources to effectively supplement present interdiction operations?

Mr. MAIER. U.S. Special Operations Command (USSOCOM) supports U.S. law enforcement partners' efforts to interdict illicit drugs, disrupt the flow of illicit revenue to criminal networks, and counter other forms of transnational organized crime in the Western Hemisphere, including human trafficking and smuggling and illicit mining. USSOCOM provides this support by use of the Department of Defense's counterdrug authorities and appropriated funds for such purposes. In addition to

providing intelligence analysis support to U.S. law enforcement partners to illuminate illicit threat networks, U.S. special operations forces regularly support U.S. Northern Command (USNORTHCOM) and U.S. Southern Command (USSOUTHCOM) efforts in the region by conducting training of, or alongside, partner-nation units that are responsible for combatting drug trafficking and transnational organized crime that fuel violence and instability in the region.

USSOCOM is currently resourced appropriately to continue providing intelligence analysis and other support in the Western Hemisphere. However, I want to highlight that Section 1022 of the National Defense Authorization Act for Fiscal Year 2004, which authorizes USSOCOM's counterdrug-funded support to counter terrorism and other forms of transnational organized crime, is set to expire at the end of fiscal year 2022, if not reauthorized before then.

General CLARKE. USSOCOM assists in countering illegal drug trade by providing analytical support to U.S. law enforcement (LE) agencies through U.S.C. title 10 sect 284(b). Within USSOCOM, Counter Threat Finance (CTF) analytical resources can shift from supporting current National Defense Strategy threats to countering drug trafficking organizations, if directed.

7. Senator ROSEN. General Clarke, can you describe how cooperation with our partner nations supports our mission to weaken transnational criminal organizations? How can we increase the interoperability with our partner nations?

General CLARKE. USSOCOM supports respective Geographic Combatant Command Theater Campaign Plans to include approved Security Cooperation and Security Force Assistance activities (§333) with our partner nations. These activities promote interoperability with partner nations and increase their institutional capability and capacity to weaken transnational organized crime. Through support to law enforcement (§284), combined training (§321/322), and continued and enhanced focus on regional interoperability and institutional capacity building (§332), USSOCOM assists in enabling our partners to identify, generate, lead and sustain operations, in coordination with U.S. Forces, regional partners, or unilaterally.

QUESTIONS SUBMITTED BY SENATOR JAMES M. INHOFE

HUNT FORWARD OPERATIONS

8. Senator INHOFE. General Nakasone, how do "Hunt Forward" Operations complement cooperation with our allies and partners?

General NAKASONE. [Deleted.]

9. Senator INHOFE. General Nakasone, how are these operations aligned with the Pacific Deterrence Initiative and European Deterrence Initiative?

General NAKASONE. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR TOM COTTON

CHINA

10. Senator COTTON. General Nakasone, when you appeared before this Committee in 2019 you said that you saw Artificial Intelligence as a critical enabler of CYBERCOM operations and there should be no doubt that our competitors also recognize the importance of Artificial Intelligence for their own military use. Can you describe how the People's Liberation Army is currently militarizing Artificial Intelligence and Machine Learning, and explain any significant areas we are already lagging behind China in those technologies?

General NAKASONE. As Commander of USCYBERCOM, I would defer to the Intelligence Community's China and AI experts to provide specific answers to this question. However, speed, agility, and the ability to adapt rapidly are critical to operational effectiveness in cyberspace. China's advances in AI are therefore a significant concern.

11. Senator COTTON. General Nakasone, China has historically been willing to sell military technology, which in the future will include artificial intelligence (AI) and AI-enabled weapons, to state actors with authoritarian aspirations and to non-state actors with anti-American views such as ISIS. What potential issues do you see the United States having to contend with from a national security perspective over the next decade, both strategically and ethically?

General NAKASONE. Although I must defer to those elements of the Department of Defense more closely involved with threat assessment, policy development and acquisition of autonomous weapons, I do see this as a significant area of interest, particularly when U.S. cyber capabilities could be employed as a remediating response.

12. Senator COTTON. General Nakasone, the Chinese military (PLA) currently recognizes several areas where it lags behind the US, two of which are technical expertise and semiconductor manufacturing. As the Chinese Communist Party shores-up these capability gaps, how big a risk is it to the United States that the industrial base providing us with the most advanced semiconductor technology is located within range of PLA weapons?
General NAKASONE. [Deleted.]

13. Senator COTTON. General Nakasone, China has declared their desire to become the World's leader in AI by the year 2030. What would that mean for the United States' future should Beijing surpass our own abilities to develop, field, and responsibly control the use of AI?
General NAKASONE. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR THOM TILLIS

COMMERCIAL INDUSTRY

The recent Sunburst and Hafnium hacks have exposed programs that are clearly operating in a seam in between commercial and governmental networks and property. We know you have made major progress sharing with commercial industry.
14. Senator TILLIS. General Nakasone, what more can be done, and what legislation is needed, to make sharing with the commercial industry more effective?
General NAKASONE. [Deleted.]

CAPABILITIES

15. Senator TILLIS. General Nakasone, do you need more human capital to execute your mission?
General NAKASONE. Yes, the strategic environment has changed since the Cyber Mission Force was designed in 2012. In summer 2020, USCYBERCOM conducted a force growth study as part of the Secretary of Defense Combatant Command Review. The Command has made recommendations for.force growth, which were approved by the Department of Defense. Specific details can be released after the President's Budget is approved.

16. Senator TILLIS. General Nakasone, if so, how many more people would you need in order to meet your operational goals?
General NAKASONE. Yes, the strategic environment has changed since the Cyber Mission Force was designed in 2012. In summer 2020, USCYBERCOM conducted a force growth study as part of the Secretary of Defense Combatant Command Review. The Command has made recommendations for force growth, which were approved by the Department of Defense. Specific details can be released after the President's Budget is approved.

17. Senator TILLIS. General Nakasone, what avenues do you recommend we pursue to get you more long-term forces to execute your missions?
General NAKASONE. USCYBERCOM and the Services have made progress in recruiting and retaining the talent we need to deliver joint force objectives for the Nation. At this time, we are moving forward to source and field additional teams as approved in the Department's 2020 Combatant Command Review.

18. Senator TILLIS. General Nakasone, some suggest that "cyber vs cyber" actions do not work. What do you say to that?
General NAKASONE. [Deleted.]

19. Senator TILLIS. General Nakasone, if we refrain from acting in a "cyber vs cyber" framework to disincentive these behaviors, what do you think we should be doing?
General NAKASONE. [Deleted.]

20. Senator TILLIS. General Nakasone, how do you see the balance between collection opportunities in cyberspace and the need to use cyberspace for defensive or deterrent activity?

General NAKASONE. [Deleted.]

PERSISTENT ENGAGEMENT

The Cyber Strategy lays out an ambitious vision for the Cyber National Mission Force in particular: disrupting adversary cyberattacks, providing indication and warning to potential targets at home, and engaging with adversaries below the level of armed conflict on a daily basis.

21. Senator TILLIS. General Nakasone, nation state actors are becoming bolder and more destructive within cyberspace. What do you see as the right strategy to stop these acts?

General NAKASONE. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

SPECIAL OPERATIONS COMMAND AS A MODEL FOR THE JOINT FORCE

22. Senator BLACKBURN. General Clarke, I understand that the JAIC and SOCOM are working together to deliver AI-enabled predictive maintenance capabilities. Can you describe that partnership, and whether it has proven effective?

General CLARKE. USSOCOM and the JAIC formed the USSOCOM Incubator in fiscal year 2019 consisting of technical experts from the teams at the JAIC Joint Logistics Mission Initiative and the 160th Special Operations Regiment's (SOAR) Digital Integrated Maintenance Environment (DIME). The USSOCOM Incubator enables rapid development of AI-enabled capabilities in an agile environment where warfighters and developers work collaboratively together.

The USSOCOM Incubator orchestrates testing, evaluation, operationalization, and retraining of AI-enabled capabilities, as well as developing extensive Technical Solutions documents in support of a broader playbook within the DOD for AI development. The Work Unit Code (WUC) Corrector is an example of a powerful AI capability that uses Natural Language Processing (NLP) to analyze user-generated text within maintenance records to assign an appropriate WUC to each record. More than 3 million records have been processed by the WUC Corrector and routed through the reliability business intelligence (BI) tools, focusing engineering services to the highest priority issues.

Additionally, the Model at the Edge (MaTE) Kit is designed for units operating in locations with limited bandwidth networks for all communications. The MaTE Kit was developed as an "all-in-one" solution to enable AI and analytics at the edge, including moving large aviation maintenance data sets across a network. The MaTE Kit is a specialized laptop computer running the required processes and services to conduct data collection, processing, storage, prediction, and a visualization of the AI-enabled predictions in a custom browser-based user interface. This capability provides leadership with near real-time predictions to make timely maintenance decisions that decrease maintenance downtime, while increasing both capital efficiency and aircraft readiness. The MaTE Kit was developed to support current AI models and future AI-enabled capability development. All processes and services within the MaTE Kit are government-owned and developed by USSOCOM.

23. Senator BLACKBURN. General Clarke, as a proof of concept, do you think this is something that could be applied to the joint force?

General CLARKE. Yes. The predictive maintenance partnership between USSOCOM and the JAIC demonstrates the value of collaboration to solve complex problems that are designed to scale. The capabilities developed to address maintenance challenges at the 160th SOAR have numerous applications and both USSOCOM and the JAIC are committed to scaling these capabilities to the larger joint enterprise.

The JAIC selected the MH–60 platform as the initial focus area for predictive maintenance because variations of that platform are used extensively across USSOCOM, Army, Navy, Air Force, and the Coast Guard. The software and models developed for USSOCOM's MH–60 are just one example of joint proofs-of-concept with potential to scale across the global DOD Enterprise. Internally, USSOCOM is already leveraging some of these scalable AI-enabled capabilities within Air Force Special Operations Command to develop software and models applied to the CV–

22 aircraft while concurrently exploring similar capabilities for ground, sea, and surface vehicles.

USSOCOM and the JAIC are also pursuing transition from the USSOCOM Incubator at the 160th SOAR to a production ready, globally scalable AI-enabled capability available to the entire Department. The intent of the USSOCOM Incubator is to rapidly develop AI-enabled capabilities that scale in a joint environment. The Technical Solutions documents serve to guide other DOD organizations down the path to a successful predictive maintenance program.

24. Senator BLACKBURN. General Clarke, how do you see AI predictive maintenance applications changing the role of asset management within some of our technical and man-hour intensive platforms?

General CLARKE. Asset management across the Department will transform significantly through the broad application of predictive applications. Maintenance issues on our technical and man-hour intensive platforms are often more reactive than predictive, at times resulting in significant costs to repair and impacts to downtime. Simply following a prescribed schedule of maintenance based on time is no longer sufficient. The more effectively and accurately USSOCOM can leverage data, analytics, and AI-enabled capabilities, the greater the opportunity to minimize expenditure and increase readiness. Predictive maintenance is becoming an integral part of USSOCOM's asset management strategy, especially for complex and technically intensive platforms where repairs are cheaper and faster when identified earlier than when a part or system had already failed.

SPECIAL OPERATIONS COMMAND TALENT RETENTION AND WORK FORCE DEVELOPMENT

25. Senator BLACKBURN. General Clarke, do those personnel that comprise "non-SOF support" generally receive SOF-specific training to enable them to perform their support role? What about pay and entitlement incentives that exceed what their conventional force counterparts?

General CLARKE. USSOCOM "non-SOF support" personnel receive SOF-specific training tailored to support various SOF missions in their respective units and based on their assignments. Additionally, these members may receive monetary compensation beyond their conventional force counterparts depending on assignment location. A few examples are in U.S. Army Special Operations Command and Air Force Special Operations Command, where qualified "non-SOF support" NCOs receive Special Duty Assignment Pay or reenlistment bonuses based assignment location, and Marine Corps Forces Special Operations Command, where Specialty Operator Capability Specialists receive $150 in Assignment Pay based on their role on the tactical team.

26. Senator BLACKBURN. General Clarke, when recycled back into the conventional forces after their SOCOM tour is done, do you believe these types of personnel are inclined to remain in service and why?

General CLARKE. USSOCOM nor its Service Components have the ability to determine whether personnel returning to conventional forces are inclined to remain in service. However, we encourage all who have served in the Special Operations enterprise to continue to serve our Nation and to share and employ the skills they have acquired during their tenure with USSOCOM.

UNCONVENTIONAL WARFARE IN GREAT POWER COMPETITION

27. Senator BLACKBURN. General Clarke, does SOCOM have the resources and authorities necessary to pursue the application of unconventional warfare measures in countering China?

General CLARKE. USSOCOM has the forces and authorities available to conduct congressionally funded and authorized operations such as 1202 projects, Section 333 Security Cooperation / Build Partner Capacity efforts, and some Military Information Support Operations initiatives. However, most of our operations conducted by SOF are funded through USSOCOM Major Force Program-11. As far as the authorities to apply unconventional warfare measures are concerned, I assess USSOCOM has the needed authorities to operate within the recently released Interim National Security Strategic Guidance and current National Defense Strategy guidelines. USSOCOM would require the commensurate authority to expand our efforts should the environment change to allow expanded measures in countering China.

ASSISTANT SECRETARY OF DEFENSE FOR SPECIAL OPERATIONS/LOW-INTENSITY CONFLICT

28. Senator BLACKBURN. Mr. Maier and General Clarke, what have been the effects of ASD SO/LIC serving in a "service secretary-like" role?

Mr. MAIER. The Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (ASD(SO/LIC)) provides oversight of the SOF enterprise through the administrative chain of command for USSOCOM. ASD(SO/LIC) oversight has been particularly important in addressing complex challenges related to special operations forces (SOF) personnel and the development, resourcing, and sustainment of SOF-unique capabilities. Senior civilian leadership that is outside a uniformed chain of command provides an independent voice to the Secretary of Defense, with DOD senior leadership in the Pentagon, and with USSOCOM leadership and staff.

Since the Secretariat for Special Operations was established in 2018, the office of the ASD(SO/LIC) has deepened its relationship with USSOCOM at all levels and has made progress in gaining membership in senior Departmental policymaking bodies, including participation in the bi-weekly Military Department Secretary meeting with the Secretary of Defense. The Department is currently updating relevant guidance regarding ASD(SO/LIC)'s oversight and management of SOF-related administrative matters, through which the office reports directly to the Secretary of Defense as a Principal Staff Assistant, and ASD(SO/LIC)'s role as a policy advisor to the Under Secretary of Defense for Policy and to the Secretary of Defense for special operations, counterterrorism, and irregular warfare matters.

These efforts strengthen the authorities of the office of ASD(SO/LIC) and help ensure civilian oversight of the most critical issues facing the SOF enterprise, including diversity and inclusion within the SOF community, SOF culture and ethics, and investments in technologies and capabilities that will enhance our ability to compete more effectively with great-power adversaries and conduct counterterrorism operations more sustainably.

General CLARKE. The inclusion of ASD(SO/LIC) allows SOF equities to maintain readiness and ensure SOF is linked with the Joint Force in support of national strategic objectives. ASD(SO/LIC)'s voice in the development of national defense strategic guidance will ensure the inclusion of SOF's unique capabilities as part of the Joint Force. Likewise, ASD(SO/LIC)'s participation in Service-level fora on the Department's priorities for countering extremism, prevention of sexual harassment and assault, and diversity and inclusion enhance USSOCOM's actions in these areas. Longer-term, I foresee enhanced readiness of SOF with ASD(SO/LIC)'s inclusion in Department-level fora discussing joint capabilities given SOF's reliance on the Services as partners in developing our unique organizations, training, and equipping.

CRITICAL INFRASTRUCTURE

29. Senator BLACKBURN. General Nakasone, what exercises and activities do you assess to be most important to the success of the Guard's provision of cybersecurity assistance?

General NAKASONE. USCYBERCOM conducts extensive exercises to prepare for Total Force support to civil authorities and responses to cyber incidents of national consequence. For example, USCYBERCOM has partnered with the National Guard in a broad span of exercises—Cyber Flag, Cyber Guard, and Cyber Shield—for almost a decade. Such exercises are designed to ensure the cyber Total Force, both Active Duty and National Guard, are trained to the same standard, able to share best practices, and are prepared to work in mutual support and collaboration in defense of the Nation's critical infrastructure. USCYBERCOM also sets the training standards and has leveraged the National Guard in critical real-world missions, such as securing critical cyber infrastructure and defending the 2020 elections from foreign interference.

30. Senator BLACKBURN. General Nakasone, in what way could the DOD better develop common architectures, tool suites, and practices for the National Guard and Cyber Mission Forces to provide cybersecurity assistance to critical infrastructure companies?

General NAKASONE. USCYBERCOM is focused on ensuring that forces across the Total Force are interoperable. Active duty and Reserve Component Cyber Protection Teams operate within similar mission platforms and with similar tool suites. Additionally, we also worked with the National Guard Bureau to create a mechanism that enable Guard units to share information about cyber incidents quickly, easily, and uniformly (the Cyber 9-line). We work in conjunction with sector-specific agencies to understand requirements and prepare for responses to appropriate requests for support to civil authorities when required.

DEFENSE FORWARD

31. Senator BLACKBURN. General Nakasone, what good is CYBERCOM's Cyber National Mission Force doing for the private sector?

General NAKASONE. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR JOSH HAWLEY

AFGHANISTAN

32. Senator HAWLEY. General Clarke, since you took command in March 2019, has SOCOM provided the Secretary of Defense with options for pursuing United States counterterrorism objectives in Afghanistan following the withdrawal of all United States and Coalition forces from Afghanistan, including in the event of Afghan state collapse?

General CLARKE. USSOCOM is a supporting command to United States Central Command (USCENTCOM) for the conflict in Afghanistan, and USSOCOM would assist Commander, USCENTCOM to provide options to the SECDEF. USSOCOM has worked and continues to work closely with the Joint Staff, OSD, Interagency and fellow Combatant Commanders to develop United States counterterrorism options in Afghanistan post-withdrawal of all United States and Coalition forces.

DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, APRIL 13, 2021

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

UNITED STATES EUROPEAN COMMAND AND UNITED STATES TRANSPORTATION COMMAND

The Committee met, pursuant to notice, at 9:32 a.m. in room SD–G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Peters, Manchin, Duckworth, Rosen, Kelly, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Cramer, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. Let me call the hearing to order.

This morning, the Committee will receive testimony from General Wolters, Commander, United States European Command (EUCOM), and North Atlantic Treaty Organization (NATO) Supreme Allied Commander Europe (SACEUR), and General Lyons, Commander, United States Transportation Command, TRANSCOM.

Thank you both for the many decades of military service and please extend our appreciation to the men and women serving under your command.

General Lyons, this is likely your last hearing before the Committee and on behalf of my colleagues, I want to thank you, and your family, for a lifetime of dedication and service to the Nation, which continues with your son, who is now a cadet at West Point. So, the tradition goes forward. Thank you.

The security challenges in the EUCOM area of responsibility grow more complex each year. Russia continues to subvert the rules-based international order, including using military force to intimidate and coerce its neighbors and to undermine their sovereignty. Russia is also engaged in an ongoing hybrid warfare campaign just below the threshold of conflict that would provoke a military response, including disinformation campaigns targeting democratic processes and formenting discourse, extensive cyber es-

pionage efforts, and the continued use of proxy groups to further Russian interests in numerous countries around the world. Combating the Russian hybrid threat requires a whole-of-government effort.

General Wolters, I will be interested to hear your views on the military means required as part of that whole-of-government effort, as well as what support we can provide our allies and partners as they seek to counter Russian malign influence.

Last week EUCOM raised its watch condition level in Ukraine from "possible crisis" to "potential imminent crisis" in response to significant Russian military activity in Ukraine and across Europe. The Committee will benefit from your assessment of the current security situation and an update on EUCOM's engagements with partners and allies in response to the Ukrainian situation.

Consistent with the 2018 National Defense Strategy, EUCOM continues to refine the operational concepts, plans, and programs necessary to counter Russia in the strategic competition that defines this theater. The United States must ensure a combat-credible military deterrent against Russia's ambitions to threaten the sovereignty of our allies and partners.

General Wolters, the Committee would like to hear your views on the posture and investments necessary to attain and maintain deterrence.

Turning to TRANSCOM, the men and women of TRANSCOM perform duties that sustain the whole of the Department of Defense, in protecting our Nation's security. With the competitive edge in its ability to deploy and sustain America's armed forces, TRANSCOM provides Department of Defense (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 them, the United States would be at a significant disadvantage almost everywhere in the world.

General Lyons, last year you were adamant about retaining air fueling capability because you felt that TRANSCOM was at the minimum acceptable levels for meeting peacetime demand for tanker capacity. This year, I understand the Air Mobility Command believes that TRANSCOM can rely on some contribution of the KC–46 tankers, even though the KC–46 is not able to conduct unrestricted operations. I would be interested in any information you can share on this situation.

Our global transportation capability, owned or 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. Two years ago, the Committee decided that the Department needed to continue the analytical effort to identify requirements because the studies presented at that time did not reflect implementation of the National Defense Strategy. General Lyons, perhaps you could give us an update on where TRANSCOM stands in updating this analysis.

General Lyons, you have initiated a program to contract out management of the Defense Personal Property Program (DP3) that handles the movement of household goods for DOD.

Under this plan, a contractor team would be responsible for issuing contracts to individual movers and carriers, rather than the U.S Government.

After a competition last year, TRANSCOM awarded the contract, but the losing bidders protested the award, and Government Accountability Office (GAO) upheld the protest. General Lyons, I would be interested in hearing about the status of this program.

Finally, TRANSCOM also faces a unique set of cyber threats because of the command's extensive work with private-sector entities in the transportation and shipping industries. General Lyons, the Committee would appreciate an update on TRANSCOM's effort to improve its cybersecurity posture.

Again, thank you both again for being here this morning, and I look forward to your testimony.

Before I turn it over to Senator Inhofe, I would just note, for my colleagues, that there will be an informal classified briefing immediately following this session in the Senate Security Building Office in the Capitol.

Senator Inhofe, please?

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Thank you, Mr. Chairman.

I would just acknowledge both of our witnesses as very good friends and I would say to General Lyons, it is not too late to change your mind.

As stated, many times before, this Committee's top priority is to ensure the effective implementation of the NDS, the National Defense Strategy, which focuses on China and Russia as the primary threats to our national security.

That means that we have to ensure that our combatant commands have what they need to address the challenges in this strategic competition. We are going to be talking about that with both of our witnesses, and you have got to be really, and I am sure you will be, very straightforward with some of the reductions that, as I see, are not going to be desirable.

I want to highlight that Russia's recent activities regarding Ukraine are very concerning. At the same time, Russia and Chinese threats are converging in Europe with an ever-more aggressive China seeking influence and threatening security through the economic coercion.

These growing threats, there are three that highlight the value of our 2018 NDS and, secondly, they illustrate why we should not be reducing defense spending, and, thirdly, demonstrate the critical need for more advanced capabilities like the F–35, to deter Russia, particularly since there have been some controversy over that from some of the leadership of this administration.

TRANSCOM is focused on a full-spectrum mobility operations to meet requirements needed to combat both, Russia and China, as well as support any other global engagements, from training to force projection to forward deployed forces.

I encouraged to hear the administration's voice's strong support for NATO, but, you know, the rhetoric is easy. We want to make sure we have the resources to support those statements that are being made.

General Wolters, I look forward to hearing about the priorities for the European Deterrence Initiative and where else we need to bolster our defenses to address threats you see growing every day.

General Lyons, I would like to know the status of our refueling capability that the chairman has always addressed, as well as, he has addressed the global household goods contacts. We have some specific questions about that.

Finally, whether this morning or in our classified session, I would like to hear from both of you as to how this contested environment impacts mobility operations.

General Lyons, you have been a friend for a long time, and as I said, it is not too late.

Mr. Chairman?

Chairman REED. Thank you very much, Senator Inhofe.

Now, let me recognize General Wolters for your opening statement.

STATEMENT OF GENERAL TOD D. WOLTERS, USAF, COMMANDER, UNITED STATES EUROPEAN COMMAND/NORTH ATLANTIC TREATY ORGANIZATION SUPREME ALLIED COMMANDER EUROPE

General WOLTERS. Chairman Reed, Ranking Member Inhofe, distinguished Members of the Committee, on behalf of the men, women, and families who serve the Nation in the Euro-Atlantic, we want to thank you one more time for your steadfast support. It remains a privilege to serve alongside these patriots and our like-minded allies and partners.

It is great to be lying abreast with our distinguished USTRANSCOM commander, General Steve Lyons. He has led with distinction for the last 2½ years in his capacity and over the last year, he has been pivotal in not allowing the pandemic to transform into a security crisis, and we thank him for his blood, sweat, and tears to the Nation.

We would also like to pass our condolences to those impacted by COVID–19. The battle against the virus continues and we must remain vigilant.

We are fully aligned with Secretary Austin's priorities to defend the Nation, take care of our people, and succeed through teamwork. Via NATO, we work closely with our allies and partners to address the evolving challenges posed by our adversaries to secure peace, and protect our interests abroad. NATO remains the strategic center of gravity and the foundation of deterrence and assurance in Europe.

Everything we do is about generating peace. We compete to win. We deter, and if deterrence fails, we are prepared to respond to aggression with the full weight of the Transatlantic Alliance.

The United States' relationships with European allies and partners remains a key, strategic advantage and we must defend it. We live in an increasingly complex and contested world. Political uncertainty, energy competition, and diffusion of disruptive technology are stressing the established rules-based international order. Threats and challengers seek to take advantage of these conditions through aggressive action using all instruments of national power and they are backed by increasingly capable military forces.

Adversaries amplify these malign activities and foster instability with disinformation.

Success in 21st century warfare demands that we embrace competition and all of its associated activities below the level of armed conflict. This is actually as critical as our preparation for crisis or conflict, themselves. We are in an era of strategic competition and winning in this era is all about ensuring that strategic competition does not morph into a global conflict.

One notable example of operations, activities, and investments contributing to competition and deterrence, it is our robust exercise program. This summer, when we execute our Defender series exercises, composed of USEUCOM's Defender Europe, and NATO's steadfast defender, 30,000 United States servicemembers, allies, and partners from all warfare domains, will demonstrate their ability to lift and shift massive forces over large swaths of territory at speed, and at scale, from the Atlantic, to the eastern periphery of the European continent. Once our troopers are on station, they will sharpen their responsiveness, resiliency, and lethality.

Our current security posture is strong, yet challenged, as evidenced by actions in the vicinity of Ukraine. We possess combat-credible capability across all domains: air, land, sea, space, and cyber. We will maintain and work to hone this capability to deter our adversaries and defensive partners in our interests.

The soldiers, sailors, airmen, marines, guardians, coast guardsmen, and civilians of USEUCOM, appreciate your support to defend the Homeland forward and preserve peace for the one billion citizens living in the Euro-Atlantic.

Chairman Reed, Ranking Member Inhofe, thank you, again, for this opportunity, and I look forward to fielding your questions.

[The prepared of General Wolters follows:]

PREPARED STATEMENT BY GENERAL TOD D. WOLTERS, UNITED STATES AIR FORCE

Armed Services Committee, on behalf of the dedicated men, women, and their families preserving peace in the European theater, it is an honor to testify before you today a second time as United States European Command (USEUCOM) Commander. It is a privilege to continue to serve alongside our dedicated patriots in a mission essential to national security. Their selfless service and determined commitment is an inspiration. Together, with likeminded allies and partners, our soldiers, sailors, airmen, marines, coast guardsmen, guardians, and civilians work tirelessly to deliver peace and secure the United States' interests.

For the last eight decades, many European nations have been key allies and partners for the United States and today they collectively serve as exporters of global peace and security. The interim National Security Strategy articulates how a free, and prosperous Europe, defended by Allied nations and a credible North Atlantic Treaty Organization (NATO) Alliance, remains foundational to our security in a competitive geopolitical environment. USEUCOM aligns operations, activities, and investments to meet the challenges of Strategic Competition with Russia and the People's Republic of China. Through our strategy, we compete for long-term sustainable advantage, deter attacks from potential aggressors, and prepare our Allies and Partners to respond decisively. Standing alongside our Allies and Partners, USEUCOM remains ready, should deterrence fail, to fight now and win. We value the collaborative work across the Joint Force to implement this strategy and express gratitude for continued Congressional interest and support.

In Europe, political uncertainty, energy competition, malign activity, and the global pandemic stress the rules-based international order and strain European states' resources. Strategic competitors seek to exploit these conditions using all instruments of their national power to gain advantage and create instability. This nexus challenges national governments and multi-national institutions like NATO and the European Union (EU). To address these issues, USEUCOM strategy prioritizes sup-

porting NATO's deterrence and defense of the Euro-Atlantic United States global operations.

RISKS AND CHALLENGES IN THE USEUCOM AREA OF RESPONSIBILITY (AOR)

The USEUCOM AOR encompasses 51 countries and territories, including Russia, Turkey, Ukraine, and the Caucasus. It contains significant maritime domains, encompassing the Arctic Region, the North and Central Atlantic, and the Mediterranean Sea. COVID–19 has presented challenges for nations across the globe, including those in Europe, and our deepest condolences are offered to all those impacted by this pandemic. In USEUCOM, we continue working diligently alongside Allies and Partners to ensure this health crisis does not become a security crisis. Thus far, our collective team has been successful, and we are buoyed through recent developments in vaccine production and distribution across the USEUCOM AOR.

RUSSIA

Russia's nuclear arsenal and strike capability provides Russia an opportunity to remain an enduring, existential threat to the United States, our Allies, and our Partners. A central concern is Russia's non-strategic nuclear weapons stockpile and the Kremlin's potential to use these weapons in crisis or conflict. President Biden agreed with President Putin to conduct a Strategic Stability Dialogue, which will allow the United States to raise our concerns about Russia's nuclear forces and doctrine. Beneath this threshold, Russia engages in malign activities across the globe, attempting to create instability, undermining the rules-based international order, and failing to meet obligations under international agreements. These activities continue despite widespread international condemnation and economic sanctions. Russian President Vladimir Putin and his regime's coercive and aggressive policies suggest Russian leadership will take risks to maintain power, counter Western influence, and seize international opportunities to increase the perception of Russia as a great power.

Russia seeks to maintain a sphere of influence by retaining and employing capabilities above and below the level of armed conflict to coerce neighboring sovereign nations and fracture its responsibilities under the Treaty on Conventional Armed Forces in Europe, and retains an active presence on sovereign soil in Ukraine, Moldova, and Georgia against the will of those countries. To support their efforts at political subversion and economic intimidation, Russia employs unconventional tools, ranging from disinformation campaigns, malicious cyber activities, and the use of private military companies. These tools support a range of semi-covert, malign actions to intimidate, weaken, and divide our Allies and Partners in the European theater and beyond. By probing Western response thresholds to expand the space below the level of armed conflict, Russian leadership habitually risks misinterpreting warnings and creating unintended escalation.

Over the past decade, Russia consistently remained among the world's top five military spenders. Despite a forecasted decrease in Russian Gross Domestic Product due to the pandemic, Russia will continue its military modernization efforts. These robust capabilities and modernized forces have been displayed during operations in Ukraine, Syria, and Libya. As a result, the Kremlin has growing confidence in its military leadership and menu of hybrid, conventional, strategic, and non-strategic nuclear capabilities needed to underwrite its 21st century security approach. Today, Russia underpins its military force posture with Integrated Air Defense Systems (IADS), cyber and electronic warfare systems, counter-space, and long-range precision fires capabilities; all critical to seizing and maintaining the initiative across the competition to conflict spectrum.

PEOPLE'S REPUBLIC OF CHINA (PRC)

The PRC's aggressive economic and diplomatic activities in the USEUCOM AOR signal Beijing's desire to build influence in Europe and challenge the established rules-based international order with an alternative model. Beijing pursues economic leverage over targeted nations through bilateral deals to build infrastructure, and secures agreements to its advantage in global trade and market access. Chinese foreign direct investment and government-backed business ventures provide Beijing an avenue to assert influence at the expense of enduring United States, Allied, and Partner interests. Seventeen Central and Eastern European nations participate in the China-led, 17+1 Cooperation Framework though there are indications that participants are more skeptical about its merits. Many European countries, including the 17+1, take part in China's One Belt One Road Initiative.

The PRC is focused on seizing the "high ground" in critical and emerging technology sectors with military application, including Artificial Intelligence, advanced robotics, quantum technologies, and hypersonics. In addition, the PRC's efforts to expand 5G networks into Europe through state-backed firms like Huawei and ZTE pose security risks. These networks place intellectual property, sensitive technology, and private personal information at heightened risk of acquisition and exploitation by the Chinese Government. This ongoing initiative, coupled with China's growing interest and investment in European ports and critical infrastructure, complicates steady state and contingency operations. We articulate this risk to our European defense counterparts and highlight shared values, interests, and equitable business practices that distinguish the United States as a partner of choice. European nations are becoming increasingly aware of, and concerned about, the risks associated with Chinese capital and investment from the PRC. We must hold the PRC accountable for its predatory and unfair practices and make sure that our technologies are not facilitating the PRC's military buildup or human rights abuses.

POLAND AND THE BALTICS

Poland and the Baltics remain a strategic focal point. For NATO, this region remains at risk of Russian aggression based on historical grievances and geographic position. Polish and Baltic geopolitical alignment with the West reminds the Kremlin of its limited sphere of control, isolation of its Kaliningrad exclave, and NATO's appeal to regional states. The Kremlin considers the Baltic's ethnic Russian population as justification for intervention. Russia actively targets this population with extensive propaganda and malign influence operations, while also conducting cyber operations to weaken Alliance resolve. Because Russian forces in the Western Military District and Kaliningrad hold a geographic and numerical advantage over regional NATO forces, it is critical that timely indications and warnings are available to position combat-capable forces to deter and, if deterrence fails, blunt attack.

Regional Allies continue to demonstrate their commitment to collective defense. Enhanced Forward Presence bolsters NATO's posture in the east with four multinational battle groups in Estonia, Latvia, Lithuania, and Poland. NATO air and missile defense forces reinforce collective security and stability through Baltic air policing operations and air defense exercises. Poland demonstrates resolve to meet Alliance commitments through defense budget increases, burden-sharing with the United States via the Enhanced Defense Cooperation Agreement, and ongoing modernization efforts, to include Patriot and F–35 weapon system acquisitions. Poland also hosts the United States Army's V Corps forward headquarters in Poznan, Poland, providing a needed level of command and control to synchronize United States Army, Allied, and Partner nation tactical formations operating in Europe.

BLACK SEA REGION

Ukraine

Following the purported annexation of Crimea in 2014, Russia and its proxies continue to undermine Ukrainian defense, economic, and political sectors, attempting to pull Ukraine back into the Kremlin's sphere of influence and obstruct its integration with Western institutions. The ongoing conflict in the Donbas region, instigated by Russia, continues to destabilize Ukrainian security. Ceasefire violations occur often despite the established Minsk agreements. Russia continues to subvert the Ukrainian Government through malicious cyber activities, supports illegitimate elections in Eastern Ukraine, and remains postured for the use of force in the Black Sea and Sea of Azov. Contrary to Russia's intent, these coercive actions energize Ukrainian society and reinforce aspirations to membership in Euro-Atlantic institutions. Ukraine continues to fight corruption and enact defense reform to meet conditionality requirements associated with the Ukraine Security Assistance Initiative (USAI).

Turkey

Despite political tensions and disagreements, Turkey remains a strategic United States Ally, critical to NATO and United States interests in Europe, Eurasia, North Africa, and the Middle East. Turkey possesses the second largest military in NATO and borders a volatile region. In addition to hosting thousands of United States personnel at sites across Turkey, the Turkish Armed Forces contribute to NATO missions in Afghanistan, Kosovo, and the Mediterranean Sea. United States forces in Turkey also support NATO ballistic missile defense and facilitate regional counterterrorism operations.

Ankara continues to view the Kurdish Workers' Party (PKK), the Democratic Union Party (PYD), and Syrian Democratic Forces (SDF) as security threats. United

States support for the SDF remains an area of difficulty in our bilateral security relationship. Turkey's purchase of the Russian produced S–400 air defense system ended Turkey's F–35 acquisition, further integration into NATO's IAMD Command and Control network, and resulted in sanctions for conducting significant transactions with Russia's defense industry through the Countering America's Adversaries Through Sanctions Act.

However, Turkey retains a pivotal role in countering Russia. Ankara's relationship with Moscow remains competitive and transactional, with Turkish engagement often aimed at constraining Russian behavior. Both nations view the Black Sea region within their natural spheres of influence, and each continues to oppose the other in Libya. Turkey can best counter Russia through bilateral cooperation with the United States and multilateral cooperation with NATO.

SOUTH CAUCASUS

The Kremlin exerts influence over South Caucasus countries through the manipulation of regional tensions and unresolved military conflicts. The Kremlin believes chronic instability in this area enables Russian regional hegemony. Russia maintains leverage over Georgia by occupying Abkhazia and South Ossetia, blocking free movement of people and goods within Georgia's territory, detaining and harassing civilians living in and near occupied areas, and undermining Georgia's NATO membership aspirations. After brokering a ceasefire arrangement between Armenia and Azerbaijan in November 2020, Russia increased its military presence in the region by deploying 2,000 troops to Nagorno-Karabakh as peacekeepers. Russia continues to sell military systems and hardware to both sides in the Nagorno-Karabakh.

BALKANS

The Balkans remain a strategically significant region where Russian, and now Chinese, malign influence and existing ethnic tensions foster instability. Russia uses social and political tensions to impede Euro-Atlantic alignment and integration. China's emergence as an alternative patron for economic and defense cooperation, under suspect terms, further disrupts the region. Nonetheless, North Macedonia's NATO accession in March 2020 is a regional success story.

Despite Kosovo declaring independence in 2008, Russia, China, and other states (including some EU and NATO members) have yet to recognize its sovereign nation status. Kosovo and neighboring Serbia have yet to normalize relations. We encourage both parties to maintain dialogue towards a peaceful solution. Kosovo's principal stabilizing force remains NATO's Kosovo Force (KFOR), which includes a small, but significant United States contribution that bolsters United States political leverage in the region. KFOR enables the security conditions required for normalization of Serbia-Kosovo relations and the planned 10-year transition of the Kosovo Security Force from 2018 to 2028.

Serbia seeks balance between East (Russia and China) and the West, but finds its EU ambitions hindered by Russian-stoked internal corruption, structural and economic challenges, EU–Russia sanctions, and the requirement to normalize Kosovo relations. Bosnia and Herzegovina continues to face political and ethnic instability. Fueled by Russian influence, obstructionists seek greater autonomy for Bosnia and Herzegovina's Serb-majority political entity, Republika Srpska, to weaken state authorities and frustrate further alignment with Western institutions. Nationalist politics and entrenched ethnic divisions between Bosniaks, Bosnian-Croats, and Bosnian-Serbs challenge Bosnia and Herzegovina's ability to chart a path of lasting stability and eventual NATO membership.

Chinese investments focus on large-scale transportation, energy, and information infrastructure. USEUCOM is concerned about Chinese motives as these initiatives expose EU and NATO member states to coercion and adversely affect the security of critical infrastructure. Furthermore, China continues to expand its defense and security ties with Serbia, particularly via high-level visits, unmanned aerial vehicle technology dependency, and joint exercises.

CENTRAL ATLANTIC AND THE ARCTIC REGION

The Central Atlantic encompasses the maritime approaches to the Homeland and the transatlantic Sea Lines of Communication. Rarely navigated by Russia since the 1990's, advances in its submarine fleet and expanding maritime strategic goals have reinvigorated Russia's access to the broader Atlantic Ocean. As a global common, the Atlantic Ocean must remain open and free to facilitate commerce between Europe, the United States, and other international markets. It is imperative that we maintain our competitive advantage in the Central Atlantic through bolstered U.S.

and Allied presence to defend the Homeland forward and maintain free and open transatlantic sea lines of communication.

We ensure these vital sea lines of communication remain open by securing the Greenland, Iceland, and United Kingdom gap, enabling access between the Atlantic and Arctic. USEUCOM coordinates with USNORTHCOM in these regions to provide a comprehensive approach to regional and homeland security. In the Arctic, Russia continues to militarize the region by introducing offensive capabilities that pose risks to United States and Allied forces and limit regional access. Collaborating with Allies and Partners, we work to enhance interoperability and proficiency, while demonstrating collective resolve to counter malign behavior. The Arctic remains a geopolitical zone of competition, driven by the opening of commercial shipping routes and increased access to resources including energy, minerals, and fisheries. We expect these activities and region focus to increase as the effects of climate change continue to be realized.

The existing rules-based order benefits all Arctic nations by facilitating sustainable economic development, fostering cooperation, and ensuring a stable conflict-free region. As a strategic corridor, a more open and active Arctic region will increasingly connect the United States Homeland, Europe, and the Indo-Pacific. China, declaring itself a "near-Arctic" power, invests in both Russian energy and the Northern Sea Route and seeks economic footholds among Arctic nations to gain influence over regional governance. In concert with our Allies and Partners, via a whole-of-government and whole-of-nations approach, USEUCOM must continue to maintain a credible Arctic deterrence to ensure that growing competition in this dynamic region does not lead to conflict.

VIOLENT EXTREMIST ORGANIZATIONS (VEO)

We continue to support United States interagency counter-VEO initiatives. These organizations remain a transnational threat with decentralized command and control, finance, and facilitation networks spreading from conflict zones into Europe. In particular, VEOs threaten to attack the

United States and European Allies, including through weapons of mass destruction. Extremists exploit instability in North Africa, Iraq, and Syria to husband resources in the face of coalition counter efforts. VEO inspired and organized attacks in Europe further complicate integration efforts, potentially isolating refugee and migrant communities and making some members of these populations more vulnerable to recruitment. Despite diminished capabilities, the Islamic State of Iraq and Syria and other VEOs desire to conduct external operations, requiring global vigilance to prevent a resurgence and preclude future attacks against the United States Homeland, Europe, and our Allies and Partners.

ISRAEL

Israel remains a critical United States partner facing complex and evolving security challenges. Iran continues to expand its regional influence, to provide lethal support to regional partners including Lebanese Hezbollah and Palestinian militant groups, and to develop options to threaten and attack Israel. Iran and its partners have made significant gains in asymmetric capabilities, including advanced ballistic missiles, cruise missiles, and armed unmanned aerial systems. Tehran remains committed to modernizing its military and continues to improve the range, lethality, and accuracy of its ballistic missile systems. However, Tehran's malign influence also presents opportunities as regional actors find common ground with Israel in the face of a common adversary. Recent bilateral agreements with the United Arab Emirates, Bahrain, Morocco, and Sudan represent notable progress in normalizing relations and improving the regional security environment.

In compliance with the 2020 Unified Command Plan, we continue close coordination within the Department of Defense to ensure an orderly and deliberate transfer of the operations, activities, and investments focused on Israel to USCENTCOM. Ongoing initiatives include a robust series of exercises, senior leader engagements with the Israeli Defense Forces (IDF), coordination with the IDF to maintain Israel's qualitative military edge over any military threats to Israel, and naval support to defend Israel against growing Iranian ballistic missile threats. This assistance demonstrates the United States' unwavering commitment to Israel, enhances regional stability in the Levant, and deters the Iranian ballistic missile threat. Ultimately, our focus on a seamless transition will support United States interests and assist in the defense of Israel.

USEUCOM OPERATIONS, ACTIVITIES, INVESTMENTS, AND OPPORTUNITIES

STRATEGY IMPLEMENTATION

Along with Allies and Partners, USEUCOM confronts challenges by competing to secure long-term sustainable advantage, deterring potential aggressors, and preparing to respond decisively. As the coordinating authority for the Russia Problem Set, USEUCOM advises the Secretary of Defense on force structure, resources, and synchronization of Department of Defense activities to deter Russia and counter its global malign activities. We work tirelessly with Allies, Partners, and the U.S. interagency to address the evolving challenges posed by our adversaries. Despite the COVID–19 global pandemic, we display vigilance in this complex security environment, and—should deterrence fail—should deterrence fail—remain ready to respond with lethal and resilient force in all domains.

Congress provides critical support to the USEUCOM AOR through the European Deterrence Initiative (EDI). EDI enhances our theater posture to deter adversaries and compete in a contested logistics environment, while assuring Allies and Partners. Increases in forward-stationed and rotational forces strengthen our contact, blunt, and surge layer capabilities, providing us the ability to compete and win in a multi-domain crisis or conflict. EDI investments improve our response using more robust theater infrastructure and prepositioned stocks. Funding for exercises, training, and building partner capacity bolster the readiness and interoperability of U.S. and Alliance forces. Together, these advances enable our deterrence and defense efforts through rapid deployment and sustainment of forces. Support NATO's Deterrence and Defense of the Euro-Atlantic Area

USEUCOM's primary mission is to compete, deter, and respond to aggression with the full weight of the NATO Alliance. NATO continues adapting to meet the challenges and complexities of our dynamic security environment. Together, we continue improving our speed, posture, transparency, and alignment. Through new strategic concepts, establishing new commands, continuing investment in critical military capabilities, implementing enhanced readiness, and pursuing a robust array of operations, missions, and activities, we demonstrate our combined ability to deter and defend. The cohesion of these efforts has not waned during our collective response to the global pandemic.

In 2020, NATO released the Concept for the Deterrence and Defense of the Euro-Atlantic Area (DDA), NATO's first deterrence and defense concept since 1967. Nested with the 2019 NATO Military Strategy, this concept guides Alliance approaches towards threats from Russia and international terror groups. To support this effort, NATO bolstered deterrence efforts in the space and cyberspace domains by establishing a cyberspace operations center at the Supreme Headquarters Allied Powers Europe in Mons, Belgium and integrating its Space Center into Allied Air Command at Ramstein Air Base, Germany.

Two new commands, Joint Forces Command Norfolk and the Joint Support and Enabling Command, enhance Alliance adaptation to the dynamic geopolitical environment. These headquarters focus on transatlantic lines of communication and coordinating support functions, enabling the deployment and sustainment of NATO forces during crisis or conflict. The EU, NATO, and USEUCOM continue to sustain progress improving infrastructure and transit permissions facilitating the rapid movement of forces and logistic support across the Euro-Atlantic.

NATO nations continue to invest in critical military capabilities, contributing to common defense and supporting the Alliance. For the past six years, European NATO nations consistently increased defense expenditures and future projections remain positive despite the COVID–19 pandemic. NATO is increasing interoperable combat power through major acquisitions to include cyber capabilities across the Alliance; High Mobility Artillery Rocket System (HIMARS) long range fires capability in Romania; fourth and fifth-generation aircraft in Bulgaria, Italy, Netherlands, Norway, and Poland; along with embarking the United Kingdom's aircraft carrier, HMS Queen Elizabeth.

NATO's ability to compete and win through crisis and conflict continues to improve with implementation of the Readiness Action Plan and NATO Readiness Initiative. This effort provides an improved ready, responsive, and reinforced posture. Complementing the NATO Response Force, the Readiness Initiative provides additional ready forces able to respond rapidly to aggression by designating 30 battalions, 30 air squadrons, and 30 naval combat vessels for potential use in 30 days.

NATO members contribute to theater anti-submarine warfare operations and provide critical host nation support to forward-stationed U.S. Forces across the region. Allies and Partners contribute forces to ongoing NATO and United States-led coalition missions advancing our common interests in Afghanistan, Kosovo, Iraq, and

Syria. Furthermore, Allies and Partners underwrite infrastructure investments and defray costs of U.S. military construction through the NATO Security Investment Program. Additionally, we expect improvements by individual European nations and the EU to enhance military mobility, increasing their responsiveness and combat capability. The EU, in consultation with NATO, projects to invest 1.69 billion euros over the next 7 years for civilian and military dual-use transportation infrastructure improvements across the continent.

Our Allies responded in solidarity to alleviate suffering during the COVID–19 pandemic, providing airlift, field hospitals, medical expertise, ventilators, and other critical supplies. The Alliance established a NATO Pandemic Response Trust Fund to stockpile medical equipment and supplies necessary during the second COVID–19 wave in Europe. Multiple Allies received critical ventilators and medical supplies from this initiative in late 2020.

USEUCOM plans to demonstrate joint capabilities during the upcoming United States-led exercises DEFENDER–Europe and ASTRAL KNIGHT. These multi-domain exercises directly complement NATO-led exercises such as STEADFAST JUPITER that maintain maritime air defense, antisubmarine warfare, and maritime interdiction capabilities. Ongoing enhancements to multinational information sharing systems enable USEUCOM execution with NATO and non-NATO partners. Ultimately, military exercises with our Allies remain an integral part of demonstrating Alliance readiness, interoperability, and capability.

The participation of USEUCOM forces in NATO operations and activities demonstrates U.S. commitment to the Alliance. Our soldiers serve in Poland as part of NATO's enhanced Forward Presence mission in one of four battlegroups deterring Russian aggression in Poland and the Baltics. United States Air Forces in Europe support NATO Enhanced Air Policing missions, safeguarding the sovereignty of Allied airspace against Russian incursions. We plan to support Standing NATO Maritime Group Two in 2022 with U.S. naval capability to counter maritime challenges in the Atlantic, Mediterranean, and the Baltic Sea. Operation ATLANTIC SENTRY, conducted by United States Aegis destroyers based in Rota, Spain, and the Aegis Ashore system in Romania provides the foundation of NATO's ballistic missile defense capability.

We leverage Dynamic Force Employment (DFE) to demonstrate operational unpredictability to adversaries, improve deterrence, and support our Allies. Recent DFE operations include posturing USS Roosevelt to the High North, Bomber Task Force missions throughout the AOR, a combined arms battalion deployment for DEFENDER Europe 20, and an F–35 deployment to exercise with Allies. Additionally, USS Eisenhower Carrier Strike Group presence in European waters this spring is a tremendous message to Allies and Partners about our commitment to deter and a critically important interoperability and training opportunity. Each force presence and operation demonstrates our ability to generate significant combat power across the AOR, while improving posture and warfighting readiness. This operational flexibility enhances cross-combatant command coordination and resource sharing, allowing for seamless transition and handover across Unified Command Plan boundaries to quickly deploy forces for emerging requirements.

Rotational Army, Marine, and Special Operations Forces (SOF) maintain a presence in strategic locations across the theater. These forces work alongside Allies and Partners to deter aggression, counter malign activities, build host nation defense capability, and enhance interoperability. For example, in Eastern Europe a rotational armored brigade combat team and combat aviation brigade participate in Operation ATLANTIC RESOLVE to hone Alliance warfighting skills. Additionally, rotational Marine Forces in Norway reinforce NATO's Northern periphery while training in Arctic conditions with our Norwegian allies. Rotational forces are critical to our ability to deter Russia and assure Allies.

COUNTER RUSSIAN ACTIVITIES AND MALIGN INFLUENCE

Every day, USEUCOM and NATO compete to deter the increasingly capable military underwriting Russia's power and counter the malign behavior that guides efforts to enhance perceptions the Kremlin is a responsible actor. Aside from USEUCOM's own capabilities, weleverage our Allies and Partners and the unique attributes our U.S. interagency team brings to deterrence and defense.

As long as nuclear weapons exist, NATO must remain a nuclear Alliance. NATO's nuclear capability preserves peace, prevents coercion, deters aggression, and instills confidence in the transatlantic bond. The Alliance's strategic forces guarantee security and backstop United States operations in Europe. NATO continues to adapt its nuclear posture to ensure these capabilities remain credible, resilient, and adaptable. USEUCOM fully supports modernization and recapitalization of our nuclear

forces. Sustained Congressional funding for these programs demonstrates commitment to our operations and solidarity with NATO.

In the ground domain, we expect to establish a U.S. division-sized capability through the combination of forward-stationed forces, rotational forces, and Army Prepositioned Stocks (APS). APS equipment facilitates increased agility and lethality by enabling rapid integration of rotational combat units into operations. During Exercise DEFENDER–Europe 20, United States Army Europe and NATO Allies successfully exercised at the battalion and brigade levels, and we plan to assemble a divisional formation on NATO's Eastern flank in Exercise DEFENDER–Europe 24, the first since the end of the Cold War.

In the maritime domain, Carrier Strike Group and amphibious presence are key elements of a lethal and agile theater posture. U.S. Sixth Fleet provides maritime command and control capability across the USEUCOM AOR, while U.S. Second Fleet complements and contributes to reinforcing NATO's Western, Northern, and Southern flanks. Last fall, the guided missile destroyer USS *Roosevelt* completed a 50-day patrol in the High North where it joined five other nations in NATO's Allied Maritime Command-led anti-submarine warfare exercise DYNAMIC MONGOOSE 20. Additionally, United States and U.K. warships conducted exercises in the Barents Sea, the first of its kind since the mid-1980s. While Russia attempts to impose costs with increased out of area deployments not witnessed since the Cold War, the reality is our crews are gaining invaluable real-world operational experience, demonstrating operational flexibility, and developingtactical undersea warfare advances for the next generation of sailors. The $539 million EDI investments in wide area search systems, new sonobouy capabilities, and improved communications systems are enhancing our competitive advantage. This enables the U.S. and Allies to meet Strategic Competition objectives in the maritime environment and improve our overall maritime domain awareness.

In the air domain, we are improving our mix of fighter aircraft to enhance Integrated Air and Missile Defense (IAMD), support Allies' efforts to enhance their air defense systems, and increase long range strike capability for deterrence. For example, Exercise ASTRAL KNIGHT 20 integrated United States air and missile defense capabilities with the Polish Air Force. In Bomber Task Force missions, U.S. bombers launched from bases in the United States and Europe, fly vast distances across the AOR while integrating with NATO and partner nation forces. We seek to enhance current posture, complicate adversary decision-making and impose costs while assuring our NATO Allies via Agile Combat Employment. Agile operations supported by Combined Joint All Domain Command and Control, and domain awareness capabilities with improved communications infrastructure, demonstrate a credible combat deterrence force network from potential airfields across the continent. This expansion of European contingency air operation and deployable air base sets enhances the survivability of our forces.

We remain laser focused in space, a domain whose importance to USEUCOM, NATO, and the globe cannot be overstated. Leveraging U.S. Space Command capabilities, we ensure our ability to plan and execute multi-domain operations. Additionally, we work with the U.S. Space Force, allies, and partners to further integrate space capabilities into joint and combined operations and activities.

In the cyber domain, USEUCOM's Joint Cyber Center coordinates with Joint Forces Headquarters Cyber and United States Cyber Command to counter Russian malign cyber activities and enhance our Allied and Partner capabilities. Recognizing the worldwide cyber capabilities of China, Iran, and North Korea, we work with other combatant commands and interagency partners to enhance global cyber defenses and our ability to impose costs on malicious adversary behavior. In the information environment, the Russian Influence Group (RIG) provides a key platform for competing with Russia. We co-chair this effort with United States Department of State's Bureau of European and Eurasian Affairs. Congressional funding for these unique cybersecurity and hybrid warfare programs (i.e. electronic warfare, special operations, and information domain operations), particularly through the State Department's Countering Russian Influence Fund—Foreign Military Financing (CRIF–FMF), enables the RIG to challenge adversary narratives and disinformation. Congressional funding for these unique information operations enables USEUCOM to challenge adversary narratives and disinformation.

Our Special Operations forces work with European Allies and Partners to build capacity, counter malign activity, and improve resilience. These unique capabilities enable USEUCOM to identify, attribute, and counter Russian malign influence. Furthermore, our Special Operations personnel provide invaluable contributions in sensing the operational environment, enhancing our ability to deter through enhanced indications and warnings.

Along Russia's border, key United States partners see a brighter future to the West and resist Moscow's efforts to hold them in the Russian sphere of influence. Ukraine seeks a closer partnership with the United States despite an ongoing Kremlin-sponsored malign influence campaign and violence by Russian supported forces in the Donbas region. The United States supports the Ukrainian Armed Forces through mentorship and advice from the Joint Multinational Training Group-Ukraine and with military and civilian advisors embedded across Ukraine's defense sector. With Ukraine a recognized operational partner to NATO, Allies and Partners also assist Ukraine's defense efforts, including the U.K.'s Operation Orbital and Canada's Operation Unifier. The United States, U.K., Canada, Denmark, Lithuania, Poland, and Sweden comprise the Multinational Joint Commission, which coordinates Allied and Partner FMF and USAI security cooperation funding. This funding, along with the Joint Military Training Group-Ukraine effort, help build Ukrainian military capability, competence, and interoperability. Continued USAI and FMF funding enables Ukraine to defend its sovereignty against well-armed Russian-backed forces. Department of State and Department of Defense continue working closely on resource coordination.

As part of a whole-of-government approach, our Joint Interagency Counter Trafficking Center supports interagency efforts to combat Russian malign activities, primarily by assisting federal law enforcement activities. This initiative provides USEUCOM with additional areas for competition. Through these partnerships, USEUCOM leverages a range of interagency driven effects including criminal investigations and convictions, seizures, sanctions, and designations.

Our approach in competition considers escalation management and control to maximize deterrence and defense. In conjunction with this emphasis, we make extensive use of authorized military-to-military channels with Russia to safely deconflict activities, when necessary, and maintain strategic stability.

ADVANCE AND STRENGTHEN STRATEGIC RELATIONSHIPS

Our strong bilateral and multilateral ties with European Allies and Partners enable advancement of our shared interests. Our military-to-military relationships across the Euro-Atlantic area remain strong, signaling the resilience of our collective defense.

Turkey remains a key United States and NATO Ally. We recognize Turkey's leadership role as a strategic NATO ally. Turkey hosts United States servicemembers conducting a wide array of NATO, bilateral, and unilateral missions including radar and tanker support to ongoing operations. Additionally, Turkey contributes forces to NATO missions in Afghanistan, Kosovo, and Standing NATO Maritime Group 2 in the Mediterranean Sea. In 2020, Turkey supported a United States Bomber Task Force with tanker and fighter assets.

In the South Caucasus, Georgia remains a steadfast partner and contributor to global security. Georgia's commitment of approximately 860 soldiers to the Resolute Support Mission, the largest non-NATO contributor to NATO's Afghanistan mission, indicates the enduring strength of our strategic partnership. We assist Georgian forces in preparing for this mission through the Georgia Deployment Program. Georgia hosted NOBLE PARTNER 20—a Georgian Defense Force and United States Army Europe exercise—to entrance Georgian, regional partner, and United States force readiness and interoperability in a realistic, multinational training environment. We support Georgia's efforts to generate and sustain capable defense forces through the Georgia Defense Readiness Program, which enables Georgia to defend its sovereignty and territorial integrity.

In the Arctic, changing environmental conditions present new opportunities for exploration, trade, and interaction. USEUCOM supports whole-of-government efforts to preserve the region, address shared challenges with other Arctic nations, and secure United States interests. We leverage close relations with European Arctic nations and our coordination with USNORTHCOM to build awareness while strengthening the call for open and non-invasive impacts in the region. These bilateral and multilateral strategic relationships enhance Alliance efforts to deter Russian aggression and advance shared interests.

We strengthen our strategic relationships through security cooperation initiatives. U.S. National Guard forces maintain vibrant relationships and unique access with Allies and Partners through the State Partnership Program (SPP). With more than 500 engagements through 22 active programs annually, the SPP cultivates regional expertise and strengthens personal relationships to improve readiness and alignment across the AOR. Programs such as the Black Sea Maritime Initiative and enhancing Baltic IAMD represent potent, regionally-focused components, of a resilient theater posture.

ENABLE UNITED STATES GLOBAL OPERATIONS

Europe and the United States remain the foundation for upholding a free and open international order. Our unique geographic location enables global operations, including United States interagency and multinational operations, through synchronization and agreements for access, basing, and overflight permissions within Europe. We work within the whole-of-government approach to maintain these permissions under bilateral agreements and to resist Russian and Chinese strategic investments. Absent these agreements, the United States could not meet treaty obligations or effectively protect vital national interests. The shared values, trust, civilian leadership of the military, and longstanding relationships we have in Europe enable the United States to generate coalitions for worldwide operations in support of shared national interests.

Last year, Allies and Partners proved essential in our efforts to deter Iranian aggression. European support enabled the rapid posture shift of United States forces in response to potential contingencies in the Levant. Key partners provided indispensable access, basing, and overflight permissions enhancing our protection of American citizens and diplomats. This highlights how allies and partners enable U.S. global operations that preserve and defend our national interests.

CONCLUSION

Maintaining a capable United States presence in Europe strengthens our national security by encouraging peace, unity, and cohesion between Europe's individual nations. Competitors, notably Russia and China, present formidable, enduring challenges to preserving a Europe that is free and peaceful. United States servicemembers in Europe continue to generate global peace alongside our Allies and Partners in the face of these obstacles. Our strategy addresses the dynamic security environment by ensuring we effectively compete for long-term sustainable advantage, deter attacks from potential aggressors, and prepare our Allies and Partners to respond decisively.

We appreciate Congressional interest in these challenges and your continued pledge to meet them through engagement, funding, and authorities; particularly your efforts to support the European Deterrence Initiative and International Security Cooperation Programs. These authorities enhance U.S. and alliance readiness and posture to respond in crisis or conflict. We sit in a strategically significant part of the world and the dedicated men and women of the command continually remember the trust our Nation places in us. Together with the soldiers, sailors, airmen, marines, coast guardsmen, guardians, and civilians of USEUCOM, your support demonstrates our Nation's continued commitment to defend the Homeland forward and preserve peace for the one billion people living in the Euro-Atlantic region.

Chairman REED. Thank you very much, General Wolters.

Now, let me recognize General Lyons.

STATEMENT OF GENERAL STEPHEN R. LYONS, USA, COMMANDER, UNITED STATES TRANSPORTATION COMMAND

General LYONS. Chairman, can you hear me okay?

Chairman REED. Great. Yes, sir.

General LYONS. Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee, it is my distinct pleasure, once again, to represent the members of the United States Transportation Command that are operating around the globe every day, 24 hours a day, 7 days a week.

I have the privilege today to be joined by our new senior enlisted leader, Fleet Master Sergeant Myrick, and it is great to have him onboard.

Let me just say again that our enduring purpose at TRANSCOM is to project and sustain military forces globally at our time and place of choosing. Providing our national leadership with the strategic comparative advantage and a wide range of options to enable the advancement of U.S. national interests, assure our allies and partners, and if necessary, respond with a decisive force to win.

Given the unprecedented challenges amid the COVID–19 global pandemic, I could not be more proud of the men and women of TRANSCOM, who have continued their impressive support to the joint force and support to whole-of-government efforts to help American citizens at home.

I would particularly like to highlight our air component's rapid fielding capability to move highly infectious patients, which was nation prior to the pandemic.

I appreciate the Committee's continued support on important global mobility issues, including sealift recapitalization, aerial refueling, defense personal property, as well as your acknowledgment of the future challenges and logistics operations under all domain persistent attack.

Today, I am absolutely honored to join General Tod Wolters and pleased to play a supporting role in his wide-ranging European defense initiatives. Thank you for your leadership and support for our impressive TRANSCOM teammates, and I look forward to your questions.

[The prepared statement of General Lyons follows:]

PREPARED STATEMENT BY GENERAL STEPHEN R. LYONS

STRATEGIC ENVIRONMENT

The Interim National Security Strategic Guidance acknowledges an increasingly complex global security environment, characterized by overt challenges to the free and open international order and the reemergence of long term strategic competition between nations. These changes require a clear eyed appraisal of future threats, the changing character of warfare, and how the Department of Defense (DOD) will retain the ability to project forces globally to advance security interests and respond decisively to win if necessary.

DELIVERING FOR OUR NATION

TRANSCOM's enduring purpose is to project and sustain military forces anywhere on the globe at the time and place of our Nation's choosing. Our ability to rapidly move forces transoceanic distances is a strategic comparative advantage, providing a wide range of options in support of the National Defense Strategy (NDS) while creating multiple dilemmas for our adversaries. As 1 of 11 Combatant Commands, TRANSCOM is responsible for operating the Defense Transportation System and integrating the Joint Deployment and Distribution Enterprise (JDDE). Our Unified Command Plan tasks are executed through three assigned component commands (U.S. Army's Military Surface Deployment and Distribution Command, U.S. Navy's Military Sealift Command, and U.S. Air Force's Air Mobility Command) and one major subordinate command (Joint Enabling Capabilities Command). Our key mobility mission areas include airlift, air refueling, aeromedical evacuation, sealift, and domestic rail and motor freight, all of which are enabled by a global posture that provides the U.S. with positional, temporal, and psychological advantage to respond across the operational spectrum.

The DOD's ability to project military forces is inextricably linked to commercial industry, which provides critical transportation capacity as well as global networks to meet day-to-day and wartime requirements. TRANSCOM manages several emergency preparedness programs that call on industry to specifically support wartime requirements. They include the Civil Reserve Air Fleet (CRAF), Voluntary Intermodal Sealift Agreement (VISA), Strategic Seaport Program, Strategic Corridor Rail Network and the Strategic Highway Network. On behalf of the Department, TRANSCOM spends approximately 7 billion dollars with industry partners each year in transportation services to execute DOD mission requirements.

YEAR IN REVIEW

The COVID–19 pandemic posed significant challenges to TRANSCOM's continual efforts to project and sustain the joint force. At the beginning of last year, TRANSCOM rapidly deployed a Brigade Combat Team of the 82d Airborne Division

to United States Central Command, delivering 800 soldiers within 18 hours of notification to deter Iranian aggression. In total, the Brigade of 3,000 soldiers closed in under five days. This no-notice deployment underscored the impressive capability of the Global Mobility Enterprise. In the year that ensued, TRANSCOM transported 33 brigade-sized units overseas in support of all six geographic combatant commands. TRANSCOM operated from all seven continents, delivering over 95 million gallons of fuel during air-to-air refueling operations resupplying nearly 60 thousand aircraft and directly supporting 38 Bomber Task Force missions. On short notice, our Joint Enabling Capabilities Command (JECC) established a JTF command post in support of Special Operations Command—Africa to reposture forces from Somalia. Additionally, TRANSCOM transported over 790,000 passengers, 315,000 tons of cargo and 24.2 million barrels of DOD petroleum products, all while complying with COVID–19 preventative measures, testing and restrictions.

TRANSCOM aeromedically evacuated 6,324 patients (71 having sustained battle injuries), 350 of whom were COVID-positive. Given the emergence of the COVID–19 pandemic, we are grateful for the exceptional efforts of the USAF, industry, and academia to deliver a material solution within 90 days to safely airlift highly infectious patients. I am extremely proud of the resilience and ingenuity of the aeromedical evacuation enterprise to meet these challenges this past year.

In support of the whole-of-government response to COVID–19, TRANSCOM repatriated 3,915 American citizens stranded worldwide and facilitated movement of over 2,000 ventilators, 4.4 million COVID test kits, 150 million needles and syringes, and continues to support vaccine distribution to DOD beneficiaries. TRANSCOM collaborated with the Defense Advanced Research Project Agency, USAF, and United Airlines to perform aerosol testing onboard commercial passenger airframes to determine the transmission risk of COVID–19 between passengers. The findings revealed a 99.7 percent reduction in aerosolized pathogens through aircraft ventilation and HEPA filtration systems thereby informing decisions on cabin occupancy, seating assignments, and contact-tracing procedures for the Patriot Express contracted rotator flights.

Throughout the pandemic, TRANSCOM frequently consulted with industry partners to assess their viability to support National Defense requirements. Cargo partners within the surface, sealift, and airlift industries appear to be on the path to recovery. However, the airline passenger industry will likely take many years to recover given 60 percent reduction in volume, resulting in over $30 billion in lost revenue, as well as the divestment or parking of over 20 percent of aircraft inventories.

TRANSCOM WARFIGHTING FRAMEWORK

The success of DOD's power projection capability is contingent on three critical elements of TRANSCOM's organizational warfighting framework: Global Mobility Posture; Global Transport Capacity; and Global Command, Control, and Integration.

Global Mobility Posture

Global Mobility Posture is the foundation of power projection, enabled by a robust network of allies and partners, which includes access to global networks maintained by industry to support our Nation's ability to mobilize and deploy. Diplomatic alignment with our allies and partners enables access, basing, and overflight for mobility forces, critically important to the rapid deployment of personnel and equipment across the globe. Our robust and resilient network also provides the U.S. positional advantage to rapidly advance our national security interests, deter adversaries, and when necessary, win decisively.

On the domestic front, TRANSCOM works closely with the U.S. Department of Transportation on numerous domestic transportation programs to include the administration of three National Defense Programs: Highways, Railroads, and Ports for National Defense. In order to ensure national security needs are recognized in civil highway policies and programs, TRANSCOM is working with the Federal Highway Administration to encourage investment to enhance infrastructure critical to national security.

Global Transport Capacity

Our Global Transport Capacity includes conveyances and platforms to move troops, supplies, fuel, and equipment through global transportation networks. These include rail, motor transport, sealift, air refueling, and airlift. More than 60 percent of TRANSCOM's organic transport capacity resides in the Reserve Components, underscoring our reliance on the Total Force.

Mobility force sizing and shaping are informed by Mobility Capability Requirements Studies (MCRS). TRANSCOM is conducting the Fiscal Year 2020 NDAA-directed MCRS–20 to assess airlift force sufficiency, as well as air refueling and sealift

capacities to meet NDS missions. In addition, we are conducting a concurrent study to determine requirements for U.S. flagged fuel tanker vessel capacity and to assess the necessity of assured access provided by the Fiscal Year 2021 NDAA-authorized Tanker Security Fleet. We will submit reports on these studies by June 2021.

Transport Capacity Modernization Priorities

Sealift

We are pleased with the progress over the past year working with OSD, USN, and the Maritime Administration (MARAD) on codifying a viable strategy to recapitalize the Department's sealift fleet. 33 of 50 USN Roll-On/Roll-Off sealift ships are forecasted to retire in the next 10 years. DOD, USN, and TRANSCOM endorse a strategy to acquire used sealift vessels from the open market. The Fiscal Year 2021 NDAA, authorizes the procurement of the first four used ships, decoupled from a requirement to build new ships. We are working with MARAD on selecting a Vessel Acquisition Manager and plan to procure the first used vessel in CY 2021.

Aerial Refueling

TRANSCOM is aligned with the USAF on the way ahead for the air refueling portfolio. The fleet is critical to rapid global mobility and the lifeblood of the joint force's ability to deploy and employ the immediate and surge forces across all NDS mission areas. The current air refueling fleet is comprised of the aging KC–135 and KC–10 aircraft, and the new KC–46. We support the USAF's plan to adjust its force structure in order to meet day-to-day and crisis requirements.

Global Command, Control, and Integration

Global Command, Control, and Global Integration remains central to our ability to align scarce mobility resources consistent with the highest strategic priorities. Enabled by a portfolio of information technology systems, our ability to control mobility forces is contingent on secure networks and continuous modernization efforts to retain the competitive edge against our adversaries in the cyber domain.

TRANSCOM is pursuing several initiatives in the area of cyber resiliency and digital modernization to mitigate the rapidly evolving threat in the cyber-contested environment. Mitigation initiatives include increasing cyber hygiene to harden our terrain and decrease adversary attack vectors, modernizing and optimizing our IT portfolio by taking advantage of technical advancements such as cloud services, and investing in critical data encryption to create trusted transactions. Additionally, we partnered with the U.S. Cyber Command to implement a DOD proof of principle using, "Zero Trust" on our network environment to further bolster defenses from capable adversaries. We also continue to collaborate with our commercial transportation providers, sharing information as able and facilitating the performance of annual cybersecurity self-assessments based on National Institute of Standards and Technology guidelines.

DEFENSE PERSONAL PROPERTY PROGRAM (DP3) REFORM

TRANSCOM, on behalf of the Department, is leading a number of efforts to improve the relocation experience for DOD and Coast Guard personnel and their families. Together with the Services, TRANSCOM implemented COVID–19 protection protocols to keep families safe while relocating; enacted common-sense rule changes to address customer priorities 'at the curb,' and published a strategic plan to guide our collective action in the years ahead. TRANSCOM is currently addressing the issues the U.S. Government Accountability Office (GAO) highlighted regarding the award of the Global Household Goods Contract (GHC), and will re-award the contract no earlier than September 2021. While TRANSCOM has charted a clear path to restructure its relationship with the moving industry, we are also taking initial steps to restructure our relationship with storage providers.

At the close of 2020, TRANSCOM recorded a 96 percent customer satisfaction rate—five points above 2018's score and above the Department's target of 95 percent. While I am pleased with this initial progress, there is still much work to do and it is still early in our journey to reform the $2.5 billion Defense Personal Property Program. This initial progress is the product of incredible work from DOD personnel around the globe, from an active network of military family volunteers, and from many of our moving and storage providers. However, the foundation of this progress is leadership. I believe the program's multi-billion dollar value, consequential impact on servicemembers and their families, and continual interface with Congress, industry, and the Services warrant sustained executive leadership to ensure the success of the reform effort and deliver the quality and accountability military families deserve.

SPACE MOBILITY

As we look to the future, TRANSCOM has established Cooperative Research and Development Agreements with leaders in the space industry to explore the delivery of cargo and personnel via space anywhere on the globe in less than an hour. While rocket cargo will not replace current mobility capacity, it has the potential to offer unique and disruptive capability in the areas of rapid force deployment and humanitarian assistance and disaster relief. We look forward to continued development of space mobility and logistics in the coming year.

CONCLUSION

TRANSCOM provides the DOD the ability to project and sustain military forces at a time and place of the Nation's choosing; a strategic comparative advantage that allows us to achieve national security interests. By maintaining favorable global posture, sufficient transportation capacity, and the ability to command and control global mobility operations, DOD retains the ability to project immediate and surge forces required to compete, deter, respond, and win in order to meet U.S. strategic objectives. We continue to evolve and adapt to a rapidly changing security environment and address cyber security challenges. I thank Congress for the staunch and continued support of the U.S. Transportation Command and the Joint Deployment and Distribution Enterprise as together we work to defend the Nation and advance American interests.

Underwritten by our dedicated soldiers, sailors, marines, airmen, coast guardsmen, civilians, and commercial partners performing TRANSCOM's mission, I am confident in our ability to deliver, and am proud to stand with them in commitment to our Nation's defense.

Together, We Deliver!

Chairman REED. Thank you very much, General Lyons.

Before we begin the questioning, let me just remind my colleagues, due to the nature of the hybrid format we are using today, we will handle the order of questions by seniority, alternating sides until we have gone through everyone, and if there is anyone we have missed we will go back.

We will use the standard 5-minute rounds. I am going to ask my colleagues to keep a watch on the clock.

Finally, if you aren't engaged, please keep your microphones muted. Thank you very, very much.

General Wolters, today, it was reported that Secretary Austin announced an additional 500 troops going into Europe, which seems to be a reversal of the Trump administration's proposals to reduce forces in Europe.

Can you comment on this increase in forces.

General WOLTERS. I can, Chairman.

We are very excited. They are part of the previous tranche of forces that were nest underneath DP2, Decision Program 2, and its focus is to deliver a multi-domain task force in a joint-theater spy organization to Wiesbaden, Germany, and that will be approximately 500 soldiers. That will improve our ability, in all domains, to bring fires from the surface-to-surface dimension to increase our ability to deter.

Chairman REED. From your first review of the proposed budget, do you feel that you will have adequate resources to meet all of your obligations?

General WOLTERS. We do, Chairman, but as you well know, we are always interested in working to increase our competitive advantage. But we do have the adequate resources.

Chairman REED. Thank you very much.

General Lyons, as I indicated in my opening remarks, we have asked for the mobility requirement study. It is still in the works.

When will we see that report and can you give us some initial reactions to date as to what your prognostication is about the report.

General LYONS. Chairman, let me first say thank you for your continued advocating and support, as you have directed multiple Mobility Capabilities and Requirements Study. The 2020 study is due to be delivered in June, mid-June.

I can tell you, you know, as a task for the study, it was to assess the program force. We are looking at that in the context of our current demands in terms of war plans, but also in future concepts. As we look at that, there are some areas we see will require some work in some areas of elevated risk.

I would just ask for your continued support for example, for sealift modernization, which this Committee has been very supportive in our efforts to do so, thus far.

Without getting too far ahead of the analysis, because I want the analysis to drive the conclusions, that report is due to you soon, sir.

Chairman REED. Thank you, sir.

One of the issues, and it represents the transition from benign areas of operations, particularly for logistics to contested operations, is the problem of potential attrition during wartime.

Do you feel that that will be adequately addressed in the study?

General LYONS. Senator, we certainly are looking at contested environments. There is no question that we can't assume that we can deploy when we want, and how we want, where we want, perhaps as we have been able to do in the last several decades.

But as we look to attrition, per se, in terms of force-sizing, as a departmental policy, we don't include attrition in the force-sizing construct, but we do understand the implications for contested environments on our ability to support a particular combatant command (COCOM) or the Department's priorities, and so, we will see that in elevated risk.

I would just offer, though, that and often is the case, the solution may not be in more capacity, in mobility capacity, but may come in better integration of our warfighting functions, like protection, fires, intelligence, sustainment, et cetera.

So, as we look to the future, we know we have to move in that direction, and I am very pleased to see the chairman and the Department, you know, identifying that as a major line of effort in our joint warfighting concept.

Chairman REED. Well, thank you.

General Wolters and also General Lyons, this goes to a point of our effective connectivity that every part of the operation can talk uninterruptedly and hopefully encrypted.

Is that something that you and General Nakasone are working on with others, General Wolters?

General WOLTERS. We are, Chairman.

One of our key pillars in our overall campaign to effectively win in competition is to continually improve our command and control and communications, and to do so in all domains. We are really pleased to report that with General Nakasone being the sole military commander in United States military cyber domain. The direction and guidance has been much clearer over the course of the last 24 months and we have been able to make improvements in Europe, with respect to our ability to command and control.

Chairman REED. Thank you.

General Lyons, quick comments, please.

General LYONS. Yes, sir. I would just reenforce cyber resiliency continues to remain a top priority for the command.

General Nakasone, the National Security Agency (NSA), Cyber Command (CYBERCOM) has been extraordinarily supportive; in fact, we are his test bed for Zero Trust principles, and we have taken many other initiatives to buy down cyber risk.

Chairman REED. Thank you very much, sir.

Senator Inhofe, please.

Senator INHOFE. Thank you, Mr. Chairman.

General Wolters, I would just like to ask, I have three questions that I am going to try to get around in this short period of time.

In the book, and we have all been talking about this now, ever since 2018 when this came out, the recommendation said it is going to take 3 to 5 percent real annual defense spending growth to implement the NDS and I really believe that is true.

Now, the current budget doesn't even keep even, keep up with inflation. Now, this is kind of an "if" question, General Wolters. If the defense budget shrinks and the European Deterrence Initiative gets cut, what would be the impact to your efforts in Europe, just off the top, if that happens.

General WOLTERS. Senator, it would slow down our campaign momentum that we have been able to sustain for the last 4 years in improving our indications and warnings, our command and control, and our readiness.

Senator INHOFE. Yeah. Okay. Thank you very much.

Now, General Wolters, I also mentioned, you and I talked about this in my office, it is unfortunate, but a lot of people in this administration are talking about the F–35 and some don't think it is worth the resources that it is detracting from other areas.

I am so thankful that I have the memory of what happened back in, actually, it started out when I was in the House of Representatives, on The House Armed Services Committee, on the F–22. The F–22 and the F–35 are the only two vehicles out there in the fifth generation. So, the F–22 was the first one.

We started out with, the goal was 700 copies were going to come and they started whittling down. It started, actually, when I was still over in the House side, and it went down to, from 700 to, incrementally reduced to, ultimately, it got down to, what was it, 187 F–22s. We knew that was a mistake at that time, and the reason I bring that up is that right now we have Russia and China pursuing their own fifth generation programs like the J–20 and the Su-57.

How concerned are you about our great power competitors' fifth generation capabilities, and how important is the F–35 to deter these threats in Europe?

General WOLTERS. Senator, the F–35 is very important.

As I mentioned in my opening comments, our disposition, from the military perspective, is strong, yet challenged, and part of that challenge is the evolution of the Su-37, fifth-generation aircraft, on behalf of the Russians, and we, in the United States, need F–35s in Europe, which will begin to show up in the fall of 2021, to en-

sure that we have the competitive advantage necessary to protect our sovereign territory.

Senator INHOFE. All right. That is good.

During last year's posture hearing, General Lyons, you testified that the Air Force's divestment of the KC–135 and the KC–10 would put TRANSCOM below its minimum requirements, and that is in light of the fact that the KC–46 didn't come out the way we wanted it to, and yet, it took action from the National Defense Authorization Act (NDAA) from 2021 to reverse the number of those divestments to ensure that TRANSCOM has enough refueling capacity to meet the requirements.

Now, I would have to say, and you may want to elaborate on this maybe for the record, but I look at this and say, what is wrong with our requirements process when Congress has to step in to ensure they have enough tanker aircraft to stay the mission ready.

I mean, your observation was right, that it took us action to make sure that that happened in our Fiscal Year 2021 NDAA.

Does anything come to your mind as in terms of why it is necessary for us to do this and why this couldn't have been done before our action was necessary?

General LYONS. Well, Senator, first, I want to thank you for your support on the issue of aerial refuel, which is such a critical force element, and basically the lifeblood for the joint force, in terms of our weapon systems.

Last year, you asked the question, what was the implications operationally to delay the Boeing KC–46 delivery?

Based on the retirement profile, the war implications, and the Active Duty component to respond to day-to-day crisis, I am happy and pleased to report to you this year that we are in a much better position. We have a very good alignment between the Department, between Air Force, and TRANSCOM. The Air Force has stepped forward with interim capability with the KC–46.

We still have a long way to go, but I am very, very comfortable with where we are with the Air Force. The Air Force has really stepped into position.

Senator INHOFE. So, you think that that has been corrected?

General LYONS. I do, sir. It has been.

Senator INHOFE. All right. Thank you very much.

Mr. Chairman?

Chairman REED. Thank you very much, Senator Inhofe.

Senator Shaheen, please.

Senator SHAHEEN. Thank you.

Thank you to both of you, General Wolters and General Lyons, for your service and for being here this morning.

General Wolters, I specially appreciated our conversation yesterday, and one of the things you mentioned in your opening remarks that we discussed briefly, is the buildup of Russian forces on the border of Ukraine.

Do you have any view about what Russia is doing, are they preparing for potential offensive? Is this consistent with past Russian posturing? What are they doing?

General WOLTERS. Senator, we have categorized their actions into four separate categories and I would enjoy the opportunity at a different security environment to be able to address that.

But what I can say is, number one, there has been an inject of a very sizable ground domain force on behalf of the Russians, a notable Air Force injection, and a notable maritime force injection. It is of the size and scale and scope that is of great concern, and it mirrors the size and scope and scale of the infiltration of forces that occurred back in 2014.

So, we are remaining very, very vigilant, keeping as many options open as possible, and obviously very concerned.

Senator SHAHEEN. Thank you. I look forward to hearing your comments in the classified session.

As the administration considers the best way forward in Afghanistan, can you tell us what you think would be the most significant impact of the withdrawal of American troops by May 1 or shortly thereafter. How would that influence both, NATO's role and what we might expect on the ground in Afghanistan?

General WOLTERS. Senator, our number one concern at USEUCOM, and my number one concern with my NATO head at SACEUR is the force protection considerations for all of our U.S. servicemembers and all of our NATO servicemembers in whatever transaction that we engage in.

Senator SHAHEEN. Thank you. I would, again, urge NATO and everyone who is part of our mission, to include women at the negotiating table, because we know that has a positive impact on the stability of negotiations.

General Lyons, last spring, this is really to follow-up on Senator's Inhofe's comments about the KC–46, because last spring, you expressed real concerns about the retirement of legacy refueling tankers, due to the delays with the KC–46, and you had a brief exchange just know about that. But it sounds like you may begin to assign KC–46 air crews to operational missions as early that has summer.

So, what has changed and why do you feel like we should begin doing that as early that has summer?

General LYONS. Ma'am, a couple of things have changed since we talked about this last year. The first and probably most important is that Boeing acknowledged and agreed that they had the responsibility to fix the category (CAT) 1 deficiencies on the jet on the weapons system.

So, in that context, the Air Force has gone to work to deliver interim capability. It will be fully operational, but, again, certainly conduct missions. They have presented that capability over time, so that is important. Plus, with an additional plus-up of Reserve Guard augmentation in a slight adjustment in the retirement profile against the KC–10, I am comfortable that we are in a good position, based on the work the Air Force has done to support day-to-day and crisis operations today.

Senator SHAHEEN. Well, I think that is very good news. That is, obviously, welcomed news to all of the KC–46 crews, including those at the Pease National Guard Base, where we were the first recipients of the KC–46. But I want to ask you, because I understand there is an issue that I had not heard about with respect to the transportable gallery lavatory system; essentially, the bathrooms that make missions problematic.

Is this a new problem or have we known about this and what is the prospect to fix it?

General LYONS. Ma'am, on those kinds of issues, I don't want to get in front of the Air Force. I will defer the program manager.

There is a range of category deficiencies that are being worked by both, the Air Force and Boeing. I don't know enough to comment on that particular issue.

Senator SHAHEEN. Will it impact our ability to fly missions with the KR–46 as early as this summer as you are hoping?

General LYONS. I am not aware of any impact on initial capability release, but that doesn't mean that there aren't a wide range of deficiencies that still need to be remedied you know, by Boeing, before the jet is fully operational and capable.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Shaheen.

Senator Wicker, please.

Senator WICKER. Thank you very much, Mr. Chairman.

General Wolters, in a question from Senator Shaheen about Russia, you mentioned they were increasing their ground, air, and maritime efforts. In light of that, do you continue to support the additional two destroyers based in Rota?

General WOLTERS. I do, Senator.

As you well know for the last 12 months, the activity of the four destroyers that we have had access to, have been pivotal in securing deterrence.

We also see increased maritime activity in the Arctic, in the Barents, to the central portion of the Atlantic Ocean, and the need for two additional destroyers in the area of indications and warnings and command and control, as well as, the lethality that they bring is what we need to continue to work for to have that competitive edge to ensure that we can continue to deter effectively.

Senator WICKER. Let's expand on the Arctic.

Now, China is an issue for us there, is it not, and can you elaborate on that.

General WOLTERS. They are, Senator. Their investments in ports is significant.

Senator WICKER. Do we have the capabilities we need to deter Russia and China in the Arctic presently?

General WOLTERS. We do, and they are adequate, but our growth isn't matching theirs.

Senator WICKER. Yeah, I heard you say adequate, in response to Senator Inhofe's question, also, and you mentioned an answer to a question that the recent budget numbers will slow down readiness.

Let me just emphasize that we have in front of us the leading expert in this area of the world and that sort of merely adequate response and slow-down readiness is of concern, I think, to members on both sides of the dais here.

One more thing. General Wolters, with regard to the Coast Guard, they have a statutory mission, but, also, they are very vital in assisting you with our national defense requirements; is that correct?

General WOLTERS. It is, Senator. As you know, the Coast Guard actually recently produced an Arctic strategy.

I will tell you as the commander of USEUCOM, there were many identifications in that strategy that were very, very helpful for future security in the Arctic region.

Senator WICKER. Thank you very much.

Let's, then, shift, General Lyons, to military sealift and let you elaborate on an answer that you gave to Senator Reed. The GAO reported last year that, "the U.S. flag, fleet shipyards and workforce have been in decline and the industry, as a whole, faces significant economic sustainability challenges."

Do you agree with this assessment and can you discuss how a diminished maritime industry impacts sealift during both, peacetime and conflict.

General LYONS. Senator, thanks for the question, and more importantly, thanks for being a strong advocate for sealift modernization and the acknowledgment of how important sealift is to deliver decisive force.

I think you know that 33 of 50 of our roll-on/roll-off ships will reach end of life over the next 10 years. Industrial base is absolutely of critical importance and, you know, we have advocated for an acquired-use strategy, largely based on cost. There is a significant difference in cost differential, but there is also work required in conversion. So, we work closely with the Navy. I think the Navy has got the best pulse on the industrial base with regard to sealift.

Senator WICKER. How helpful in your judgment, are the maritime security programs, stipends, and cargo-preference laws in supporting the maritime industry?

General LYONS. Senator, I think they are critically important. We must maintain a U.S. flag that is reliable and accessible to support the Defense Department needs. So, those are critical programs.

Senator WICKER. Thank you, gentlemen.

Mr. Chair, I would yield back 23 seconds.

Chairman REED. Thank you very much, Senator Wicker. We will put that on your account.

Now, via Webex, Senator Gillibrand.

Senator GILLIBRAND. For General Wolters, I want to just continue along the questions that Senator Wicker and Senator Shaheen asked about Ukraine.

The United States began providing lethal aid to Ukraine based on a 2014 authorization, The Support for Sovereignty, Integrity, Democracy, Economic Stability of Ukraine Act of 2014. Do you believe that this lethal aid has helped Ukraine to deter Russian aggression and what changes would you make to our current lethal and non-lethal assistance to Ukraine to help further a deterrence?

General WOLTERS. Senator, I think those contributions have been very helpful. The other very notable change that has occurred in the environment was the establishment of the Multinational Joint Commission, which provided us an architecture to be able to take an all-domain, whole-of-government approach to some of the challenge that has occurred in Ukraine. From that, we were able to establish the Joint Military Training Group Ukraine that has afforded the Nations that are signators to the Multinational Joint Commission, and many NATO allies and partners, to contribute

military training teams to episodically enter Ukraine and help train some of their forces to better defend their sovereign soil.

Senator GILLIBRAND. Thank you.

In the EUCOM domain and in many other places, we have seen over the last decade, an increase in the strength and engagement with illiberal political forces, including the rise of totalitarianism, authoritarians, increasing popularity of far-right political groups and leaders, and we have seen significant democratic backsliding.

How do you see these forces affecting our efforts to effectively deter Russia, strengthen our allies, and protect the values we have shared with our European allies for decades?

General WOLTERS. They are an impact, Senator, and think we have to take a whole-of-government, whole-of-alliance, whole-of-nation approach, and I think inside of NATO, we have done a better job with that. Number one, we are responsible, given our support to democratic values to tell the truth and we continue to profess the truth in the information environment and we are gaining campaign momentum with nations that want to be part of the alliance of NATO.

Senator GILLIBRAND. For example?

General WOLTERS. Precisely what is going on today in Ukraine with President Zelensky's open comments with respect to his desire to look westward and assist towards NATO.

Senator GILLIBRAND. Thank you.

General Lyons, I want to ask a question about COVID. In the early stages of the pandemic, some of the early problems were faced were supply chain issues, including getting personal protective equipment (PPE) distribution, early-stage vaccine distribution.

Based off your testimony, TRANSCOM has been instrumental in ensuring vaccine distribution was able to ramp-up through a functioning supply chain. As we continue vaccine distribution, what are some lessons learned that we can apply to, improve our success to prepare for another pandemic or other world emergency?

General LYONS. Ma'am, thanks for the question.

I have to say a large portion of the credit goes to General Perna and the lead at Warp Speed and the Federal Government effort. They worked through most of those issues. We were a supporting effort where they needed additional support.

I think there is a task force now, looking from a national security perspective, that supply chain and implications to national security and national defense, and I think that is a worthy effort just to understand the source of many of the critical manufacturing and supplies and where they come from and where that supply chain might be vulnerable.

Senator GILLIBRAND. Thank you.

Another question on supply chain. TRANSCOM is the largest user of oil for the Federal Government and President Biden's interim national strategic guidance lists the climate crisis as one of our primary national security threats. From increased major weather events to migration crisis, due to climate change, fossil fuels should be at the front of our minds for strategic planning.

What is TRANSCOM doing to mitigate these massive expenditures of fossil fuels?

General LYONS. Well, ma'am, I first stated, to your point, I think the Department clearly understands, we all understand that climate is a driver of instability. Where there is instability, there is potential implications for the Department of Defense and for TRANSCOM.

The Secretary has been clear. He is focused on climate as a priority and has stood up, a lead in that area. I think most of the efforts, to date, you know, you can appreciate the level at the installation, base level.

I think in the operational energy realm, the sheer consumption of liquid energy is going to be a challenge for us, but it is something that we are going to have to take a look at.

Senator GILLIBRAND. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Gillibrand.

Now, let me recognize Senator Fischer, via Webex.

Senator FISCHER. Thank you, Mr. Chairman.

Thank you, gentlemen, for being here today.

General Wolters, as you know, the 55th Wing is headquartered in my state and the [inaudible] 135s and their crews provide a valuable contribution to EUCOM's mission from their base in Mildenhall. These planes provide a unique capability, but I am concerned that our overall demand for intelligence, surveillance, and reconnaissance (ISR) is greater than the capability that we currently possess.

For that reason, I believe that it is essential that we not only continue investing in new ISR networks, but also that we maintain and modernize the high-end capabilities that we currently have in the RC–135 fleet.

In light of that, how does the RC–135 fit into your current need for ISR, and if you could tell me overall what the percentage of EUCOM's ISR requirements are currently being met.

General LYONS. Senator, the RC–135 is pivotal in our campaign with respect to indications and warnings and what it does from an intelligence, surveillance, and reconnaissance standpoint to see the environment. As you pointed out, and we discussed yesterday, I think the concern we all have is when legacy systems go out and new systems come onboard, it has the potential to create a vacuum that the enemy can exploit. We have to be rock-solid in that transition to ensure that we have the requisite ISR to be successful.

At USEUCOM, we have been very, very pleased over the course of the last several years with the improvement of the percentage of ISR that we have received. A lot of that is due to this Committee and the support through the European Defense Initiative (EDI).

Right now, we are hovering at about 33 to 35 percent of our requirements being supported and compared to my brothers and sisters in other geographical COCOMs, we are in good shape.

Senator FISCHER. Okay. Thank you.

General Lyons, in prior testimony, you said, "we expect power projection will be contested in all domains."

Your mission is uniquely challenging to perform in contested spaces. Given that fact, what steps are you taking to make TRANSCOM more resilient to these threats?

General LYONS. Senator, thanks for the question.

We fully acknowledge that the way we deployed in the past isn't the way that we will deploy and sustain the force in the future, and that we must be prepared to operate under all domain persistent attack. In that realm, we have looked at a wide range, as we look at the global mobility enterprise, we look at our potential vulnerabilities and how to buy down that risk.

One such area, of course, is cyber, but there is a full range of areas, and to my point earlier about the integration of protection and fires and intelligence with the sustainment warfighting function will be critical as we, you know, understand that the Homeland is no longer a sanctuary.

I have been very, very pleased with joint staff work on the joint warfighting concept. That includes an entire line of effort to elevate the importance of joint contested, a joint concept on contested logistics.

Senator FISCHER. Do you think it is vital that we a start to rethink or continue to rethink some of the fundamentals that are out there on how we operate logistics support?

General LYONS. Senator, I believe that is——

Senator FISCHER. Really, if you could continue on with that train on examining the existing platforms and methods that we are currently using and looking at what is needed in the future.

General LYONS. Yes, ma'am.

I think what is critical as we look to the joint warfighting concept, so the character of warfare, as it changes as we continue to evolve, will drive changes in the character of logistics in the way that we are able to deploy and sustain the force on a global scale. We have got to continuously adapt.

As we look at that and we understand those implications, we may find ourselves changing the way we fight, and I think, you know, in an all-domain set, we will, and that will change the character logistics. But we must be able to, as an imperative, to be able to project and sustain the force over global distances as a strategic comparative advantage.

Senator FISCHER. Thank you.

General Wolters, one aspect of the previous administration's realignment plan announced last year was an increase in forces around the Black Sea. I know the broader plan is currently under review, but can you talk about the importance of the Black Sea region and the rationale for increasing our presence there.

General WOLTERS. Yes, Senator. We produced a NATO military strategy that stresses comprehensive defense and shared response in all geographical regions, in all domains, and seeking assistance from a whole-of-government, whole-of-nation. In Europe, what we discovered is we have, over the course of the last 3 years, had placed appropriate interests in the vicinity of the Baltics and we needed to make sure that we were giving the same due interest in the vicinity of the Black Sea, because we had to shore up in all geographical areas.

So, that has been our approach. It has been successful and we will continue to comprehensively defend with shared response.

Senator FISCHER. Thank you, sir.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Fischer.

Let me recognize Senator Blumenthal.

Senator BLUMENTHAL. Thank you, Mr. Chairman.

Thank you all for your service and thank you for being here today.

Let me ask, first, on the topic of vaccines, I want to follow-up on a couple of the questions that have been asked, most recently, Senator Gillibrand. Do you know how many of the men and women under your command, General, have been vaccinated?

General WOLTERS. I do. Senator. We have a Tier 1 vaccination plan; Tier 1 constitutes those in military uniform. We are at about 46 percent of that force being completely vaccinated, those that needed two shots.

We are forecasted, based on the arrival of future vaccines, that have the entire Tier 1 force, those in military in Europe, vaccinated by the middle of July.

Senator BLUMENTHAL. Thank you.

Have you encountered resistance or hesitancy?

General WOLTERS. I'm sorry, Senator. I didn't catch all your question.

Senator BLUMENTHAL. Have you encountered resistance or hesitancy among the men and women in your command, to being vaccinated?

General WOLTERS. We have not. We have the traditional deferral rate that we have seen across all of DOD, but our percentages are within the norms and, actually, slightly less.

Senator BLUMENTHAL. Let me ask both of you, as you well know, the Secretary of Defense ordered that there be a review internally of white supremacists and extremist ideology. Could you give us your assessment of whether there is evidence of that impact or influence or adherence among the men and women under your command.

General LYONS. Senator, I will take that, and I appreciate the question, because I think this is a critically important issue, not just for today, but into the future.

Anything, I think, right, that degrades or violates our oath to the Constitution is incompatible with good order and discipline and military service. I think these first steps that the secretary has taken, regarding the stand-down, it may represent a very small percentage, and I guarantee it is a very small percentage, but it is something that we must contend with.

I think the leadership of the Department is concerted and focused to deal with it long term. We are taking early steps now, and I think we will continue to persist on this issue.

Senator BLUMENTHAL. How widespread do you think it is?

You say it is a small percentage. What is it your evidence?

General LYONS. Senator, you know, my evidence is just 38 years in uniform and now on the force. I am not at all dismissive of the problem, and I acknowledge that it does exist, but I would not characterize it as prevalent.

We have an incredibly talented force of volunteers, the best America has to offer, but even with a small percentage, it is worthy of our leader effort to eliminate it from the force.

Senator BLUMENTHAL. What steps do you think should be taken?

General LYONS. Well, Senator, as I mentioned, the stand-down, I think, is the first step, but out of that, I know the secretary got briefed just this past week on some of the insights from the services.

I think there are other activities in terms of how we do selection and recruitment, how we transition military members out of the military so they are not susceptible to being recruited. I think there is a wide range of activities like that, that will develop over time as concerted lines of effort.

Senator BLUMENTHAL. Do you think recruits or enlistees should be taken if they are members of organizations that espouse views associated with white supremacy or violent extremism?

General LYONS. Senator, I would say, you know, when you get into some of the finer policy issues, there is a lot there. There is a lot packed in and I will defer to the policy experts on that.

I do know clearly though, as a commander in the force, it is not consistent, an extremist behavior activity is not consistent with the values or the good order and discipline of what we need as a warfighting organization.

Senator BLUMENTHAL. I agree that it may be a small percentage, under 10 percent, but that is a large percentage in terms of its potential impact on the readiness and capability of our military and public support for our military.

I welcome your focus on it and your characterization of it as a very important issue of policy.

So, thank you for being here today and thank you for your continuing work on this issue, as well as so many others. Thank you.

General LYONS. Yes, sir.

Chairman REED. Thank you, Senator Blumenthal.

Senator Rounds, please.

Senator ROUNDS. Thank you, Mr. Chairman.

Gentlemen, let me begin by thanking both of you for your service to our country, as well as your family's sacrifices. You dedicate your time to our country.

I would like to begin by just talking a little bit about the challenge that we see right now, or the possible challenges, with regard to regional conflicts that could occur, Let me begin by just pointing out that most recently we have seen some very aggressive posturing by both, China, their incursions within Taiwan's airspace with larger and larger air groups, and second of all, within the European treater and Russia's aggression that we have been talking about earlier in the Committee meeting.

Can you describe, briefly, the impact on the ability of your command in your professional military judgment, to execute its missions, if the United States became engaged in two conflicts and was forced to defend friends and allies in the Pacific and in Europe simultaneously.

General Wolters?

General WOLTERS. I can, Senator, and it starts with the appropriate approach. We have been very aggressive in Europe in making sure that we understand the importance of allies and partners in the process, and the importance of a comprehensive approach to regions, and the importance of not getting myopic in one region and forgetting what is happening in another region.

Today, when you ask most military members in Europe if they have a concern, for example, about Russia, it will take at least 5 seconds to where the follow-on question is, do you have a concern about China?

So, in the military, and in our Nations, we have don't to think big and we have to take a whole-of-government, whole-of-nation, whole-of-alliance approach to the security challenges that we face, and we have to be willing to look up and out of each one of our areas of responsibility.

Senator ROUNDS. General Lyons?

General LYONS. Sir, I think there should be no question to our commitment, as General Wolters mentioned, to our longstanding values-based international order, whether that is in the East or the West.

From a TRANSCOM perspective, we assess, continuously, a full range of plans and contingencies that we might have to respond to. We look within the construct of the planning guidance and the plans themselves.

I would be happy to discuss any of those kinds of questions in a closed hearing if you would like, sir.

Senator ROUNDS. Both of you would agree that prior planning for the appropriate concerns or the different situations is critical, fair enough?

General LYONS. Yes, sir. Absolutely.

General WOLTERS. Yes, sir.

Senator ROUNDS. Let's talk a little bit about what happens if we actually do have conflicts with either Russia or China. They would almost certainly attack the ports and the airfields, where we would load and unload troops and equipment.

General Lyons, what are the implications of a contested environment on bulk fuel capacity distribution and storage, as well as traditional lines of communication. Are we effectively working contested logistics in our planning and taking into account the attrition into our war games yet?

General LYONS. Senator, we have begun that journey and I appreciate the support of this Committee on that effort. Again, I am pleased with the joint staff's work, particularly as a concept, a joint concept for contested logistics that is under development to address these kinds of issues that we will then subsequently, you know, shape forces on, enforce capability work down the road.

We know that we must be able to sustain and project a force under all domain persistent attack. That is fundamentally different than the way we have operated and integrated logistics in the past.

Senator ROUNDS. General, the way that you answered my question, and I appreciate the way that you positioned your answer, saying that we have begun to look at it, I presume that would suggest there is a concern about the way that we have either done it in the past or that we are improving on our planning for that type of a contested environment.

General LYONS. Well, Senator, I think that is accurate. I think, you know, as the character of warfare changes, so should the character of logistics and that we have to adapt to be able to continue to be successful.

What made us successful previously won't necessarily make us successful in the future, so we have work to do.

Senator ROUNDS. Thank you.

My time has expired. Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Rounds.

Let me recognize Senator King, via Webex.

Senator KING. General Wolters, within the last hour since this hearing has been going on, a story broke about a leading spokesperson for the Russians, who is also known as an advisor to Putin, saying that war in Ukraine is inevitable. That it will start with a major cyberattack that could extend to this country, and that they have overwhelming conventional forces and that there is no way that they could be repelled from taking over the Donbas, if not, the entire country. I view this situation as extremely concerning.

I guess my first question is, what is your reaction to the assertion that a Russian invasion of Eastern Ukraine would be unstoppable. Do the Ukrainians have the weapons, the manpower, the training, the wherewithal to stop such an attempt at annexation?

I have got to say, I am mightily reminded of 1938 and the Sudetenland and the German planes of liberating German-speaking people, and very similar things we are hearing from Russia.

Talk to me about the preparation and the readiness of the Ukrainians and our readiness to assist them.

General WOLTERS. Senator, as we discussed yesterday in our phone conversation, we are very concerned in Ukraine and their partners in the region are doing all that they can to improve their posture with each and every second as we go forward. So, if, in fact, an incursion does occur there, their best position for success, not only within their forces, but within their partners within the region.

Senator KING. But, do you believe they could repel an invasion that started next week?

General WOLTERS. I certainly do, over time, Senator.

Senator KING. Well, I think they, let me follow-up a moment about the political situation in Eastern Ukraine.

There are many Russian-speaking people there. What is the political mood in terms of loyalty to the country of Ukraine versus loyalty to Russia?

General WOLTERS. Senator, I would categorize it as high loyalty to the country of Ukraine.

Senator KING. So, the claim that Russia would be liberating these people from Ukrainian control would not resonate in that region?

General WOLTERS. I agree, Senator.

Senator KING. Have we communicated to the Russians, the fact that this, an invasion of this type would be met with a response that would serve as a deterrent?

It seems to me the only thing we have right now is deterrence.

General WOLTERS. Senator, I know that our senior civilian leadership have had conversations with their colleagues in Ukraine and at the senior level with Russia. I am not privy to all of the words that were exchanged, but I know that our senior leaders expressed deep concern about the robust activities in the Donbas and Crimea.

Senator KING. Thank you.

Let me turn for a moment. We mentioned China and Russia numerous times in this hearing. Do you see evidence in your area of responsibility (AOR) of increasing relationship cooperation, if you will, between Russia and China?

Traditionally, at least in the recent past, they have been adversaries, or at least suspicious of one another. Do you see a developing cooperation, which would be inamicable to our interests?

General WOLTERS. Senator, I see cooperation that is superficial at best. I think it is higher at the tactical level, soldier-to-soldier, and I think it is pretty close to phony at the strategic level.

Senator KING. Well, that is reassuring. I hope that is correct.

General Lyons, you and I had an exchange last year about the potential gap in coverage for refueling. You have testified this morning that you feel that that is resolved.

I just want to sort of nail that down, that if called upon, whether it is in the next 2 years or the next 5 to 7 years, which is, as I recall, the potential gap was identified, that we will have sufficient refueling resources to project power.

General LYONS. Senator, I am comfortable and aligned with the Air Force's position on this. I think that we have to be clear that Boeing has a long way to deliver a full, operational, capable weapon system. But in the interim, I am confident with the capability that exists to meet day-to-day, competition, and crisis.

Senator KING. I am just about out of time, but does Boeing have, do we have a date for final delivery and deployment of the KC–46?

General LYONS. Senator, on that, I will defer to the Air Force from a programmatic perspective. The latest estimate was in anticipation of at least a remedy for the remote visual system, next, which is a [inaudible] sometime in the 2023 time frame, at the earliest.

Senator KING. Thank you.

General LYONS. It would take some time to field the capability after that.

Senator KING. Thank you, gentlemen, both for your testimony.

I yield back, Mr. Chairman.

Chairman REED. Thank you, Senator King.

Let me recognize Senator Ernst.

Senator ERNST. Thank you, Mr. Chair.

Gentlemen, thank you very much for being here today. We certainly appreciate your commitment, not only to the men and women within your commands, but to the furtherance of our objectives.

So, I will start with you, General Wolters. Thank you very much. Let's talk a little bit more about our force posture in Europe.

Senator King had just mentioned Russia and the conventional forces that they have available, but beyond just their human resources, they have other capabilities. They continue to modernize their military. They have a number of advanced capabilities like ballistic and cruise missiles; certainly, sophisticated air defenses, as we know, antisatellite weapons, electromagnetic, and cyberattacks. I could go on and on and on in this area.

But these capabilities do pose a challenge to the United States, as well as our allies in that region, and, certainly our partners in the EUCOM AOR.

They also continue with their operations, short of open conflict. So, they are operating in that gray zone area.

So, how are we adapting our forces to those capabilities, to those challenges to push back on Russia and what they might be able to do in the future?

General WOLTERS. Thank you, Senator.

We are maximizing our focus to win in the competition phase and we are doing it through a very deliberate fashion to continue to improve our ability to see the environment with indications and warnings, our ability to respond with solid command and control, and our mission command, which characterizes the readiness of our forces forward being able to conduct all domain operations that take into account the desired effect, at the appropriate time and place of our choosing, to ensure that we can be most effective. That approach affords us the opportunity to counter many of the issues that you just mentioned.

We are also, in accordance with the National Defense Strategy, working very diligently to increase our competitive edge in the areas of indications and warnings, command and control, and mission command.

Senator ERNST. So, with that deliberative approach, you are working with our allied forces, as well, to make sure that we are nested, and each able to lean on one another, our strengths and for our weaknesses to provide pushback?

General WOLTERS. Absolutely, Senator.

The strategic alignment that is required is also outside of the military dimensions, so from a whole-of-government, whole-of-nation approach, whole-of-ally approach, we are doing the same.

Senator ERNST. Great, and one thing, of course, being a National Guard member and being, of course, very aware and supportive of our State Partnership Program, you have mentioned the Baltics, but I was heavily involved in the Balkans with our State Partnership Program with Kosovo. I would just like to hear about how this program has been beneficial through your area of responsibility and how we can maybe further strengthen those partnership programs.

General WOLTERS. Senator, we are very proud of the State Partnership Program, essentially yours in Kosovo, and as you well know, the 632 members of the United States that we rotate into K–4, many come from your state.

It is a success area in NATO. The NATO secretary general is very, very fond to ensure that we keep a laser focus on the Balkans. But the biggest challenge that we face, and one that we have achieved a success with, is to make sure that the lanes in the road are perfectly understood between K–4 and the evolving Kosovo security force. The exist on our Kosovo force has been instrumental in ensuring that we each understand our lanes.

Senator ERNST. Yes, very good.

Just very briefly, and thank you, sir, General Lyons, I am going to push on the KC–46s, as well. I was able to go out on a flight yesterday in a KC–46 with a number of others in a delegation, and

it was a great opportunity to really see this aircraft in motion and work.

We refueled some F–15s. We have got some great boom operators that are training a lot of really wonderful airmen out there.

This is very important to the Iowa National Guard, as well. We still have the KC–135s. We are anxious to move into the KC–46, as soon as Boeing does a little more work.

How important are your planning moves involving the National Guard, are you considering the rotation for the Reserves, the National Guards, their deployments, and so forth, as we move those 46s into those areas?

General LYONS. Ma'am, first of all, thanks for taking time out on Andrews yesterday on the ramp there; really, it just acknowledges what an important capability aerial refueling is.

I would just say it is largely misunderstood or underappreciated how much the Guard, and the Reserve, but especially the Air Guard, contributes every single day to the output of the aerial refueling force element, whether that be overseas or here in the Continental United States on short script alert, day-in and day-out.

I think my own opinion is that the Air Force does this best in terms of total force integration. It is completely integrated today. It is absolutely seamless to me. When I see units out there in the field, I can't tell the difference which component they belong to.

Senator ERNST. Fantastic.

Gentlemen, again, I appreciate it very much.

Mr. Chair, I yield back. Thank you.

Chairman REED. Thank you, Senator Ernst.

Let me recognize, via Webex, Senator Manchin.

Senator MANCHIN. Thank you, Chairman.

I want to thank both of you for your service and your family's commitment and service to allow you to have the opportunities you have to serve our country.

General Wolters, the European Union and Russia have built a strategic partnership in trade, energy, climate-change, research, education, culture, and security. The crisis in Ukraine in Crimea increased sanctions from both, the United States and the European Union (EU) for various violations, but they seem to have limiting effects.

So, my question would be, understanding that the EU is Russia's biggest trading partner, and Russia is the EU's fourth-largest, are sanctions in their current forms, a viable solution to shaping Russia's actions?

General WOLTERS. Senator, I certainly agree that they contribute in shaping Russia's actions. I will also say that living in Europe, that there is a high degree of convergence at the strategic level between what the EU does and what NATO does, and for a military member in charge of military operations, I will tell you that the EU contributions in the area of transportation are a significant boost in our ability to effectively deter.

Senator MANCHIN. A threat that I have been essentially concerned with the continuing development of the Nord Stream Pipelines. Not only do they create a further dependence, they inure on Russia gas and oil, but they also bypass transit countries like

Ukraine and our former Soviet NATO members, which could hold them hostage.

Your thoughts on that?

General WOLTERS. I share your concerns, Senator. It is disconcerting to see what happens with the Nord Stream 2 Pipeline and to the countries that it reaches out to, and the fact that several of those countries are going to potentially be put in the position to where their reliance on Russian fuel is far higher than it should be. It is of grave concern to me.

Senator MANCHIN. Do you have any thoughts on how you would see a potential armed conflict playing out with our allies, whose economies are closely tied to Russia?

General WOLTERS. Well, I would promote those nations to do what we do in the United States, which is to store fuel appropriately, and we do with other nations within Europe, to ensure that we have the resources within to be able to execute whatever it is we need to do to effectively deter and defend.

Senator MANCHIN. You all are coordinating with them on that?

General WOLTERS. We are, Senator.

Senator MANCHIN. Thank you.

General Lyons, the level of coordination, fleet readiness in response to combatant commanders in light of the COVID pandemic that TRANSCOM provided is nothing short of amazing. You all have done an unbelievable job.

The global threat from rational and irrational states and actors is ongoing and the rise of humanitarian support and crisis mitigation is enduring.

What are your concerns, if called today, to support an armed conflict, force projection, sustainment, and redeployment in a contested environment, while also potentially called to support humanitarian missions on opposite sides of the world?

General LYONS. Senator, thanks for the question.

We know that the security environment is changing quite rapidly. We know that the character of war is changing quite rapidly, and so should the character of logistics.

So, our ability to project the force and sustain the force over global distances is a key strategic comparative advantage that we all understand that we must maintain. As we look at that ability and we look at it from the lens of a potential adversary and where there might be vulnerabilities, particularly vulnerabilities of consequence, we are, in fact, addressing those and buying down the risk associated with those.

I am confident in our ability today to continue to project the force and support the force at our time and place of choosing. But I do acknowledge that we have work to do, too, in anticipation of a more sophisticated adversary.

Senator MANCHIN. Let me follow-up on my final question. General Lyons, you spoke about the success of the DOD's power projection capabilities being contingent on three critical elements: global mobility posture, global transport capacity, and global command and control integration.

So, what allied shortfalls currently exist to support these critical requirements if called to surge forces in support of the EU?

General LYONS. Senator, I have to say I am very pleased with the enormous constellation of like-minded allies and partners that support the United States security interests abroad. We could not operate the global mobility enterprise successfully without the access, base, and overflight that they provide in the extension of our broad and far-reaching logistics networks. So, I am very pleased with our allies and partners and I am very grateful for their continued support.

Senator MANCHIN. I know you spoke about Russia's moving on Ukraine and Crimea, again, and everything, and we wish all of our allies and under your all's leadership the most success, because that would be severely critical for all of us if they continue to do what they are doing right now.

But, again, thank you, both, for your service.

General LYONS. Thank you, sir.

Chairman REED. Thank you, Senator Manchin.

Now, let me recognize Senator Sullivan.

Senator SULLIVAN. Thank you, Mr. Chairman.

Gentlemen, welcome. Thanks for your service.

I wasn't planning on raising this question, but since it came up from Senator Blumenthal, you know, I just got back from a week in Marine Corps Reserve training. It is great to serve with such fine men and women, but this notion of extremism in the military, which is thrown about as if we know numbers, Senator Blumenthal thought 10 percent.

I think that is irresponsible. I have asked from the military, data. I want data before we besmirch the entire military.

The under secretary nominee came before this hearing and said he was going to, "stamp out systemic racism within the ranks of the military."

I asked him, have you ever served in the ranks?

No.

Sir, we need to be careful with this. I am just going to ask you 2 generals, who have served your whole career, do you think that we have this giant group of extremists in the military?

I think it is one of the best group of Americans who aren't racist. You have knuckleheads in every organization in the world, including the Congress of the United States, by the way, but there is this narrative now that we have all these extremists in the military. I think it is ridiculous and we need to see data before we start throwing out issues like 10 percent.

How the hell does he know it is 10 percent?

What do you think, gentlemen, do you think you serve in the military with a bunch of extremists?

General WOLTERS. Senator, I concur with you. I don't see a giant portion of the population.

Senator SULLIVAN. It really makes me mad.

The Washington Post, U.S. Senators besmirching the whole damn force irresponsibly.

General, what is your experience?

We have bad people, of course, idiots in any organization, but this is getting ridiculous when a U.S. senator is saying 10 percent. Where the hell did he get that number?

One in ten, is that your experience, General?

General LYONS. Senator, let me be perfectly clear. I think we have the finest military our world has every known. I think we——

Senator SULLIVAN. Me, too. I believe that, and I serve with them. I just got done serving with them.

General LYONS. Sir, I appreciate that.

We have the best that America has to offer. There is no question in my mind, after 38 years of service. I believe that in my heart. I know it to be true.

A very small, very small, and——

Senator SULLIVAN. Ten percent? Do you think it is 10 percent?

General LYONS. Senator, I don't think it is 10 percent.

Senator SULLIVAN. Not even close, is it?

General LYONS. As a matter of fact, I don't think there has been any data on the topic. I can just tell you from experience, it is extremely small, and even though it is extremely small, and it might be less that 1 percent, I don't want to be dismissive of——

Senator SULLIVAN. No, of course, not.

General LYONS.—potential degradation in the ranks. But it should not characterize the joint force.

Senator SULLIVAN. Do you think it is 10——

General LYONS. We have an enormously powerful and professional joint force.

Senator SULLIVAN. Thank you, General.

Do you think it is 10 percent, General? Anything in your experience, in your 30, 40-plus years as a general officer in the military?

General WOLTERS. Senator, I certainly agree that number is too high.

Senator SULLIVAN. Yeah. So, here is what I think the Secretary of Defense needs to do. Enough of this. We need data. We need data, okay, and besmirching the whole damn Force, Reserve or Active Duty, whether it is a U.S. senator, the Washington Post, which writes a story on this once a day with no data, or the under secretary, who wants to be under secretary. I hope he is not going to be under secretary for the Pentagon.

We need to start using data and not this BS. That is shameful, because I don't even think it is close to 10 percent.

You know what we are going to do?

This is going to make people not want to join the military. So, anyway, I was not going to even go on this topic, but when I hear a U.S. senator throw out 10 percent, it is ridiculous. Ridiculous. It is really pissing me off.

Sorry, Mr. Chairman. I have had enough of this.

General, can I talk about the Russian Arctic buildup and what we need to be doing about it. You know, we have this strange scenes of COCOMs.

The actions in the Arctic, which is kind of EUCOM, but Pacific Command (PACOM) owns a lot of the forces. Strategic Command (STRATCOM) has a big responsibility in the Arctic, as well, with missile defense.

What is happening there, it is even more than what has happened recently, and what should we be doing about it and how to think about it?

General WOLTERS. Senator, I think the campaign momentum is traversing in the correct direction with your great work over the

source of the last several years, all of the services, U.S., DOD, and the NATO military strategy, and the NATO concept for deterrence and defense of the Euro-Atlantic, specifically, points to the fact that we must have an Arctic strategy of, and nations' militaries are constructing strategies that must include considerations for activities in the Arctic.

So, the focus and the architecture and approving the resources are growing. As you well know, through your initiatives, we were able to house P–8s and F–35s at Keflavik for the first time, and most of what they did was contribute to indications and warnings (I&W) in the vicinity of the Arctic. Getting the NATO nations, not just the ones that are about the Arctic, but all involved in the process, is occurring through the good work of the secretary general.

So, I believe that our campaign momentum is going in the correct direction from strategy all the way down to requirements.

Senator SULLIVAN. Great. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Sullivan.

Let me recognize via Webex, Senator Rosen.

Senator ROSEN. Thank you, Mr. Chairman.

I appreciate this hearing, and thank you, gentlemen, for your lifetime of service to this nation. We really appreciate everything that you do every day and to all of the servicemen and women that are under your command.

I would like to speak a little bit today about cybersecurity. Our NATO allies, of course, are essential to ensuring U.S. cybersecurity. We rely on our allies to Harden our collective defenses against frequent and sophisticated cyber threats.

Cybersecurity has increasingly become an area of focus for NATO. They are holding the largest cyber exercise in the world to operating a cyberspace operations center in Belgium.

General Wolters, what are the most significant cyber threats that the NATO alliance is facing and can you specifically describe to us the cyberthreat our European allies are facing from Russia.

General WOLTERS. Thanks for the question, Senator. It is a great topic.

I will tell you that I excited about the fact that from a U.S. perspective, our force presentation by selecting one military commander to lead military cyber, as General Nakasone, has allowed us to deliver clear direction and guidance to the Nations that assist us in the cyber arena.

Our manning is much better for all of the organizations and the organizations have continued to perpetuate the Nations, the importance of improving the Nations' cyber hygiene in the network.

As you well know, we still have a long way to go in that area, but nations have to make sure they understand what it takes and how to defend their networks, and then they can start to get into other areas of cyber deliverance of forces. I am very, very pleased to report that the manning across NATO nations, with respect cyber activity has improved and the focus on improving our cyber hygiene has improved across the European nations.

Senator ROSEN. That is terrific, because that was one of my next questions. What are you doing to prevent, mitigate, and recover from cyberattacks?

But how can we help you? How should we be coordinating or what do you think you need to coordinate better with our allies in this realm?

General LYONS. In Europe, we have had the opportunity to lead from the front with respect to the U.S.C. 2 in cyber. We have had the opportunity with the assistance of other European nations to educate the masses on the appropriate steps forward in the cyber domain, and we are getting great support from all nations who want to protect their networks.

I think what we have to do is just continue the campaign momentum that we are currently on and continue the advocacy from NATO and the EU in the cyber domain.

Senator ROSEN. Thank you.

General Lyons, I want to kind of continue on this and talk a little bit about cloud migration. TRANSCOM was, of course, the first DOD organization to move its cyber capabilities and command and control applications to a commercial cloud environment.

So, General Lyons, can you provide us with an update on the migration to the services to the cloud. Are you experience the benefits and what are you feeling about this?

What are your best practices? Again, what do you think you need going forward as you move everything to the cloud and begin to work there?

General LYONS. Well, Senator, thanks for the question, and I appreciate the topic here because I think we all acknowledge that cyber is a warfighting domain and the adversary does get a vote, particularly, across a global mobility enterprise. We know we have a very large and sometimes vulnerable attack surface, and so we are working very diligently for that.

One of the areas, as you mentioned, Senator, is our digital modernization effort, and part of that is moving to the cloud. We have been able to move well over 20 systems into the cloud. We are still working on virtualization in some of these areas, but we are making progress.

I think the cloud does offer some capability and some security that we don't have today, and so I am pleased with the progress we have started, but we still have a ways to go.

Senator ROSEN. Thank you. I appreciate that, and I actually would like to move on and talk a little bit about TRANSCOM COVID–19 operations.

So, General Lyons, can you describe the short-term and long-term impacts that COVID–19 has had on TRANSCOM's operations as you are moving forward, and how have you supported DOD's mission to respond to COVID–19?

General LYONS. Thank you, Senator. I have to say I couldn't be more proud of the entire TRANSCOM team at the way that they have been continuing to operate throughout the entire past year, despite COVID, while taking the appropriate mitigation measures.

You know, early on, we really didn't know what we didn't know, but I am so proud that the folks were able to continue operations. We were able to continue to support the force. Things like Defender Europe continued to a lesser degree, in supporting General Wolters. We were able to support the whole-of-government effort. We were able to conduct aerosol testing for commercial aircraft, for

example, to determine that the probability for viral spread aboard a commercial airliner with high-efficiency particulate air (HEPA) filtration and high velocity air exchange is extraordinarily low.

So, we have been able to work a wide range of things to include trading capability to move highly infectious patients. So, I really am incredibly grateful for the team to be able to face that level of adversity and just continue to drive on.

Senator ROSEN. Thank you, and I yield back.

Chairman REED. Thank you, Senator Rosen.

Senator Cramer?

Senator CRAMER. Thank you, Senator.

Thank you, Generals, both for being here, for your service, of course.

Right up front, let me just associate myself with the statements and the questions from Senator Sullivan, and I appreciate your direct responses.

It is time for Members of this Committee and leaders throughout our Government, as well as, well we can't expect much from the media, but to start being accurate in representing that you represent the best of us, not the worst of us, the absolute best of us, and that is my observation with the vast, vast majority of the military men and women that I encounter. So, thank you for your service.

I will pass on asking you, General Wolters, about ISR. I appreciate your previous response to that. I have some concern about the gap being created between the legacy and new programs. I want to be a part of the solution, so I appreciate your balanced answer.

I will ask you about our outstanding nuclear deterrent and its role currently, as well as going forward. We know that our credible deterrent is our Triad and it is the backstop for most of our operational plans around the world.

My question for you is, if the United States didn't have this credible, nuclear umbrella, would that change Europe's conventional and nuclear posture?

General WOLTERS. Yes, Senator. I think that it would.

Senator CRAMER. What could be the ramifications of them not feeling safe under our umbrella?

General WOLTERS. I think that is the precise issue. We are not certain to the degree that we would be compromising safety and security.

Senator CRAMER. If that happens, could we see, as they changed their posture, you know, the build-out of more allies, of course, I guess?

General WOLTERS. That is possible, Senator.

Senator CRAMER. All right. Then, I am going to shift gears to a question of energy and ask you, specifically, do you believe that completion of Nord Stream 2 would affect the leverage that Russia has over our allies in Europe?

General WOLTERS. Yes, Senator.

Senator CRAMER. Because one of the other peripheral issues that we sometimes get into around here, besides our military and posture and lethality and readiness is climate, and these aren't unimportant issues. I don't want to make the case that they are.

But I want to give you just one example that concerns me a little bit. I have asked many of your peers about the monitoring, for example, of Iran's tankers and the movement of energy, fossil energy in unsafe parts of the world.

But in Europe, we know of a situation a few months ago where ENGIE Power in France, it made a large contract of liquid, natural gas from the United States. The French Government intervened in that.

The French Government used to be a wholly-owned, the sole owner of ENGIE Power, now they are just like a 49 percent owner, but they intervened and said, no, we want to continue buying natural gas from Vladimir Putin. I am not sure that a lot of people around here grasp the magnitude of a decision like that.

Now, your issue, of course, is national security, as is our Committee's, but for those people who want to sort of transfer their climate guilt to other parts of the world, they should know that Vladimir Putin's natural gas, sent by pipeline, to places like France and other European countries and allies of ours, emits about 40 percent more greenhouse gases than liquid natural gas produced and shipped from the United States of America.

So, I guess what I would just request, and you give very good, direct answers to questions, but we need to help our public better understand the ramifications of climate change, globally, and the ramifications of hurting America's domestic production of fossil fuels that are in high demand around the world, and not let our allies, much less adversaries, be dependent more on not as clean, and certainly not as secure energy resources as the alternatives, the American, clean, good energy is.

So, with that, I thank you and yield back.

Chairman REED. Thank you, Senator Cramer.

Let me recognize, via Webex, Senator Hirono.

Senator HIRONO. Thank you, Mr. Chairman.

General Lyons, I have a series of questions for you regarding sealift recapitalization. In your statement to the Committee, you point out that 33 of our 50 roll-on/roll-off sealift ships are scheduled for retirement in the next 10 years.

In last year's NDAA, Congress took steps to bolster the government's ability to purchase additional, used foreign vessels currently on the market to augment the ready reserve force.

First question. How do you assess the progress of recapitalizing our sealift fleet?

General LYONS. Senator, thanks for that we.

We spent a lot of time on this issue with the Secretary of Defense over the last year and, in fact, the Cost Assessment and Program Evaluation (CAPE) issue team was formed around this specific issue. I think we are headed in the right direction. We have got good alignment on the strategy. We have good support here on the Hill with the authorizations, and we have some money in the program by the Navy.

We are, quite frankly, about a year behind where I wanted to be. Where I wanted to be is, at the end of last fiscal year, to be able to buy the first two authorized ships. Those ships that were authorized by the NDAA a couple of years ago.

So, due to some GAO protest issues with the Maritime Administration, that has been delayed a little bit, but they are on track for the end of this year to deliver those first two ships.

Senator HIRONO. Same question, General.

Do the current sealift recapitalization plans sufficiently address the potential for attrition during a conflict with a near-peer competitor like China or Russia?

General LYONS. Senator, as we work through the Mobility Capabilities and Requirements Study, as directed by Congress, one of the things that we are doing is we are considering the future joint concepts, as well as the contested environments that we know in the future that we will face. We were able to assess and do assess some level of elevated risk in terms of our ability to deliver the force on the timelines that the combatant commanders desire, and so we are evaluating that now.

By policy, we don't force size based on attrition, but we do acknowledge the significant implications of attrition in any environment and the need to mitigate that largely through the integration of more warfighting effects.

Senator HIRONO. Therefore, is your answer that the assessments that you are doing currently address the attrition issue that I asked you?

General LYONS. Senator, we do. We address losses. We do.

Senator HIRONO. Thank you.

The last question for this series, Section 3511 of last year's NDAA provided authority to establish a tanker security program, subject to the results of a mobility requirements study.

Do you have sufficient results from the study to determine whether the tanker security program needs to be implemented?

General LYONS. Ma'am, we do. We have looked at this as, again, a congressionally directed study in concert with some other agencies.

We do support, and I appreciate the congressional interest initiative here to create a tanker security program. We think there is value in that. We think it is important that we have assured access to U.S. flag tanker capacity in the event we have to surge the mobility enterprise and the liquid energy enterprise.

Senator HIRONO. Again, General Lyons, I have a question relating to the fact that TRANSCOM is working closely with industry partners like SpaceX on the viability of using space-based vehicles to rapidly deliver time-sensitive logistics anywhere in the world.

Now, this technology is a potential game changer, especially in the Indo-Pacific AOR where commanders are confronted with the [inaudible] of distance and time when moving people and parts from one location to another.

General Lyons, can you provide me with a general overview of the progress being made in space mobility and what additional authorities you need from Congress to help you accelerate this technology.

General LYONS. Thank you, ma'am, for highlighting this. We are working closely with a couple industry partners to include SpaceX, as well as the Air Force and the Space Force on this particular issue.

If you think about the possibility, and it is a real possibility, to be able to take a C–17 load, let's say 18 short tons, and lift it off and deliver it anywhere on the face of the global in less than 60 minutes, that is a real possibility in the near term.

Senator HIRONO. Uh-huh.

General LYONS. While we can't scale that to the entire requirement of the mobility enterprise, to your point, Senator, it offers us great flexibility and I think it creates a powerful dilemma for potential adversaries to move very, very rapidly.

Senator HIRONO. You will let us know if you need further support or authorization to move us on this use of this, development of this technology?

General LYONS. I will, ma'am, and we do not at this time but thank you for that.

Senator HIRONO. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator.

Let me recognize Senator Scott, please.

Senator SCOTT. Thank you, Chairman Reed.

General Lyons and General Wolters, thank you for your service. Thank you for your willingness to defend the integrity of the men and women that put on the uniform and defend the freedoms of this country.

General Wolters, while my primary concern is our military's readiness to deal with the threat of Communist China I remain, of course, concerned about Russia's attempt to destabilize NATO, harbor allies, harm the United States through cyberattacks, and catch up to some advanced weaponry, like hypersonic weapons.

I am also aware of the potential for Communist China and Russia to cooperate to try and harm us.

How ready do you believe your command is to deal with these threats and do you have all that you need, and are you concerned, as I am, about a potential cut to the defense budget under President Biden?

General WOLTERS. Senator, we are concerned about all of those threats. I would certainly agree with every one of the categories that you pointed out.

As a traditional commander, I will tell you that I have a force that is getting faster every day and is better postured every day, but I am never satisfied with our speed and posture. So, in that light, our current resourcing is adequate to continue the campaign momentum to improve our indications and warnings, our command and control, and our readiness.

With a reduction in those resources, from a monetary perspective, there would be a corresponding degradation in our capabilities in those areas, but as we speak, it is adequate and my suspicion going forward is we will have adequate resources to effectively win in competition, if called upon to do so, but we must continue to improve our competitive advantage in all of the areas that you point out and I have pointed out from an I&W and C2 perspective.

Senator SCOTT. So, if you saw a cut in the defense budget, where would you, what could you cut? If you had to cut things, what would you reduce?

General LYONS. I would have to take an incremental reduction in ISR that supports I&W and an incremental reduction in C2 that

supports our ability to respond. I would make sure that we are adequately resourced in the mission command/readiness area.

Senator SCOTT. How long would you be able to do that before you have to say to yourself, you have to say that you are not ready?

General LYONS. It just depends on the magnitude of reduction, and I don't have the specifics on what the budget looks like, but based off the evidence I have today, I think from an adequacy standpoint, we are in good shape for the near term, between now and the next 5 years.

Senator SCOTT. Thank you.

General Wolters, it is clear that Turkey and their President Erdogan is not our ally and not a helpful member of NATO. I met with Erdogan during the Trump Administration, along with some of my Republican colleagues to question him about Turkey's ongoing relationship with Russia.

I also introduced legislation calling for sanctions against Turkey for purchasing the S–400 air and missile defense system for the Russian Federation and questioned their membership in NATO.

It seems like only Erdogan has gotten worse. So, what are your thoughts about the value of our relationship, is there any value today in that relationship with Turkey, and where do you see it going?

General WOLTERS. There is, Senator.

I must tell you, they remain a vital NATO partner, and I will tell you from a military perspective, Turkey being the second-largest military in NATO, they do assist greatly in the area of deterrence and competition.

One of the reasons we have such trust, mil-to-mil, is the fact that the 2300 United States military members that live and work each day on Turkish soil are appointed and given tremendous force protection consideration on behalf of the Turkish military, and that trust, from a mil-to-mil perspective, remains very, very high.

But, as you said, they are no longer part of the F–35 parem with the United States. We understand the decisions that they made with respect to the S–400. We understand that sanctions are working. We will continue to work with our military counterparts, but as we move forward, mil-to-mil, they remain a very vital NATO military partner.

Senator SCOTT. Did you ever understand why they did the S–400. I mean, does it make any sense to you?

General WOLTERS. Senator, it doesn't, unless it was for the purpose of an easy way out with respect to money.

Senator SCOTT. Thank you. I yield back.

Chairman REED. Thank you, Senator Scott.

Senator Peters, please.

Senator PETERS. Thank you, Mr. Chairman.

Thank you to both of you for your service to our country.

General Wolters, I would like to begin with Nagorno-Karabakh and what has happened there. In your opening statement, you alluded to the conflict only in the context of Russia's role in brokering a cease-fire agreement in November.

But I would appreciate your thought as the Supreme Allied Commander in Europe on some of the broader implications for regional stability. Foremost on my mind is the fact that Azerbaijan is still

reportedly holding an estimated 200 Armenian prisoners of war and civilian captives.

Now, I understand that is a diplomatic endeavor, outside of your area, but as someone who is in charge of watching that area very closely, I would like your view on this unresolved issue.

General WOLTERS. Nagorno-Karabakh has remained a frozen conflict. Obviously, the activities over the course of the last 90 days were concerning to all.

One of the things that I will mention, Senator, that I was proud to report on was the active involvement of many NATO nations on the periphery to assist in calling for reconciliation and calming of tensions. When it was all said and done, I think most of us believed that this was curtailed sooner, rather than later, as a result of the interests of nations in the region to be part of the solution in rectifying the situation.

There still is an unfortunate set of circumstances that remain with result to the territorial disputes, but there is goodness in the fact that observation posts have been created jointly by nations in the region and our ability to see the environment is greater than it was in the past.

We still have a lot of work in front of us to make sure that from an observation perspective, nations agree that the contracts that they signed up to, so that we can achieve more productive campaign momentum with respect to achieving peace in the Nagorno-Karabakh (NK).

Senator PETERS. Thank you, and from a military perspective, Azerbaijan's drone fleet certainly highlighted the vulnerabilities of sophisticated weapons systems, tanks, radar, surface-to-air missiles. They did not have specific drone defenses.

Has that affected how you prioritize counter-UAS [unmanned aircraft system] capabilities in your area of responsibility and what more do we need to do?

General WOLTERS. I would tell you, Senator, I wasn't surprised with any of the actions that took place in the vicinity of Nagorno-Karabakh with respect to small UAS, and as you know, based off of many of your good efforts in the past, we have a dedicated DOD lead with respect to countering small UAS. I think the campaign momentum, with respect to comprehensive missile defenses improving so that we can counter that kind of capability against us.

So, we are traversing in a productive direction with respect to countering small UASes.

Senator PETERS. Well, I had an opportunity to see some of that just recently down at the Yuma Proving Ground, where I know you are testing those defenses and opening up a process from the Department of Army, at large, but clearly, you are weighing in heavily in the need for that type of technology to be developed and I appreciate that.

General Lyons, your opening statement reported a partnership with Cyber Command to implement Zero Trust on your network environment. But TRANSCOM relies heavily on commercial shipping, in fact, if I look at the numbers, 95 percent for steady state sealift operations, 90 percent for ground steady state and contingency operations, and 90 percent for air passenger.

So, my question to you is, how do you ensure that your network environments for your commercial partners are secure?

General LYONS. Yeah, Senator, it is a great question. We spend a lot of time both, on the Department of Defense information networks (DODIN) and off the DODIN, non-DODIN activities that were relied upon to understand the full spectrum and potential vulnerabilities of the mobility enterprise.

We work closely with our industry partners. We have consistent cyber hygiene language in all of our contractual relationships, but more importantly, we are talking to the senior leadership of all of these companies. They submit self-assessments on their own cyber scorecard. We provide insights on best practices. We are developing a proof of principle for a third-party verification. Basically, this would be a new venture for the Department to be able to confirm or deny cyber compliance.

So, a lot of work going on in that area. The industry partners are coming along, but I don't want to mislead anybody to think that we some magic ability to protect commercial partners, you know, from an advanced, persistent threat.

I would say, though, that it is bigger than cyber. So, resiliency is bigger than just the network's piece; it is always the physical redundancy that we have to ensure that we have many readiness providers. I am confident with our approach on that.

Senator PETERS. I realize you facilitate annual self-assessments based on just guidelines.

Where do those assessments lead and is there more work that we need to do?

General LYONS. Senator, there is always more work to do. They come in at an executive level. We share those assessments. You know, for example, a concern might be multi-factor authentication from a cyber hygiene perspective. So, we have those conversations.

I find that inside the boardrooms today, they are very cyber savvy and committed and want to improve their cyber posture. So, we are pushing on an open door.

Senator PETERS. All right. Thank you.

General LYONS. Yes, sir.

Chairman REED. Thank you very much, Senator Peters, and now, via Webex, Senator Blackburn, please.

Senator BLACKBURN. Thank you, Mr. Chairman.

To each of you, I say thank you for your service. We are greatly appreciative of the work that you do every single day.

General Lyons, let me stay with you there on the cybersecurity issue. TRANSCOM does have a high volume of strategic mobility missions on a daily basis. There are varying levels of detail, and so as we move personnel and equipment in and out of the different theaters, how much of that information is communicated across classified versus unclassified networks?

General LYONS. Senator, I think you are aware that a great deal of our information is moved across unclassified networks, both inside the DODIN and, of course, outside the DODIN. That, unto itself, isn't the risk, as long as we take the proper procedures and we take the proper measures of defense and encryption. But a large volume of our information does move across unclassified networks.

Senator BLACKBURN. Yes. I think it would be helpful if we had a percentage and kind of a threshold at which we need to classify some information for force protection purposes, but not others for communicating pertinent details to uncleared personnel. That is an area that, in my opinion, would deserve a little bit of a deeper dive and a bit more attention.

General Wolters, the NATO 2030 Report identifies China as a full-spectrum systemic rival, and that is something that I agree with.

It is not only, China is not only a security threat, a national security threat, they are an economic threat. The way they are pushing the belt and road initiative, the way they are pushing debt diplomacy, is something that should give us pause, because it all feeds in to the civil military fusion that they practice and live every single day.

So, since the last time you were before us at this Committee and we discussed this issue, what has, and I am quoting now, your comment, expanding the competitive space, meant to EUCOM, specifically, for competition with China, and how does this affect the work we do, the mobility, interoperability with our NATO allies?

General WOLTERS. It has a large effect, Senator, and I think it is an imperative as a result of the way that China conducts activities for us to take a whole-of-government, whole-of-nation, whole-of-military, all-domain approach, with the activities of China, as they bear on the European continent.

We are obviously very concerned with respect to Huawei 5G. We are obviously very concerned with respect to the proliferation of their involvement with sea ports and air aerial ports, and we are paying very, very close attention to all of those areas.

In the information environment, as a nation who supports democratic value as being part of an alliance that supports democratic values, we have told the truth about some of the sacrifices that nations would make if they continue to endeavor in 5G. We have actually seen a little bit of the turning of the tied with respect to China and 5G Huawei; nations electing to go in different directions.

As you well know, Senator, the United Kingdom made that call recently and ran a position on the European continent where several other nations are doing the same. So, vigilance remains sky-high and there must be an all-domain approach and a whole-of-government, whole-of-nation approach to this challenge.

Senator BLACKBURN. Well, I agree with you on that, and I fully believe that if we look at China as a problem set that we need to solve, that we are going to have to have our allies working with us as we look at this as a problem set.

So, talk with me for just a couple of minutes, if you will, about any physical roadblocks that may be there or any regulatory roadblocks that would prohibit movement of our forces within your AOR or participation with NATO allies or their working with us on the China issue.

General WOLTERS. No roadblocks at this time, but what we are anticipating is an increase in our demand to share across secret information lines. As you know, Senator, we are working very, very hard to make sure that we can open up the aperture from a policy

perspective with our NATO allies and partners to be able to share certain classified information.

We are achieving success in that area with the assistance of this Committee, and I would ask for your continued endorsement in that area to make sure that we can you adequately share information so that we can make headway against malign influence on behalf of China.

Senator BLACKBURN. Well, I agree with you on that issue, and that goes back to the first question for General Lyons about the amounts of information that we are communicating over classified and secure versus unclassified and secure networks and the dangers that that may put our men and women who are currently deployed in various areas, that that may open them to.

Again, we will continue to work with you all on these issues. I have got a couple of other questions that we will submit for the record.

But I see Senator Duckworth is there waiting, so I will yield back my time and allow her to get her questions in, also.

Chairman REED. Thank you, Senator Blackburn.

Let me recognize, via Webex, Senator Duckworth.

Senator DUCKWORTH. Thank you, Mr. Chairman, and thank you to my good friend from Tennessee.

I have discussed a portion of our supply chain and logistics enterprise with the Department's civilian leadership like Secretary Austin; Deputy Secretary of Defense, Kath Hicks; and former Under Secretary of Defense, Ellen Lord.

I have discussed it with service chiefs like the commandant of the Marine Corps and with combatant commanders, like Admiral Davidson. I have discussed advancements and we need to make it a logistics capabilities in order to face the unique challenges of the Indo-Pacific's geography and the threat of real great-power competitors.

I have been dogged in my insistence that we will not be able to build a combat credible deterrence if we do not have the logistics capability and capacity to realistically support our complex military operation, no plans.

My takeaway from all of my conversations with these many senior defense leaders is that they do recognize the problem and they do agree with me, and yet, it still doesn't seem to me like we are adequately investing in Transportation Command and our strategic logistics capabilities.

General Lyons, it is good to see you today. In this setting, as much as you can, in this unclassified setting, what are your biggest capability and capacity challenges, shortfalls, and how can Congress best resource Transportation Command to provide the power projection and sustainment necessary for our operational plans?

General LYONS. Senator, let me just say, thank you for your strong, unwavering advocacy in understanding the combat credible deterrence assurance, and really to be able to respond to when, that is so critical in our logistics enterprise. So, I really do appreciate that.

I know you are aware of several ongoing initiatives that we are getting support from the Hill on to include sealift recapitalization

that we talked about. We have alluded to some work inside the Department on the joint concept for contested logistics.

I think this begins a very important journey for us across the joint force as a Department to fully integrate the logistics just the same, a warfighting function amongst all warfighting functions that will be critical as we move forward and evolve to support both, the changing character of warfare and adjust the character of logistics to support the changing character of warfare. So, a lot going on there to include some of discussions you just heard on cyber.

So, we are, in fact, getting good support and good collaboration across the combatant commands, across the services, and inside the Department on the things that I think are most important, and we will continue to push on these kinds of issues, whether they be mobility or liquid energy to ensure that we can continue to project and sustain the force well into the future.

Senator DUCKWORTH. Thank you.

I want to also follow-up on the discussion on cyber that you just had with my good friend from Michigan, Senator Peters. I would like to take it a little bit further and ask, does TRANSCOM currently have systems in place that will evaluate compliance with, you know, the cyber requirements in terms of your civilian partners, and how do you enforce cybersecurity measures with commercial partners?

General LYONS. Yes, ma'am. Thank you.

For the commercial partners, which, we have many, and good partnerships, that is currently done through a self-assessment and self-reporting. We are working a proof of principle for a third-party to be able to validate compliance. That is a relatively new initiative. We have to work through the feasibility of that, but we are working in that regard.

I would say, though, today, we have a very transparent and a good level of coordination with our industry partners.

As I mentioned, I think we are pushing on an open door when it comes to cyber risk and cyber coaching. So, we are getting good cooperation, and at the end of the day, we ensure we don't have any single points of failure inside of our industry networks.

Senator DUCKWORTH. Thank you, General.

By the way, I just want to congratulate you on your remarkable career, and I happen to think that leaving from the TRANSCOM is a capstone. It is my personal interests, my personal, or I consider it critical to our force and I just want to thank you for how well you have done there and how well you have moved our capacity, both capacity and capability forward, when it comes logistics for our national security, and I just, you know, can't thank you enough for your dedication, and I hope you have a wonderful early part of your retirement, where you said you are going to go underground and hide for a little while. Enjoy that, but then I am sure that we will see you around again sometime soon.

Thank you so much.

General LYONS. Thank you, ma'am.

Senator DUCKWORTH. Thank you for your services.

Chairman REED. Thank you, Senator Duckworth.

Now, via Webex, let me recognize Senator Cotton.

Senator COTTON. Thank you, Mr. Chairman.

Thank you, gentlemen, both for appearing in front of us.

General Wolters, I want to ask you a couple more questions about Ukraine. An alumni of your organization, General Ben Hodges, recently said in a television interview on a Ukrainian television network, that he believes Russia's buildup in the Donbas area is not specifically about Donbas, but more about control over the Black Sea coast, and, in particular, trying to take control of Mariupol and maybe the Sea of Azov to stage Russia for further incursions onto the northern Black Sea coast.

Have you seen that interview and, if so, what do you think about General Hodges' comments?

General WOLTERS. Senator, I haven't seen the interview, but I, too, am concerned about the protection of sovereign activity in the vicinity of the Black Sea.

Senator COTTON. This was a concern back in 2015, was it not, after Ukraine first made its incursion into the Donbas, that they were going to try to establish just a little land bridge to Crimea?

General WOLTERS. It was, Senator.

Senator COTTON. That would be deeply harmful, not only to Ukraine, but also to American interests in the Black Sea region and to Europe, more broadly?

General WOLTERS. I concur, Senator.

Senator COTTON. Thank you.

I know that you were asked a question earlier about the Javelin missiles that we had provided to Ukraine, but to be very exact, those are in possession of the Ukrainian Armed Forces and they are entitled to use those anywhere in their country and in any manner that they need to defend their territory?

General WOLTERS. That is correct, Senator, for defensive purposes, to defend their sovereign territory.

Senator COTTON. The Javelin is, by definition, really, a defensive weapon, wouldn't you say?

General WOLTERS. I would, Senator.

Senator COTTON. I will relay one story from the summer of 2015. I was with the former Chairman of the Committee, Senator McCain in Eastern Ukraine, about as close as they would let us get to the Donbas, and we met with some troops from there and then irregular militia forces that had rallied to come to Ukraine's defense. One had been a former tank commander. He was a lieutenant in the Red Army and now he was a battalion commander of this new unit.

He was pleading with us at the time to convince the Obama-Biden administration to provide Javelins, which they never did, and he said to us, Mr. Senators, we do not need a hundred Javelins to use against Russian tanks. We only need one Javelin to use against a Russian tank and then Russian tankers will think twice.

Would you agree with that, is that a folk wisdom, from the battlefield, General Wolters, that one Javelin used in Eastern Ukraine against a Russian tank would make a lot of Russian tankers think twice?

General WOLTERS. I would, Senator, and I think you have accurately characterized the spirit of the Ukrainian Armed Forces.

Senator COTTON. All right. Thank you.

Let's move on to another matter about making Russians think twice. In the wake of Russia's development of new intermediate-range nuclear forces capabilities, and also our long overdue departure from the intermediate-range nuclear forces treaty, how should NATO posture our forces to adapt to Russia's missile threat and what, in particular, should we do to focus on missile defense and long-range strike capability in the European theater?

General WOLTERS. Senator, as we talked before, we have to continue to improve in indications and warnings and command and control so that we can see deeper into the environment and respond quicker, and if we will continue to improve those areas, with respect to the integrated air and missile defense programs that we have in work today, we will keep the campaign momentum traversing in a productive direction.

Senator COTTON. Are our NATO partners comfortable with the development of those kind of long-range strike capabilities that can hold at risk, Russian targets that previously would have been within the INF prohibited range of missiles?

General WOLTERS. Senator, I would characterize the environment as the Nations are becoming more comfortable as they gain greater understanding of the operational environment.

Senator COTTON. It sounds to me like that is a pretty strong asymmetric advantage in our favor, isn't it, unless we think that Russia is going to start putting intermediate-range missiles in Cuba or the Bahamas or Canada or Mexico, since we can put them up against Russia's border, and they have a much harder time doing it on our border?

General WOLTERS. I concur, Senator.

Senator COTTON. It seems to me like there should be a lot more of them [inaudible].

Thank you, General.

Thank you, General Lyons, as well, for your service.

Chairman REED. Well, thank you, Senator Cotton.

Let me now recognize Senator Kelly.

Senator KELLY. Thank you, Mr. Chairman, and thank you, General Wolters and General Lyons.

I want to talk a little bit about Defender Europe 2020.

You know, we trained, so we are prepared to fight and prepared to win and, you know, this exercise is one to test our power projection. I want to hear directly from the two of you, what were the top lessons learned from Defender Europe 2020, and then how does that translate into changes in the exercise in, well, coming up in this year?

General WOLTERS. Senator, the number one lesson learned was the value of Army pre-positioned stockpiles and deployable air base systems. We have studied this issue for a long time.

Moving at speed with large formations across the Atlantic and getting to point, ultimately, to the appropriately foxhole with a ready force member is a challenge. Having those pre-positioned stockpiles in place was very beneficial, more so, than we could have possibly imagined and Defender Europe 2020 verified that.

Senator KELLY. General Lyons?

General LYONS. Senator, thanks.

It is such a critical exercise. We got a lot out of it. I would say a couple of things. It demonstrated, clearly, in my own view that we do, as a nation, have the ability to move immediately, if required, and as well, as follow it with a decisive force.

Now, as I looked at that operation and I looked at what General Wolters was trying to do and our ability to get the force to him, I felt very confident in our ability to support his efforts and deliver the decisive force, when needed.

Senator KELLY. So, the sealift capability, was that tested?

I know we had more Air Force and Navy resources. I assume, some Military Sealift Command (MSC) resources involved. Do you feel you have the sealift capability you need if this was not an exercise, but was, if we wound up in a real fight?

General LYONS. Senator, I think you are aware, I mean, we have a lot of work to do on sealift. On sealift recapitalization, we have an aging fleet, a fleet that has some readiness challenges, and we have a plan to remedy that over the next decade.

But in this particular exercise with multiple vessels underway, some commercial, some organic, some, frankly, being integrated in the handoff between the second fleet and the sixth fleet in Europe, it was a great test of our ability to coordinate the transatlantic crossing, and I think very successfully so.

But, to your point, we have work to do on the broader sealift capacity, because in a surge environment, we are making quite literally hundreds of turns, as opposed to dozens of turns, as in this case.

Senator KELLY. General Wolters, further, in Eastern Europe, the infrastructure was designed for Warsaw Pact, you know, nations, Russian tanks, vehicles, troops. That infrastructure was designed for things to be travelling east to west.

Did that come up in part of the exercise in transporting our equipment and troops to the east through infrastructure that was not designed for this?

General WOLTERS. It did, Senator, and with the contributions of the European Deterrence Initiative over the course of the last 3 years, we have had the opportunity to specifically work on road and rail from west to east, Central Germany to the Baltics, and down to Hungary, Romania, Bulgaria, and we have made improvements in those areas, but it is still a challenge and it is something we will continue to work on, but we were much faster than we had been in the past.

Senator KELLY. Finally, how, in the remaining minute, how would you like to see this exercise change to make sure we are as prepared as possible for, you know, real engagements?

General WOLTERS. We are in the process of executing Defender Europe 2021, and one of the changes that we are making is a cyber red team and we want to improve our cyber defensive posture for the duration of the exercises involved with Defender Europe 2021.

Senator KELLY. Thank you, and I yield back.

Chairman REED. Thank you, Senator Kelly.

Let me recognize Senator Hawley.

Senator HAWLEY. Thank you, Mr. Chairman.

Gentlemen, thank you for being here. Thanks for your service.

General Wolters, let me start with you. Secretary Austin has reaffirmed the position from the prior administration that China is our pacing threat. Given that, what is your view on what you could do in EUCOM to free up military resources that the Department can use in the pacing theater.

General WOLTERS. Senator, my first response is, what we do to effectively compete and deter against the nearest peer competitor in Europe, Russia, is effective in deterring China, because of the connectivity between the two nations and the willingness of both nations to engage in malign influence against the United States and against NATO.

So, those activities that allow us to continue to be successful in the competition phase against Russia are also helpful against China. Whether it is pointing out the poor path that a nation could take with respect to Huawei 5G or whether it is pointing out what China is doing, with respect to equities in sea ports and aerial ports investment in Europe.

Senator HAWLEY. Let me ask you a little bit about NATO. There has been a lot of talk about NATO's role in helping confront China.

Wouldn't it be helpful if European allies did more to bear the burden of confronting Russia so that we could focus on what has been identified as our pacing threat, the pacing theater?

General WOLTERS. No argument that here, Senator, and I am pleased to report the Nations are. They are very fixated on Russia. There is no hesitancy on their part, and I say that as a result of producing the first NATO military strategy in over six decades. I am finalizing the concept for deterrence and defense of the Euro-Atlantic area, all of those codify the challenges that we face against a malign Russia, and the Nations have been very willing to produce national plans that take into account Russia as a malign influencer in the region.

Senator HAWLEY. Let me just ask you about our NATO allies spending in 2014, I think it was, that NATO members agreed to spend 2 percent of their gross domestic product (GDP), respective GDPs on defense by uh 2024.

Now, the world has changed a lot since 2014 and, then, particularly, again, our own assessment of what is now our pacing threat, from a military standpoint and given the changed security environment, do you think that 2 percent is still the right target?

General WOLTERS. I do, Senator.

I will tell you that from 2016 to 2020, the 10 nations today that meet the 2 percent minimum, all the Nations involved have allowed us the opportunity to get our hands on $130 billion extra and that makes a big difference with our ability to effectively compete.

Senator HAWLEY. Has EUCOM done any analysis as to that 2 percent number, why you still that that 2 percent is still the right number?

General WOLTERS. Sir, EUCOM has done an analysis, Office of the Secretary of Defense (OSD) has done analysis, and NATO has conducted analysis. The feedback we get is the [inaudible] pledge of 2 percent is still viable with respect to our ability to build a competitive edge against near-peer competition in Europe.

Senator HAWLEY. Would you be willing to share that analysis, General, in the appropriate setting with this Committee?

General WOLTERS. Yes, sir.

Senator HAWLEY. Thank you very much.

Let me just ask you before I move to General Lyons about ISR, you mentioned in your opening statement that timely indications and warning would be key for deterring or blunting any Russian attack in the Baltics.

Of course ISR is a very scarce commodity. Our forces in the Pacific also need a timely indication to warnings of possible Chinese attacks. They are particularly with regard to Taiwan.

So, my question is, how do we minimize the amount of American ISR that is needed in your AOR so we can monitor Russian forces effectively, but also continue to bolster our deterrent posture in PACOM?

General WOLTERS. Continue to communicate to our allies and partners that the criticality of ISR and what it contributes and indications and warnings, and what it affords you the opportunity to do in the competition phase before you get to crisis or before you get to conflict. In NATO, we are having success with that.

Senator HAWLEY. Very good. Thank you.

General Lyons, in my remaining seconds here, let me ask you a logistics question. Admiral Davidson has recently warned that China might attempt a fait accompli with regard to Taiwan, much sooner than we might otherwise previously have anticipated.

Just from a logistics standpoint, what do we need to do, what do we need to have in place in the Indo-Pacific in order to blunt such an offensive as quickly as possible, in your view?

General LYONS. Well, Senator, you know, Admiral Davidson has done some great work out there. It still has to continue in terms of the posture, not just in the Pacific, but the global posture. So, it is so critical that we think of things globally and not just Indo-Pacific.

Our global posture that offers us a physical, a temporal, and a psychological advantage to be able to come when we are told to come. I have a high degree of confidence that we can do that.

I know that there is still work to be done as we evolve and look at the future character of warfare, but I think we are on the right path to support Admiral Davidson's initiatives.

Senator HAWLEY. Very good.

My time had expired. I will have another question or two for you for the record.

General LYONS. Thank you.

Senator HAWLEY. Thank you both, gentlemen, for your service.

Chairman REED. Thank you, Senator Hawley.

Senator Tuberville, please.

Senator TUBERVILLE. Thank you very much, Mr. Chairman.

Real quick, I know we are running out of time, but I want to thank you for being here today and your service. Just real quick, Redstone Arsenal, you know, we have quite a bit of things at Redstone and you have done a great job for the American people. It looks like we have a great chance to have the Space Command (SPACECOM).

General Lyons, how important is that, how important is us to move up in Space Command? I know we are on the infant ages of that, but what do you think about Space Command?

General LYONS. Senator, I think space is clearly a warfighting domain and I think that the creation of SPACECOM, as well as Space Force was critically important to the way we are going to operate in the future and, you know, the character of warfare as we see it.

I really can't comment on the basing issue, whether it is Huntsville or some other location. I will confirm, just being an Army officer and knowing what is at Huntsville, how critical that installation is to Army operations and other operations and such.

Senator TUBERVILLE. Thank you.

General Wolters?

General WOLTERS. I couldn't agree more. Space is a warfighting domain. It is a pretty large domain, compared to all the others, and it is important that we understand how to effectively compete and deter and defend in space.

Senator TUBERVILLE. What do you think about laser warfare? I have seen some examples of that in Huntsville and what we are developing.

Do you see a future for that?

General WOLTERS. I do, Senator, and I think we need to continue down that path. It is not cheap, but the return on investment due to accuracy and lethality is very powerful and very compelling.

Senator TUBERVILLE. General Lyons?

General LYONS. Senator, I would just say, you know, anything that provides us an opportunity to bring lethal effects on an adversary to compel them to our will on aware national security, that just has to remain on the table.

Senator TUBERVILLE. Yeah. Thank you very much.

Just a quick comment about earlier about some things that were said in here. I was disturbed a little bit about using the word white supremacists.

You know, I am a football coach in trade and I build teams, and that is what you are doing, you are building a team, and we have people in here that has never been on a team. They don't understand, you recruit people and you make something out of them and you bring them together. You fight together. You live, you eat, you breathe, and they come from all economic backgrounds, every culture in the world.

Some people don't understand that. They don't understand it, and you will eliminate them, as I did when I was coaching. If you had somebody that wasn't a teach member, they were gone.

You do the same thing in the military. We need to stay out of that. We need to leave it to the generals, which, to me, are the coaches, the people that do it, that get it done, that know these young men and women. Because, listening to our people the other day that we were interviewing about a draft in the future, which, you know, we want to draft women. We think they serve a great purpose, and we are going to need it.

You know, this is a dangerous world. A dangerous world, and we can't sit back and try to tear our military down from people that really know nothing about it, about building a team. So, I want to apologize for that. I mean, that was not a good selection of questions, I don't think, for this Committee, because we are here to

help. We are here to give advice if you want advice, but not give you advice so you have to take that.

You know, I was disappointed in Secretary Austin. You know, he is a Army guy, and first thing we do is we stand-down, stay out of it, personally.

In terms of publicly, you know, I know being a coach, there are a lot of things you didn't bring up publicly. You kept it within, because you have got to build, because you divide if you start bringing it up publicly.

So, we need a killing machine and we are going to need one, just looking at what is coming. So, thanks for your service and your building, and hopefully, we can keep people out of what you all do and do great, because you are the defense of the world, not just the defense of this country.

Thank you very much.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Tuberville.

Thank you, gentlemen, for your testimony.

It is the intention now to adjourn the public hearing and quickly move to SVC–217 for a classified session.

Senator INHOFE. Can I make one?

Chairman REED. I will yield to Senator Inhofe.

Senator INHOFE. Well, let me just thank the coach for his comments. Right on.

Chairman REED. If there are no further comments, then the hearing is adjourned.

[Whereupon, at 11:50 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

CYBERSECURITY

1. Senator HIRONO. General Lyons, in your posture statement, you acknowledged both the advantage of partnering with civilian carriers to meet U.S. Transportation Command's (TRANSCOM) missions, but also the risks that come from partnering with companies who primarily use unclassified networks. What is the current status of TRANSCOM's efforts to harden its networks to defend against cyberattacks?

General LYONS. TRANSCOM has implemented a layered defense-in-depth construct to harden our networks. We are focused on quickly mitigating critical vulnerabilities across our portfolio and have invested in data encryption capabilities to create trusted data transactions, which have decreased adversary attack vectors. Additionally, our robust network intrusion detection system, continuous network monitoring program, and access to third party threat intelligence from industry experts, allow our intrusion detection analysts to better deter, detect, and respond to incidents.

In addition, TRANSCOM's continued investment in cloud services led to a more robust infrastructure, increased our security posture, and improved the resilience of our mobility systems. TRANSCOM, in partnership with U.S. Cyber Command (CYBERCOM), is implementing a Zero Trust security model that will enhance TRANSCOM network traffic visibility and better position the command to secure sensitive data, systems, and services. TRANSCOM's efforts are informing the way forward for architecture standards, data analytics development, and assessment criteria for future Zero Trust security model implementations across the DOD.

To reduce cybersecurity risks with our commercial partners, TRANSCOM incorporated the Defense Federal Acquisition Regulation Supplement Clause 252.204–7012, Safeguarding Covered Defense Information and Cyber Incident Reporting, language in all Readiness Transportation Service Provider (TSP) contracts. The contract language requires Readiness TSPs to implement National Institute of Standards and Technology (NIST) Special Publication 800–171, "Protecting Controlled

Unclassified Information in Nonfederal Information Systems and Organizations," to safeguard covered defense information processed or stored on their internal information system or network.

The contract language also requires each of our Readiness TSPs to complete an annual cybersecurity self-assessment of the NIST security controls. 2020 marked the third year of contractually requiring our Readiness TSPs to submit self-assessments, and self-reporting compliance has continued to improve each year. Overall, we assess that most of our TSPs are taking cybersecurity seriously and the NIST standards will help them improve their security. However, TSPs will always be challenged to keep out advanced persistent threat actors.

2. Senator HIRONO. General Lyons, is your command coordinating with U.S. Cyber Command (CYBERCOM) on this effort?

General LYONS. Yes, TRANSCOM is aligned closely with CYBERCOM on a wide array of cyber security initiatives designed to harden networks against malicious cyber activities. We are partnering with CYBERCOM on a Zero Trust security model implementation. In addition, we routinely combine efforts on joint defensive cyber operations in response to emerging threats. We are also members of various CYBERCOM working groups, such as the Comply-to-Connect and the Operationalizing Cyber Security Service Providers working groups, focused on improving the Department's cybersecurity posture.

MILITARY MOVES

3. Senator HIRONO. General Lyons, last November, the Government Accountability Office (GAO) overturned DOD's multi-billion dollar contract award to move servicemembers' household goods around the world because of pervasive errors in the contracting process. Can you provide an update on the status of re-awarding that contract?

General LYONS. [Deleted.]

4. Senator HIRONO. General Lyons, will the delay negatively affect any military servicemember and family movements during peak season this summer?

General LYONS. Yes. The contracting delays translate into delays to TRANSCOM delivering a more professional, higher-quality moving experience than is possible in the current program. Whereas we originally intended to begin operating under the GHC in 2021, we now don't expect to begin operating under GHC until 2023.

While we've made some marginal improvements to the current program and incorporated many GHC rules into the existing program, our current model limits the quality improvements we can make. Our current construct is a constraint to innovation, as we are tied to the capabilities of 'the lowest common denominators' in the program. The current model prevents us from capitalizing on existing capabilities in industry such as near real-time event status updates as shipments are in-transit and mobile applications to provide Families modern tools to manage all aspects of the move process (including claims). Indeed, the GHC is an opportunity to raise the standard for DOD Families, attract additional quality capacity to the program, and incorporate modern capabilities (which we take for granted in every aspect of our personal lives) into the Personal Property Program.

So yes—because the delays prevent us from delivering a better experience to DOD personnel and their families sooner, I can only characterize the delays as having a negative effect.

5. Senator HIRONO. General Lyons, what steps are you taking to ensure the contracting errors committed last year don't happen again?

General LYONS. [Deleted.]

VACCINATING TROOPS IN EUROPE

6. Senator HIRONO. General Wolters, last month, shipping delays to Landstuhl Regional Medical Center in Germany slowed vaccination efforts in U.S. European Command (EUCOM) for servicemembers, DOD civilians, and their families. Can you give me an update on the current status of vaccination efforts in EUCOM?

General WOLTERS. USEUCOM is vaccinating rapidly across the theater. Our vaccination efforts are aligned with the Department of Defense population prioritization schema and over 46,000 eligible (19%) have been fully vaccinated with almost 51,000 (21%) having received their first shot.

7. Senator HIRONO. General Wolters, will EUCOM be able to meet the April 19th date set by President Biden and offer vaccinations to servicemembers, DOD civilians, and adult family members who want one?

General WOLTERS. USEUCOM is on pace to meet the 19 April date set by President Biden to offer vaccinations to all eligible adult beneficiaries. We are also on pace to meet the Department of Defense (DOD) milestone to vaccinate 70% of the total eligible DOD population, including beneficiaries, by 15 August.

RUSSIA

8. Senator HIRONO. General Wolters, Russia has continued engaging in malign activities across all parts of Europe. Alarmingly, Russian troops are massing forces along the border of Ukraine while Ukrainian forces are fighting Russian-backed separatists in the country. Furthermore, Russia's Navy has deployed additional warships to the Black Sea in its escalation of aggression and is posturing to gain a strategic naval advantage in the Arctic. What steps are the U.S. taking to counter renewed Russian aggression in and around Ukraine?

General WOLTERS. USEUCOM works within the whole-of-government and alongside our NATO Allies and Partners to develop response options as Russia increased its force posture and aggressive stance towards Ukraine. We remain vigilant and focused on activities in the region as well as amplify messaging for major exercises. Recent options executed included Bomber Task Force flights, destroyers operating in the Aegean Sea and Eastern Mediterranean Sea, and a fly-in of High Mobility Artillery Rocket Systems (HIMARS) into Romania. We are monitoring Black Sea region activities and able to modify and add options as environmental changes necessitate.

9. Senator HIRONO. General Wolters, how are EUCOM naval assets responding to Russia's recent activity?

General WOLTERS. USEUCOM's maritime assets routinely operate across the Eastern Mediterranean Sea, Aegean Sea, as well as in the Black Sea consistent with the Montreux Convention and international law. Four destroyers recently participated in a Romanian-led NATO exercise. The USS IWO JIMA Amphibious Readiness Group with the 24th Marine Expeditionary Unit embarked will operate with the HMS QUEEN ELIZABETH Carrier Strike Group and other maritime nations throughout the theater. Through our robust array of operations, missions, and activities with Allies and Partners, we demonstrate our combined ability to deter and defend. Russia's recent activities underscore the importance of conducting these assurance measures, increasing our alignment and strengthening relationships with like-minded nations.

10. Senator HIRONO. General Wolters, is anything additional required to ensure we can adequately respond to Russian naval initiatives?

General WOLTERS. Dedicated Carrier Strike Group and amphibious presence are key elements of a lethal and agile theater posture. Two additional destroyers will enhance our seapower projection and deterrence in the Mediterranean and Black Sea, and all the way up to the Arctic. Persistent Indications and Warning across the Greenland, Iceland, U.K. Gap is critical for high-end subsurface threat detection and defense of the Homeland. Increasing our unmanned systems to allow us to better surveil critical areas with speed and clarity will strengthen our ability to defend and deter across the Euro-Atlantic area.

11. Senator HIRONO. General Wolters, in your statement to the Committee, you highlighted the importance of your partnership with the State Department on the Russian Influence Group (RIG), which is designed to counter Russian disinformation. Can you provide additional information on this program?

General WOLTERS. The Russia Influence Group (RIG) is a United States interagency forum focused on taking coordinated actions that counter Russian malign influence. It is co-led by the Department of State's Bureau of European and Eurasian Affairs and USEUCOM. This collaborative program supports U.S. national strategy, including executive and legislative branch policy and guidance.

12. Senator HIRONO. General Wolters, do you think more funding for the RIG program would be beneficial?

General WOLTERS. Yes, the RIG is currently funded through July 2021. USEUCOM has submitted a request for $2 million of the required funding to fund the RIG beyond July 2021. This additional funding request will expand interagency collaboration and enable the RIG to better contribute towards holistic solutions.

This program provides tremendous value-add towards countering Russian malign influence through a whole-of-government approach.

QUESTIONS SUBMITTED BY SENATOR JACKY ROSEN

CYBER SECURITY

13. Senator ROSEN. General Wolters, how are you preparing the Alliance to better defend its networks and operations against the growing sophistication of cyber threats and attacks, and what more should the U.S. and our allies be doing?

General WOLTERS. NATO continues to adapt to the evolving cyber threat landscape. In 2020, NATO released the Concept for the Deterrence and Defense of the Euro-Atlantic Area. To support this effort, NATO bolstered deterrence efforts in cyberspace by establishing a cyberspace operations center at the Supreme Headquarters Allied Powers Europe in Mons, Belgium. Integrating cyber and information effects in joint U.S.-NATO exercises enhances transparency and alignment and advances security cooperation. These combined efforts contribute to the Alliance's ability to address malicious cyber activity in a 21st century security environment.

The U.S. must continue to support NATO's cyber adaptation efforts in order to maintain Alliance relevance in Cyberspace. USEUCOM works routinely with the Alliance to normalize cyberspace operations through combined exercises that build readiness and a foundation for deterrence. USEUCOM delivers support to Allies and Partners who are developing their cyber capabilities through "train, advise, and assist" missions that build cyber capability and capacity. USEUCOM also invests in Alliance cooperation in cyberspace. The recent Solar Winds attack illustrates the importance of sharing actionable and timely information with our Allies to minimize exposure to vulnerabilities we know our adversaries exploit.

14. Senator ROSEN. General Wolters, are we providing assistance to vulnerable allies to develop and maintain capabilities they could not afford to develop or procure alone? If so, can you talk about how the vulnerability of North Atlantic Treaty Organization (NATO) partners impacts U.S. national security?

General WOLTERS. USEUCOM trains, advises, and equips Allies and Partners through security cooperation programs to bolster our collective self-defense across the Alliance, protecting both NATO and U.S. national security. For example, USEUCOM assists in provisioning defensive cyber capabilities to modernize and harden Ally and Partner networks. USEUCOM also provides assistance on critical gaps in cyber incident response and cyber workforce recruitment, training, and retention which is key to developing and maintaining those delivered capabilities.

15. Senator ROSEN. General Wolters, in 2014, NATO made cyber defense a core part of collective defense by declaring that a cyber attack could lead to the invocation of NATO's collective defense clause, or Article 5, meaning that an armed attack against one is considered an armed attack against all. What is the threshold for a cyber-attack that could lead to invoking Article 5?

General WOLTERS. The Alliance stands ready to compete in all domains, including cyber. Secretary General Stoltenberg has highlighted the negative impact cyber attacks can have on our Allies' security. His comments, in light of the increasing threat posed by malign cyber actors, continues to drive Allied investment in cyber preparedness. The Alliance focuses on improving resourcing, training, and growing personnel commitments that enable the collective to compete below the threshold of war, deter, and prevail in the cyber domain today. Whether a particular cyber attack rises to the level of an "armed attack" would be decided during Article 4 consultations. The Allies maintain a degree of ambiguity with respect to their national level red-lines which might invoke an Article 4 request for consultations. In this regard, it is worth noting that events must reach a threshold that threatens the security of NATO or a NATO Ally individually.

VACCINE DISTRIBUTION TO UNITED STATES SERVICEMEMBERS IN EUROPE

16. Senator ROSEN. General Wolters, can you describe the challenges with vaccine distribution at our installations in Europe?

General WOLTERS. The initial supply-constrained environment required USEUCOM to follow the Department of Defense (DOD) population schema to maximize vaccine utilization. As the United States and DOD increase vaccine supply, we will be able to more rapidly inoculate our eligible population. USEUCOM is on pace to meet the 19 April date set by President Biden to offer vaccinations to all eligible adult beneficiaries. We are also postured to meet the milestone of 70% of the total

eligible DOD population, including beneficiaries, to be fully vaccinated by 15 August.

17. Senator ROSEN. General Wolters, have there been any recent delays in vaccine shipments? If yes, can you name the installations that have been most affected by such delays?

General WOLTERS. There are no current delays in shipments of vaccines to the USEUCOM Area of Responsibility.

F–35 PROGRAM

18. Senator ROSEN. General Wolters, can you confirm that 5th generation airpower is a requirement for your mission in EUCOM, and can you explain how 5th generation aircraft, like F–35, meet that requirement?

General WOLTERS. The F–35 is the cornerstone of our global fighter fleet going forward. This is especially true in Europe as we work alongside our five currently equipped F–35 Allies to deter and prepare to respond to adversary aggression. The F–35's integrated, battlespace information-sharing, and hardened sensors and weapons enable rapid decision-making and extend the range of integrated off-board systems across the Joint Force. As more Allies and Partners purchase the F–35A, with approximately 460 aircraft are expected in theater by 2030, its high commonality with the U.S. F–35B and C variants allows USEUCOM to leverage common maintenance practices enabling rapid mobility across the continent with minimal footprint.

19. Senator ROSEN. General Wolters, has the F–35 program had a positive impact on both military and diplomatic relations with these key allies?

General WOLTERS. As more nations partner to invest in the F–35, it broadens our cooperation and strengthens our ties with key Allies in Europe. Through this shared platform, maintenance practices, intelligence preparation, and alignment of tactics, techniques, and procedures, we are stronger, better prepared, and more lethal together. The F–35 will reach its full potential, with the inclusion of our partners, to enhance our deterrence capabilities and better defend the Euro-Atlantic. Seven countries have purchased the F–35, and with even more nations within USEUCOM Area of Responsibility expressing interest in the program.

QUESTIONS SUBMITTED BY SENATOR JAMES M. INHOFE

UKRAINE

20. Senator INHOFE. General Wolters, you testified that the lethal aid the United States has provided to Ukraine through the Ukraine Security Assistance Initiative (USAI) has been "very helpful". What specific elements of USAI have advanced Ukraine's ability to deter further Russian aggression?

General WOLTERS. USAI enables procuring critical equipment and enhancing Ukraine's combat capability and credibility. Ukraine's ability to field a combat capable force serves as the greatest deterrence against further aggression in the region. Under the category of lethal aid, USAI is funding armed Mark VI patrol boats, counter-artillery radars, sniper capabilities, and Precision Shoulder-fired Rocket Launchers. Non-lethal assistance under USAI includes capabilities across domains such as secure communications, electronic warfare systems, counter-unmanned aerial systems, cyber and information technology capabilities, and night vision devices, all of which are necessary in 21st century warfare.

21. Senator INHOFE. General Wolters, what specific elements of USAI have supported EUCOM's objectives in the Black Sea Region?

General WOLTERS. In the Black Sea region, USAI is improving Ukraine's ability to defend against ongoing Russian aggression, most notably by funding armed Mark VI patrol boats and armaments for Island Class Patrol Boats. This fleet of modernized patrol boats enables the Ukrainian navy to improve its maritime patrol capabilities and situational awareness, serving as a deterrent to Russian aggression.

F–35

22. Senator INHOFE. General Wolters, you testified that the F–35 is necessary for you to "have a competitive advantage necessary to protect our sovereign territory." Please describe in specific detail how this platform contributes to that competitive advantage.

General WOLTERS. The F–35 is the cornerstone of our global fighter fleet going forward. This is especially true in Europe as we work alongside our five currently

equipped F–35 Allies to deter and prepare to respond to adversary aggression. The F–35's integrated sensors and ability to share critical information throughout the battlespace enable rapid decision making, extend the range of integrated off-board weapons systems, and allow greater degree of maneuverability in contested environments. The F–35 is a critical enabler of our ability to fight in the air and target enemy ground systems that would contest our access to any domain we deem necessary. As more Allies and Partners purchase the F–35A, with approximately 460 aircraft are expected in theater by 2030, its high commonality with the U.S. F–35B and C variants allows USEUCOM to leverage common maintenance practices enabling rapid mobility across the continent with minimal footprint.

EUROPEAN DETERRENCE INITIATIVE

23. Senator INHOFE. General Wolters, you testified that reductions to the defense budget and to the European Deterrence Initiative (EDI) funding would "slow down our campaign momentum that we've been able to sustain for the last 4 years in improving our indications and warnings, our command and control, and our readiness. What investments through EDI have improved capabilities in each of these?

General WOLTERS. EDI enables USEUCOM to meet U.S. national security requirements in concert with our Allies and Partners. Stable, predictable, and consistent EDI funding is needed to maintain and improve our ability to succeed in this strategic competition era.

An example of success is building and procuring Army pre-positioning stock equipment sets and Air Force basing equipment to increase our speed across the theater to effectively posture at a time of need. EDI funds continue to improve our Theater Undersea Warfare operations and build Mission Partner Environment (MPE) command and control (C2) networks. MPE networks (including the Atlantic Resolve mission network, Enhanced Forward Presence mission network, Maritime Mission Enclave, and the Maidan network) facilitate coalition multi-national C2, training, exercises, and execution at the tactical and operational levels throughout the USEUCOM AOR.

USEUCOM continues to improve our indications and warning and intelligence sharing with NATO Allies and European Partners across the AOR, most recently with Poland and Romania. We are requesting approximately $84 million to enhance cross-domain interoperable solutions for air and ground operations in support of theater requirements. The ability to increase the number of manned and unmanned platforms based on the changing environment improves situational awareness and support to Joint and Coalition operations.

An investment of $209 million in European Deterrence Initiative exercises and training focused in the southern portion of USEUCOM will provide dedicated opportunities to refine Command and Control (C2) architecture, increase interoperability, and develop a more ready, lethal, combat-capable force.

MULTI-DOMAIN TASK FORCE

24. Senator INHOFE. General Wolters, you testified that the addition of 500 United States troops to Wiesbaden, Germany will be focused on a "multi domain task force in a joint theaters fire organization . . . that will improve our ability in all domains, to bring fires from the surface to surface dimension to increase our ability to deter." Could you provide more detail about the elements of this task force, their capabilities, and how they will integrate into EUCOM planning and operations?

General WOLTERS. The Multi-Domain Task Force—Europe (MDTF–E) will provide Mission Command of forces, integrate and liaise with applicable organizations, conduct targeting, and synchronize efforts in alignment with the USEUCOM objectives. MDTF–E will compete for influence and access to counter malign actors, prepare the environment, enable defense of friendly forces and critical nodes in competition and armed conflict, and conduct deliberate targeting. In a conflict, the MDTF–E will neutralize enemy forces, defend lines of communication, and provide support to dynamic and deliberate multi-domain targeting.

SERVICE BUDGETING AND REQUIREMENTS PROCESS

25. Senator INHOFE. General Lyons, the tanker divestments were a very concerning issue last year. What is wrong with our requirements process when Congress has to step in to ensure you have enough tanker aircraft to stay mission ready?

General LYONS. Last year, based on KC–46 delays, the Committee asked for an assessment of programmed retirements of KC–10 and KC–135 aircraft. At that time, planned aircraft retirements, combined with KC–46 delays, resulted in a 30% reduc-

tion in Active Component capacity, which would be insufficient to meet day-to-day needs across the Joint Force.

This was a change from the USAF initial fleet program position, which retained sufficient air refueling capacity to mitigate risk. However, in the final days of budget formulation, the USAF was forced to absorb a significant reduction in funding. In order to protect future programs, the USAF opted to accept risk in the air refueling portfolio. This process, as designed, illuminates different risk perspectives of Services and Combatant Commanders.

Since that date, technical solutions emerged and the Department has settled on an agreed upon force presentation plan that meets Joint Force requirements. Overall, though we have taken some "lessons learned" from this experience, I assess no systemic deficiencies in the requirements process.

26. Senator INHOFE. General Lyons, why can't the Pentagon seem to provide resources for joint mission requirements, and do you have similar concerns with any other platforms today?

General LYONS. Unfortunately, the President's Budget 2021 submission adjusted air refueling fleet program quantities at the last minute, which did not allow for collaboration between stakeholders. This was an exceptional case. Generally, the budget process adequately balances risk and resources with involvement of relevant stakeholders. For the Fiscal Year 2022 President's Budget, the capabilities and capacity the Military Departments presented meet our needs, avoid significant risk in the near term, and allow for future mobility force shaping to meet modernization and operational requirements.

GLOBAL HOUSEHOLD GOODS CONTRACT

27. Senator INHOFE. General Lyons, I am concerned about the household goods contract because, according to reports, it would have cost taxpayers billions more for a "best value" Household Goods contract. As we have already seen this administration take the first steps to cut the defense budget, can you say why TRANSCOM felt these additional costs were worth such an increase in contract value?

General LYONS. As outlined in the cost savings report directed by last year's Consolidated Appropriations Act, USTRANSCOM projected $210 million in savings across the Future Years Defense Program as compared to DOD's spending in the current program. Many reports in the public domain—to potentially include the reports referenced in the question—compared prices between bidders and did not consider the more than $2 billion DOD spends today in a program no one is satisfied with. While our first award of the Global Household Goods Contract was not to the lowest bidder, it was to the company we assessed most capable of delivering the quality improvements we seek for military families at a lower cost than DOD spends on today's flawed program. I acknowledge—and will comply with—the DOD Appropriations language to provide a report on the impact of the newly awarded contract to Service budgets.

28. Senator INHOFE. General Lyons, what measures has TRANSCOM put in place to address the concerns that were upheld in the GAO protests?

General LYONS. Last year GAO sustained 6 unique allegations of the 75 total allegations made by two protestors. USTRANSCOM is in the process of addressing GAO's recommendations, which largely focused on better documenting the technical aspects of the proposal analysis process. None of the GAO's protest-related recommendations challenged the single move-manager construct, nor has GAO recommended any changes to the acquisition strategy or timeline.

The contracting team significantly heightened its documentation of proposal evaluations. For instance, USTRANSCOM recorded and transcribed the in-person oral presentations to satisfy GAO's recommendation to document that aspect of the proposal evaluation process.

Three offerors submitted new written proposals on 2 December 2020, and all three offerors are being evaluated from a "clean slate," fully considering all of GAO's recommendations. In addition, three periods of "third party" peer reviews by Defense Pricing and Contracting professionals and the Department of the Air Force Judge Advocate General's Acquisition, Fiscal Law, and Litigation Directorate are woven into the acquisition's process and timeline. While TRANSCOM is disappointed in the protest-related delays, GAO's findings will make this acquisition stronger and the protest process underscores industry's interest in partnering with DOD to deliver this capability. We expect to award the Global Household Goods Contract in October 2021.

QUESTIONS SUBMITTED BY SENATOR THOM TILLIS

NATO

29. Senator TILLIS. General Wolters, the "4 30s by 2020" NATO Readiness Initiative is one of the most important commitments allies have made in recent years. How are allies progressing in fulfilling the commitments they've made?

General WOLTERS. The NATO Secretary General's 2020 Annual Report stated, "Allies delivered on the commitment to having 30 mechanized battalions, 30 air squadrons, and 30 combat vessels ready to use within 30 days or less. Allies are now working on the implementation of the initiative by establishing larger formations."

NATO Allies have continued to improve their readiness of national forces in support of the Alliance's collective defense, enhancing NATO's ability to reinforce its Allies with the "right forces in the right place at the right time."

30. Senator TILLIS. General Wolters, of naval, air, and land forces, which readiness commitments are farthest along?

General WOLTERS. Across all domains, NATO continues adapting to meet the challenges and complexities of our dynamic security environment. Since 2020, when all thirty Defense Ministers endorsed NATO's concept for the Deterrence and Defense of the Euro-Atlantic Area (DDA), we continue to make great strides in driving NATO reform, primarily through the NATO Readiness Initiative (NRI). In the last two years, the Alliance has nearly tripled its naval and air activities to roughly 120 days of operations in the Black Sea region executed by NATO flagged forces. In the air domain, five Allied and Partner nations are now equipped with the F–35, broadening our cooperation, increasing the integration and complexity of national air capabilities into Bomber Task Force missions, and enhancing our deterrence capabilities while leveraging common maintenance and support enablers. On land, Allies deter aggression as part of NATO's four multinational battle groups, as does our enhanced forward presence in the Black Sea region. We strengthen these 21st century warfare pillars in events like the integration of the U.S. DEFENDER and NATO STEADFAST DEFENDER Series exercises to demonstrate all domain convergence across land, sea, and air. We will bring together 28,000 U.S. Allied and Partner servicemembers from 26 countries across 16 nations and for six weeks will develop future capabilities, build Alliance readiness, and improve our operational and strategic alignment.

31. Senator TILLIS. General Wolters, which do we need to focus on more?

General WOLTERS. We continue to improve readiness across all domains and all regions. There are always some challenges with supplying high demand, low density capabilities which have readiness implications. Although each nation maintains responsibility for their own readiness, USEUCOM works bilaterally, regionally, and through the Alliance to increase readiness and interoperability to better deter and defend the Euro-Atlantic. We will continue to pursue a robust exercise program as funding allows to improve readiness in all domains with Allies and Partners.

32. Senator TILLIS. General Wolters, another key initiative from the 2018 Summit was to improve NATO's military mobility, which addresses physical and regulatory roadblocks to movement of U.S. and Allied forces across the area of responsibility (AOR). What more can we do, and in what ways can we encourage our allies and European partners to do more to facilitate our forces' faster movement across the continent?

General WOLTERS. Our robust exercise program, including the U.S. DEFENDER Europe and the NATO STEADFAST DEFENDER series, ensures that our forces are trained, interoperable, and ready to conduct combat-credible movement across the European continent. Multilateral forums, active participation across several NATO committees, and numerous Allied and partner bilateral engagements serve as our best means to incorporate lessons learned from these exercises and our rotational deployments to continue advancing freedom of movement in Europe.

33. Senator TILLIS. General Wolters, allied Ministers of Foreign affairs recently directed NATO to address climate change, including potentially reviewing the Alliance's operational plans and capabilities. How will you balance this against ongoing key efforts to deter Russia and address emerging threats from China?

General WOLTERS. USEUCOM acknowledges the challenges presented by climate change and the guidance from the Secretary of Defense. In today's complex security environment, relations with like-minded partners across the globe are increasingly

important to address cross-cutting security issues and global challenges, as well as to defend the rules-based international order. Our European Allies and Partners will be directly affected by instability, resource competition, and humanitarian and migration crises caused by climate change. These threats add to the security challenges in Europe. Maintaining peace on the European continent is USEUCOM's purpose and we must compliment the whole-of-government approach to combating climate change.

We will continue to assess the operational environment to determine the security implications of climate change, such as the opening of the Arctic Region. USEUCOM will continue to counter aggression by demonstrating robust capabilities and through extensive collaboration with our Allies and Partners. Our distinct advantage against any threat is our unmatched network of Allies and Partners across the European region. Addressing climate change together provides an even greater opportunity to bring the United States and our European Allies and Partners into closer alignment.

34. Senator TILLIS. General Wolters, what allies or regions within the Alliance do you see the U.S. military directing more focus?

General WOLTERS. USEUCOM continues a balanced focus on security in several geostrategic regions including the Arctic / High North, Baltic Sea Region, and the Black Sea Region as well as space and cyber. As the Arctic continues to open, this region has emerged as a stage for political, economic, and military competition. Our initiatives in the Baltic Sea Region defend and deter aggression and enhance interoperability with our NATO Allies. In the Black Sea Region, we continue to support Ukraine's sovereignty and work closely with our Allies in the region to bolster regional stability.

TURKEY

35. Senator TILLIS. General Wolters, as a NATO ally, Washington has committed America to come to Turkey's defense if Turkey is attacked. This has not only failed to moderate Turkey's behavior, it has allowed Turkey's Government to aggressively pursue its own interests at the expense of American interests. Are Turkey's national objections counter to NATO and its allies? If so, what are EUCOM and NATO doing to deter this situation?

General WOLTERS. The principle of collective defense, often called Article 5, is at the very heart of NATO's founding treaty. Collective defense remains a unique and enduring principle that binds NATO members, committing them to protect one another, and setting a spirit of solidarity within the Alliance. Turkey, like all sovereign nations within NATO, pursues its own national interests in addition to those of the Alliance. They have a pivotal role in regional security and remain a strategic United States Ally and critical to NATO and US interests in Europe, Eurasia, North Africa, and the Middle East. They possess the Alliance's second largest military and contribute to NATO missions in Afghanistan, Iraq, Kosovo, and the Mediterranean Sea.

36. Senator TILLIS. General Wolters, what thoughts do you have on United States and the European Union (EU) "whole-of-government" actions?

General WOLTERS. The challenges we face today require a whole-of-government, whole-of-nation and whole-of-alliance approach. One major benefit of democracies working together is how these governments can generate peace, both within their borders and abroad. Ultimately, the NATO Alliance underpins security for the Euro-Atlantic, the European Union, and the United States.

NATO ANTI-SUBMARINE WARFARE

37. Senator TILLIS. General Wolters, in your role as NATO's Supreme Allied Commander Europe, you have one of the strongest grasps on military capabilities of our allies and the threats that we all face in the European theater. It is my understanding that adversarial submarine threat—in particular from Russia—continues to take significant ally and U.S. resources. I also understand that the NATO coalition is considering investments in new anti-submarine warfare capabilities, which would be a welcome way to relieve some of the burden from U.S. efforts. Can you talk about the seriousness of the adversarial submarine threat in the European theater, and do you think it would be helpful if NATO invested in additional anti-submarine warfare capabilities?

General WOLTERS. The Alliance actively deters and competes with Russia under the sea. Russia has recently demonstrated more significant submarine capability than any time in the past 30 years. Many of our NATO Allies recognized this threat

and responded by investing in their anti-submarine warfare capabilities. The United Kingdom and France have already deployed significant capabilities while Norway and Denmark continue to explore additional opportunities. Iceland routinely supports basing of our maritime patrol aircraft. All of this contributes to the Alliance's ever-increasing capability to deter and respond to threats.

38. Senator TILLIS. General Wolters, the U.S. Navy has a fleet of P–8A Poseidons supporting the anti-submarine warfare mission in Europe. Are there ways that the U.S. leadership could encourage or support NATO investment in a similar capability, either through synergies in logistics, basing, or training?

General WOLTERS. Many of our Allies support U.S. P–8 operations in Europe, most significantly through host-nation support to basing of the patrol aircraft. The United Kingdom and Norway have P–8 programs of their own and Germany may potentially develop one as well. United States leadership and advocacy for European Allied investments in maritime patrol and anti-submarine capabilities is always beneficial and contributes to campaign momentum within the Alliance.

JOINT STRIKE FIGHTER (F–35)

39. Senator TILLIS. General Wolters, can you confirm that 5th generation airpower is a requirement for your mission in EUCOM, and can you explain how 5th generation aircraft, like F–35, meet that requirement?

General WOLTERS. The F–35 is the cornerstone of our global fighter fleet going forward. This is especially true in Europe as we work alongside our five currently equipped F–35 Allies to deter and prepare to respond to adversary aggression. The F–35's integrated, battlespace information-sharing, and hardened sensors and weapons enable rapid decision-making and extend the range of integrated off-board systems across the Joint Force.

40. Senator TILLIS. General Wolters, many of our key allies in Europe are participants in the F–35 program. In your opinion, has the F–35 program had a positive impact on both military and diplomatic relations with these key allies?

General WOLTERS. The F–35 program success in Europe has definitely made a positive impact. Allied F–35s routinely play a critical role in generating peace in the Euro-Atlantic through support to bomber task force missions by escorting B–52s and B–2s. These missions increase our interoperability, hone our tactics, techniques, and procedures, bolster deterrence, and validate our integrated approach.

In addition to sharing a common airframe, sharing best practices and common understanding of employment enhances our transparency and alignment to train and operate alongside our Allies and Partners. One example of a long term success story is the Euro-NATO Joint Jet Pilot Training Program (ENJJTP), soon celebrating its 40th anniversary, which trains over 50 European pilots a year. The specific capabilities of the F–35, our partnership with F–35-equipped Allies and Partners, and our combined investments allow us to effectively compete and defend in the Euro-Atlantic.

41. Senator TILLIS. General Wolters, Russia's advanced air defenses and fighter capabilities are rapidly increasing in capability and capacity. These factors are pushing 4th generation aircraft to greater stand-off ranges, often beyond the targeting ranges of their weapons and sensors. In addition, in Europe, we see a threat density that creates a far greater capacity requirement for legacy platforms and weapons. Can you explain the importance of stand-in capabilities, such as 5th generation aircraft, and what advantages they provide if an engagement with Russia were to occur?

General WOLTERS. The F–35 delivers weapons in highly contested environments, opening the door for wider access to other air systems. The platform's combined low observable capabilities (most advanced fighter aircraft sensor suite) and communication abilities enables the F–35 to fuse inputs from across the theater. This enables better indications and warning, providing a more cohesive operating picture for a whole of alliance action. The strengths the F–35 platform brings to the fight enable multi-domain operations elsewhere, including on the ground, in space, and at sea.

AIR-TO-AIR REFUELING

42. Senator TILLIS. General Lyons, the KC–46A Pegasus aircraft has yet to achieve full rate production and lacks a remote visual system that is fully functional during all light levels. Moreover, a KC–46 carries only 2,000 lbs more transferable fuel than a KC–135 and carries 140,000 lbs less than a KC–10. In an effort to reduce cost at the risk of mission failure, the Air Force seeks to retire legacy aircraft

with fully functional and approved fuel transfer systems; specifically, KC–10s. In your opinion, are cost savings more important than strategic mission success? Put differently, should a legacy platform with proven, capable systems be maintained and utilized over a future system that has yet to meet primary mission requirements?

General LYONS. While it is true that fully-operational KC–46s are not available until fiscal year 2024, the Air Force developed an interim capability release (ICR) process that will make KC–46s available for tasking as early as this year. This is a critical step to advance KC–46 fielding and maintain credible capacity. Further, the global strategic environment has significantly changed. As recently as 2017, USTRANSCOM supported 70 air refueling aircraft deployed to USCENTCOM. By 2022, this support will drop to about 35 aircraft. That reduction in demand coupled with the recently developed KC–46 Interim Capability Release (ICR) process, allows for the measured divestiture of KC–10s and KC–135s. This allows aircrews to transition to the KC–46, which is a critical step to advance KC–46 fielding and grow capacity in that airframe. The KC–135s and KC–10s remain critical as we build capacity in the KC–46, and even with the fielding of the KC–46, there will remain 300 KC–135s in the air refueling fleet. Our Mobility Capability Requirements Study (MCRS)-20 study, which was delivered to the Congress on 30 June 2021, clearly shows the air refueling mission absolutely is critical to cover every one of the five NDS wartime missions, and the air refueling fleet is at elevated risk to performing those missions in simultaneous timeframes in contested environments. USTRANSCOM agrees with the U.S. Air Force on a retirement profile for KC–10s and KC–135s in fiscal year 2022. I assess this is the best approach to retain sufficient capacity for combatant command support, provide for full-spectrum readiness training, and hasten use of the KC–46 for those missions it is capable of supporting without increasing risk to certain receiver aircraft or high-priority missions.

43. Senator TILLIS. General Lyons, how many KC–46A air-to-air refueling missions are being sourced outside continental United States (OCONUS) by TRANSCOM?

General LYONS. The following numbers reflect the number of OCONUS sorties flown for each of the last few years. It includes Active Duty AMC tails only (not Air National Guard (ANG), Air Force Reserve Command (AFRC), Air Education & Training Command (AETC), United States Air Forces in Europe (USAFE), Pacific Air Forces (PACAF), Air Force Materiel Command (AFMC), or Air Force Special Operations Command (AFSOC)) that either took off or landed outside of the United States:

Calendar Year 2018: 0 OCONUS KC–46 sorties
Calendar Year 2019: 25 OCONUS KC–46 sorties
Calendar Year 2020: 123 OCONUS KC–46 sorties
Calendar Year 2021: 83 OCONUS KC–46 sorties (thru 31 May)

44. Senator TILLIS. General Lyons, how many KC–10 air-to-air refueling missions are being sourced OCONUS by TRANSCOM?

General LYONS. The following numbers reflect the number of OCONUS sorties flown for each of the last few years. It includes Active Duty AMC tails only (not ANG, AFRC, AETC, USAFE, PACAF, AFMC, or AFSOC) that either took off or landed outside of the United States:

Calendar Year 2018: 4,319 OCONUS KC–10 sorties
Calendar Year 2019: 4,546 OCONUS KC–10 sorties
Calendar Year 2020: 2,927 OCONUS KC–10 sorties
Calendar Year 2021: 983 OCONUS KC–10 sorties (thru 31 May)

45. Senator TILLIS. General Lyons, do you support the Air Force's expedited retirement initiative of KC–10s?

General LYONS. TRANSCOM currently has sufficient capacity to meet day-to-day and crisis response demands. I support the KC–10 adjusted retirement profile outlined by the U.S. Air Force (USAF) Legislative Proposal (FY22), which slows the original retirement profile. With exceptional support from the USAF, three additional positive developments occurred over the last year, that allowed TRANSCOM to retain sufficient capacity to meet mission requirements. First, Boeing came to terms with the responsibility to fix the KC–46 Category 1 deficiencies, enabling the USAF to present a KC–46 Interim Capability Release. Second, the USAF funded additional MPA to increase the Reserve/Guard air refueling capacity/contributions. Finally, we are seeing a reduction in air refueling demand in the CENTCOM AOR.

46. Senator TILLIS. General Lyons, how important is it that "warfighters train like they fight" and prepare for future deployments by tanking from platforms that they will encounter overseas and in combat?

General LYONS. USTRANSCOM's top priority is warfighting readiness and ensuring our component commands are capable of supporting their wartime missions. As such, training for a high-end warfight is an absolute necessity. As operational activity decreased in Southwest Asia, a greater focus across the entire Mobility Air Force, including air refueling forces, shifted to full-spectrum readiness. Since 2015, the average daily number of global air refueling missions was 139, and by the end of 2020, the average dropped to 100. This created opportunity for aircrews to conduct necessary high-end training. Tanker crew training is certainly necessary, but receiver pilot training presents a priority in order to maintain their combat edge. Looking to the future, air refueling workload appears balanced with expected capacity, especially with the KC–46 interim capability release process. With the projected balanced workload, the air refueling fleet will be postured to support global taskings, but also execute the necessary training to prepare for potential future contingencies.

47. Senator TILLIS. General Lyons, the Air Force and TRANSCOM have previously stated that more than 25,000 hours of aerial refueling missions are not being supported annually. Given that the KC–46 is still not fully operational, and the Air Force has already begun retiring some of the KC–10 fleet, I assume that there is still a significant shortfall in TRANSCOM's aerial refueling capacity. What is the current shortfall?

General LYONS. In April 2020, The Secretary of the Air Force provided the Congress with a report titled, "Fiscal Year 2020 NDAA Contractor-Operated Aerial Refueling Aircraft." That reported extrapolated "as many as 30,000 hours of aerial refueling missions are not being supported annually." That assessment resonates with the Joint Force's insatiable appetite for aerial refueling. However, requests for air refueling capability vary in criticality and are often unconstrained by resources. That said, the air refueling fleet remains stressed. USTRANSCOM manages the tension between available resources and requests for capability in order to prevent mission failure.

The transition to the KC–46 created an air refueling capacity bathtub, meaning the air refueling enterprise is at a low point in available capacity. However, acceptance of the KC–46 will ameliorate this capacity low point. Additionally, as forces withdraw from Southwest Asia, air refueling demands also decrease. As recently as 2017, USTRANSCOM supported 70 air refueling aircraft deployed to CENTCOM. By 2022, this will drop to about 35 aircraft. Additionally, the KC–46 crew ratio is higher across the Total Force when compared to both the KC–135 and about the same as the KC–10. When fully delivered and manned in 2029, roughly 160 more air refueling crews across the Total Force will exist, providing 10% more taskable aircraft on a daily basis than we had in 2019, before any aircraft were retired. While we have a shortfall today, the trajectory is improving over time and will accelerate as the KC–46 reaches full operational capability.

48. Senator TILLIS. General Lyons, how does this impact training for aircrews and tanker availability for combatant command (COCOM)?

General LYONS. USTRANSCOM's top priority is warfighting readiness and ensuring our component commands are capable of supporting their wartime missions. As such, training for a high-end warfight is an absolute necessity. As operational activity decreased in Southwest Asia, a greater focus across the entire Mobility Air Force, including air refueling forces, shifted to full-spectrum readiness. Since 2015, the average daily number of global air refueling missions was 139, and by the end of 2020, the average dropped to 100. This created opportunity for aircrews to conduct necessary high-end training. Tanker crew training is certainly necessary, but receiver pilot training presents a priority in order to maintain their combat edge. While the number of tasked air refueling missions was about 100 a day in 2020, USTRANSCOM committed an additional 68 aircraft to receiver training. Looking to the future, air refueling workload is balanced with expected capacity, especially with the relief gained through use of the KC–46 interim capability release that can support many non-deployed and lower priority missions, freeing up fully capable KC–10 and KC–135 units to provide necessary support and refocus on training.

49. Senator TILLIS. General Lyons, last year you testified before this Committee that the KC–10 and KC–135 legacy tanker retirements proposed in fiscal year 2021 would "create a capacity bathtub with significant impacts to Combatant Command (COCOM) daily competition and wartime missions, and negatively impact senior

leader decision space for mobilization when confronted with a crisis." Congress prevented some, but not all, of these retirements in the Fiscal Year 2021 National Defense Authorization Act (NDAA). Given that the KC–46 is still not fully operational, and aerial refueling requirements have presumably either increased or remained the same, would you support efforts to increase tanker capacity in order to meet aircrew training and daily COCOM operational requirements?

General LYONS. USTRANSCOM supports the USAF initiative to employ Interim Capability Release (ICR) process for use of current KC–46 aircraft with some restrictions, adjustments to the KC–10 and KC–135 retirement profile, and increases to Reserve Component contributions to mitigate the air refueling "capacity bathtub" identified last year. As you recall, last year there was no agreed upon technical solution to fix the KC–46 Remote Visual System (RVS) Category 1 Deficiency or a path forward on usable KC–46 capacity. Both of these issues have been resolved and given these USAF initiatives, I assess sufficient air refueling capacity remains to meet global Joint Force demands during the transition to a fully operational KC–46. No additional air refueling capacity is needed beyond the President's Budget 2022 position to meet aircrew training and daily Combatant Command requirements.

50. Senator TILLIS. General Lyons, I have serious concerns regarding the Air Force's desire to retire a significant number of legacy tankers prior to the KC–46 becoming fully operational. I am particularly concerned by the potential loss of the KC–10, which provides significantly more fuel offload than both the KC–135 and the KC–46. I understand that the KC–10 fleet has many more years left in terms of potential service life, and am concerned that prematurely retiring such a strategic asset would result in a loss of warfighter capability that cannot be regained for many years to come. Please describe the importance of the KC–10 to TRANSCOM's aerial refueling capability, and the potential impact to missions for Air Force, Navy, and Marine Corps pilots and aircrews if we cut additional KC–10s.

General LYONS. The KC–10 delivers necessary and relevant capability for all NDS wartime missions. Unfortunately, these aircraft are expensive to maintain. A value-assessment of air refueling systems must incorporate current utility, future capability and cost. USTRANSCOM concurs with the USAF decision to divest the KC–10 in order to facilitate the fielding of a fully operational KC–46 weapon system, which appears to be on track. In the near-term, the USAF is making KC–46s available for USTRANSCOM missions via the KC–46 Interim Capability Release process to ensure sufficient capacity to meet global AR demands, in combination with existing KC–10 and KC–135 aircraft.

51. Senator TILLIS. General Lyons, I understand that, although the KC–46 has been cleared to conduct some aerial refueling missions, the aircraft will not be considered to be fully operational until major deficiencies such as the Remote Visual System are resolved, which likely won't be until 2023 at the earliest. I was surprised to learn that, despite this non- or semi-operational status, the KC–46s being delivered are being coded into the Primary Mission Aircraft Inventory (PMAI). Please explain why these aircraft are given the same inventory status as fully operational KC–10s or KC–135s.

General LYONS. Aircraft are coded as PMAI to signify the airframe has resources to support flying operations, such as weapon system support, maintenance and flying crews, and flying hours programmed against it. Using the established PMAI criteria, it is appropriate to code the aircraft as PMAI especially as the U.S. Air Force looks to generate the crew force necessary to operate the aircraft. With the U.S. Air Force making limited KC–46 capacity available for USTRANSCOM tasking, it is important that weapon system has the resourcing to sustain and grow operational capacity over time. A trained crew force allows the growth of the KC–46 capacity to execute additional taskings to support the Joint Force in the future.

52. Senator TILLIS. General Lyons, I understand that there have been conversations regarding possible uses for KC–10 aircraft prior to being fully retired and sent to the boneyard. I understand that one option is to provide the aircraft to industry, either through sale or as Government Furnished Equipment, for use in a commercial air refueling program. I understand that the Navy and Marine Corps have been successfully utilizing a commercial air refueling program for the last 20+ years. What is the status of those discussions?

General LYONS. As I understand, discussions regarding commercial air refueling are ongoing and potential options are currently undergoing further study by the Air Force. I would defer to the Air Force on the results of their study and whether or

not it determines commercial air refueling as a viable means to meet USTRANSCOM's air refueling requirements.

53. Senator TILLIS. General Lyons, shouldn't KC–10 retirements be halted until a decision is made on commercial air refueling?

General LYONS. No, in coordination with the Air Force, we have developed a sustainable way forward that maintains sufficient air refueling capacity to meet requirements as we bridge to the KC–46. The Air Force Interim Capability Release (ICR) process that makes KC–46 capacity available for limited USTRANSCOM tasking is a key step forward that will help with the transition to that platform. USTRANSCOM supports the KC–10 divestment profile submitted by the Department of Defense which slows retirement pending KC–46 outcomes.

54. Senator TILLIS. General Lyons, do you believe TRANSCOM and the Air Force should be pursuing a commercial air refueling program to address current and future aerial refueling shortfalls?

General LYONS. USTRANSCOM will continue to monitor and evaluate operational requirements. However, we would differ to the U.S. Air Force, as the force provider, to determine cost-effective, legal, and operational credible alternatives to their current air refueling construct.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

CHINA

55. Senator BLACKBURN. General Wolters, what specific vulnerabilities—economic, security, or otherwise—is China exploiting amongst our European partners and allies that it was not exploiting before the COVID–19 pandemic?

General WOLTERS. The People's Republic of China's (PRC) aggressive economic and diplomatic activities in the USEUCOM AOR signal Beijing's desire to build influence in Europe and challenge the established rules-based international order with an alternative model. Since the onset of the COVID–19 pandemic, China has attempted to exploit needs across Europe for critical health supplies and vaccines, which were less viable avenues for influence before the pandemic. Beijing has used the pandemic to expand exports to the region and attempt to elevate its status as a global power. Beijing has delivered COVID–19 vaccines to Hungary, North Macedonia, and Serbia, all countries the Chinese Defense Minister visited in March. Beijing is also publicly advocating for EU approval of its vaccines, which would allow the vaccines to be used across the region. China has also paired this economic engagement with an aggressive disinformation campaign. Chinese officials used disinformation and state-owned media to counter negative press and criticism in Europe and are spreading propaganda about its vaccines in the region.

Coupled with China's growing interest and investment in European ports and critical infrastructure, these activities complicate our steady state and contingency operations. We articulate this risk to our European defense counterparts and highlight shared values, interests, and equitable business practices that distinguish the U.S. as a partner of choice. European nations are becoming increasingly aware of, and concerned about, the risks associated with Chinese capital and investment from the PRC.

56. Senator BLACKBURN. General Wolters, what actions could the United States take to achieve better buy-in from European partners and allies to cooperatively deter Beijing and to negotiate from a position of strength?

General WOLTERS. In Europe, we work on multiple fronts through NATO to develop a common framework to respond to the challenges posed by China, which includes engaging with Allies and Partners on the Indo-Pacific, and working with Allies and Partners to strengthen resilience in the areas like critical technology and infrastructure. We share information, discuss common risks, and create a shared understanding of the challenges to global security and the rules-based international order which increases U.S. alignment with our Allies and Partners.

In NATO, there is increasing recognition of the impact of China on the changing international security environment. The NATO 2030 Report notes that "[NATO] must show political cohesion and remain a platform for consultation on China's actions and Allies' reactions; defending Allies' values and an international order based on rules."

Active United States engagement with European countries has also led to a more guarded posture in Europe on 5G and Huawei, balancing and limiting Chinese influ-

ence in USEUCOM. Multiple European nations enacted restrictions last year on the use of equipment by untrustworthy Chinese manufacturers in the rollout of mobile networks that use 5G technology. We continue to emphasize to European nations that the United States is the security partner of choice.

57. Senator BLACKBURN. General Wolters, what high-return-on-investment activities do you identify for the United States and NATO allies to deter Chinese aggression?

General WOLTERS. In terms of military return-on-investment, our first priority is to defend the Euro-Atlantic and deter adversaries. Many NATO Allies have taken impactful actions to support a free and open Indo-Pacific and to strengthen cooperation with Partners in the Indo-Pacific as well. Specifically, France, Germany, and the Netherlands sent ships to the Indo-Pacific this year to support a rules-based international order and in some cases conduct multinational training with the U.S. and Indo-Pacific partners. As part of the UK's tilt to the Indo-Pacific, the UK Carrier Strike Group 21 (CSG21), headed by the HMS Queen Elizabeth, will deploy to the Pacific with stops in India, Japan, South Korea, and Singapore.

Economically, there is increased awareness among Allies of the threats posed by Chinese investment and infrastructure in Europe, with industries and governments expressing concerns over doing business with China and limiting Chinese commercial transactions that threaten national security respectively. The Baltic nations have all signed 5G security agreements with the United States, and downgraded their participation in the annual 17+1 forum with China this year.

58. Senator BLACKBURN. General Wolters, what are the "lessons learned" from implementing the European Deterrence Initiative that could inform implementation of the Pacific Deterrence Initiative?

General WOLTERS. EDI funding has allowed USEUCOM and the Services to resource key programs needed to deter Russia and support our NATO Allies, facilitate planning, and greatly enhance our preparedness. As the EDI program matured, we developed a process to repurpose and shift funding from contracts or otherwise challenged programs to those that were "ready-to-execute". The repurposing process requires scrutiny from our EDI planners, including a legal and comptroller review prior to being sent to the Office of the Secretary of Defense (OSD) for approval. This process ensures efficient and effective use of funding. The OSD Office of Cost Assessment and Program Evaluation's (CAPE) review and oversight of the EDI program heightened its credibility within the department and Congress. Additionally, our direct coordination with the Services is important, as the majority of EDI procurement initiatives for prepositioned equipment sets is executed at the Service vice the Component level.

59. Senator BLACKBURN. General Wolters, how would you characterize the current China-Russia security partnership in your area of responsibility? Please explain.

General WOLTERS. Ongoing interactions between Russia and China suggest the emergence of a partnership of convenience to advance their mutual interests, rather than a true alliance such as NATO. The expansion of Russian and Chinese influence in the Euro-Atlantic region is detrimental to both United States and European interests. Moscow continues to sell Beijing high-end fighter aircraft and surface-to-air missile systems and has announced plans to develop a joint missile warning system despite the historical distrust between them. Russia remains sensitive to Chinese activities in the Arctic, Central Asia, and Eastern Europe. USEUCOM remains vigilant to any changes in this relationship and utilizes a whole-of-alliance approach to deter and defend the Euro-Atlantic.

NATO SECURITY THREATS

60. Senator BLACKBURN. General Wolters, in practice, what activities must NATO implement to satisfy NATO 2030's recommendation to "enhance the fight against terrorism as part of the hybrid and cyber conversation"? As necessary, please identify threat assessments, exercises, lessons learned, etc.

General WOLTERS. NATO 2030 highlights NATO's role globally, which is based on working even more closely with like-minded Partners to defend our values in a world of increased global competition, to include terrorist activity in cyber and hybrid tactics. We must help strengthen NATO with building greater cohesion and consultation within NATO and among Allies. Increased information and intelligence sharing will enhance situational awareness and a common understanding to counter terror groups' malign hybrid and cyber actions. A cyber red team is currently inte-

grating into exercise DEFENDER Europe 2021 to help strengthen our cyber defensive posture.

TRANSCOM CYBERSECURITY

61. Senator BLACKBURN. General Lyons, in what specific ways has the implementation of the Cybersecurity Maturity Model Certification (CMMC) mitigated cybersecurity risks within TRANSCOM's commercial provider base?

General LYONS. Per the interim DFARS case 2019 D–041 Assessing Contractor Implementation of Cybersecurity Requirements, DOD implemented a phased rollout of CMMC and the requirement for contractors to have a current certification for the required CMMC level will not start until on or after October 1, 2025.

To reduce cybersecurity risks with our commercial partners in the interim, we have incorporated Defense Federal Acquisition Regulation Supplement (DFARS) Clause 252.204–7012, "Safeguarding Covered Defense Information and Cyber Incident Reporting," in all Readiness Transportation Service Provider (TSP) contracts. The DFARS clause requires our Readiness TSPs to implement National Institute of Standards and Technology (NIST) Special Publication 800–171, "Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations," to safeguard covered defense information processed or stored on their internal information system or network.

The DFARS clause also requires each of our Readiness TSPs to complete an annual cybersecurity self-assessment of the NIST security controls. 2020, marked the third year of contractually requiring our Readiness TSPs to submit self-assessments. Self-reporting compliance has improved over the last three years, and the process continues to prove beneficial in giving us greater insight into our TSPs' cybersecurity posture. USTRANSCOM is also in the process of awarding a proof-of-principle contract to have a third-party assess our commercial partner's compliance with CMMC Level 3 security criteria. This proof-of-principle will provide an indication of compliance, identify gaps, and provide an understanding of our commercial partner's cybersecurity posture.

In conversations with our TSPs, we know our TSPs are aware of the DOD's interim rule to amend the DFARS to implement a DOD Assessment Methodology and CMMC framework to assess contractor implementation of cybersecurity requirements. Our TSPs are very cognizant of the emerging requirements and have demonstrated motivation to prepare for the compliance assessment.

AIR MOBILITY

62. Senator BLACKBURN. General Lyons, with respect to Air Mobility Command—specifically, inter-theater lift missions—what percentage of the time is TRANSCOM meeting required delivery dates (RDDs) from requesting units?

General LYONS. Numbers broken out by calendar year:
ULN = Unit Line Number
2019 All–29,115 ULNs (74.1 percent On-time)
2019 Deploy Only–16,715 ULNs (80.6 percent On-time)
2019 Redeploy Only–12,400 ULNs (65.3 percent On-time)
2020 All–28,115 ULNs (78.3 percent On-time)
2020 Deploy Only–14,988 ULNs (81.3 percent On-time)
2020 Redeploy Only–13,127 ULNs (74.8 percent On-time)
2021 All–12,696 ULNs (78.2 percent On-time)
2021 Deploy Only–6,731 ULNs (82.6 percent On-time)
2021 Redeploy Only–5,965 ULNs (73.3 percent On-time)

63. Senator BLACKBURN. General Lyons, in instances of missed RDDs, what are the headlining trends with respect to mission variables, such as weather, maintenance, and crew rest?

General LYONS. For the one-year period beginning 1 April 2020 and ending 31 March 2021, 1,018 of 2,722 (37.4%) of contingency airlift missions delivered past the required delivery date (RDD). The top three drivers for these were aircraft availability (248), efficient asset utilization (224), and a delay based on the customer's request (177). Aircraft maintenance accounted for only 109 of the late missions, weather 36 missions, and crew rest 15 missions.

64. Senator BLACKBURN. General Lyons, does the inventory and availability of grey-tail aircraft adequately support the present demand for inter-theater transportation?

General LYONS. Yes, our grey-tail aircraft adequately support the present demand for inter-theater transportation. Mobility Capability Requirements Study (MCRS)-20

will be delivered at the end of June, provides extensive details on this force element when viewed through the lens of NDS demands.

QUESTIONS SUBMITTED BY SENATOR JOSH HAWLEY

TAIWAN

65. Senator HAWLEY. General Lyons, Admirals Davidson and Aquilino both warned that China might attempt a fait accompli against Taiwan much sooner than previously anticipated, perhaps even before the end of this decade. How do the logistics requirements for blunting a Chinese fait accompli against Taiwan differ from the logistics requirements for fighting and winning a protracted war against China in the Indo-Pacific?

General LYONS. Long, contested lines of communications and the tyranny of distance in the Indo-Pacific region creates dilemmas that will require the integration of logistics planning across all warfighting functions to support the joint warfight. The growth in demand from increasingly dispersed operations, increasingly complex and lethal kinetic platforms, and extended adversary anti-access/area denial capabilities place immediate stressors on the Joint Deployment and Distribution Enterprise to support forward forces immediately, as we rapidly build capacity to deploy a decisive force.

With the distances involved and geography in the INDOPACOM AOR, the core mobility assets remain critical in both instances. Our strategic sea and air lift are crucial and allow us to present a sizeable Joint Force around the globe. Additionally, air refueling is a key enabler that allows this enterprise to deploy fighters and bombers rapidly as well as employ those combat aircraft across great distances. Intra-theater sea and air lift is also critical to sustain and support the force across great distances to meet volume and time-sensitive requirements for cargo, passengers, and fuel.

Both the Mobility Capability Requirements Study (MCRS)-20 and POL Tanker Study will be submitted to Congress at the end of June and both studies provide details on this challenge.

66. Senator HAWLEY. General Lyons, what are the most important investments we need to make to ensure we have the logistics support required to blunt a Chinese fait accompli against Taiwan and then prevail in a protracted war, if necessary?

General LYONS. Two investments come to mind: assets and access. With the distances involved and geography in the INDOPACOM AOR, core mobility assets remain critical. Our strategic sea and air lift forces present a sizeable and credible capability to move Joint Forces around the globe. We need to sustain efforts to recapitalize our sealift fleet to improve our readiness and capacity to project the Joint Force. Additionally, air refueling is a key enabler that allows this enterprise to deploy fighters and bombers rapidly as well as employ those combat aircraft across great distances. The KC–46 is another key investment to recapitalize the aging air refueling fleet. Even when the 179th KC–46 is delivered, 300 KC–135s at 65 plus years of age will remain. Investments in air refueling will remain necessary. Enhancing the readiness of our key mobility platforms is crucial to ensure we maintain the necessary capacity to deploy and sustain the Joint Force around the globe when needed. In terms of access, our regional posture enhances the flexibility and warfighting effectiveness of USTRANSCOM assets. Investments in partnerships that expand access and support adaptive basing initiatives will remain critical for success. Overall, we must continue to invest in the readiness of our sealift, strategic airlift, and air refueling fleets.

CHINA IN EUROPE

67. Senator HAWLEY. General Lyons and General Wolters, how might Chinese investments in European infrastructure, ports, and telecommunications impact America's ability to move forces quickly and reliably across Europe?

General LYONS. It is important to note that strategic competition with the PRC does not mean confrontation or conflict. The DOD seeks a constructive, stable, and results-oriented defense relationship with the PLA that helps put US–PRC relations on a path of transparency and non-aggression. That said, the DOD remains mindful of the PRC's overt challenge to the long standing values-based international order. The DOD monitors Chinese infrastructure investments in Europe and does not currently assess them to be a significant obstacle to the ability of the US to move forces rapidly across Europe. USTRANSCOM intentionally maintains many resilient paths

and nodes that would enable us to work around areas that may be denied or disrupted for any of a wide range of reasons.

General WOLTERS. In coordination with our regional Allies and Partners, United States Forces continue to execute unhindered movements to, from, and across Europe in support of collective security.

We remain vigilant to the risk of non-European ownership or control of ports, telecommunications, and critical infrastructure. While these foreign investments do not currently impede U.S. and NATO operations and activities, if left unchecked they could pose a threat in the future. The U.S., in conjunction with our European Allies and Partners, must continue to execute an all-domain, whole-of-government, whole of nation and whole of alliance approach to this emerging issue.

RUSSIA AND CHINA

68. Senator HAWLEY. General Wolters, there are concerns that the Russian and Chinese militaries may be growing closer in ways that suggest a broader and more enduring alignment between those two countries. How would you describe changes in Russian and Chinese military cooperation over the last several years?

General WOLTERS. Our adversaries have increased their military engagements in recent years, both bilaterally and with other partners through multilateral partnerships—including members such as the Shanghai Cooperation Organization. Notably, China has participated in Russia's annual capstone military exercise since 2018, they have flown two bomber patrols they characterized as "combined" in the Pacific region, and the Nations periodically conduct naval maneuvers together. These events have been highly scripted and probably did not include combined command and control. Even with these developments, however, their military integration remains limited and neither Moscow nor Beijing currently appears interested in forming a military alliance.

INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (ISR) ASSETS

69. Senator HAWLEY. General Wolters, you stated during the hearing that the United States must "communicate to our allies and partners the criticality of ISR and what it contributes in indications and warnings" and that "in NATO, we are having success with that." How are our European allies contributing to meeting our shared ISR requirements in the EUCOM AOR, and how have their contributions changed over the last several years?

General WOLTERS. NATO Allies and Partners continue to increase and improve their theater ISR support to Indications and Warning in the USEUCOM area of responsibility (AOR). NATO invested in five Allied Ground Surveillance (AGS) aircraft (RQ–4 Block 40 platforms) and associated systems to remotely operate this aircraft and analyze the associated indications and warning intelligence data collected. These AGS aircraft are actively conducting ISR operations and integrating direct ISR support and coordination, specifically during focused collection events in the AOR. NATO Allies and Partners continue to increase theater airborne collection processing, exploitation, and dissemination capacity in support of a more federated approach to addressing mission requirements while also decreasing reliance on U.S. exploitation nodes.

DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, APRIL 20, 2021

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

UNITED STATES STRATEGIC COMMAND AND UNITED STATES SPACE COMMAND

The Committee met, pursuant to notice, at 9:30 a.m. in room SD–G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Kaine, King, Warren, Peters, Manchin, Duckworth, Rosen, Kelly, Inhofe, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Cramer, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. Good morning. Today, the Committee will receive testimony from Admiral Charles Richard, Commander, at U.S. Strategic Command, or STRATCOM, and from General James Dickinson, Commander, at U.S. Space Command, or SPACECOM.

I want to thank Admiral Richard and General Dickinson for their service to our Nation. I would also like to extend my thanks to the men and women serving under your commands and their families.

Maintaining our nuclear deterrent or preserving our ability operate in space are fundamental to today's great power competition with Russia and China. There is a reason that we have asked the commanders of STRATCOM and SPACECOM to testify together today.

Until 2019, Space Command was part of Strategic Command. As Space Command stands up as an independent command, I would like to understand what gaps or seams remain exposed as this transition moves forward and ensure these gaps are being addressed; in particular, General Dickinson, I would like to make sure that SPACECOM is fulfilling the space and ground functions you inherited from STRATCOM, with respect to missile warning and nuclear command, control, and communications. Ensuring we can accurately warn both, Strategic and Northern Commands and our senior leadership of a missile attack on the homeland is of the utmost priority.

General Dickinson, I understand that you are also responsible for integrating and tasking both, ground and space sensors for better space situational awareness. In essence, your command has become the DOD's sensor command. I hope you will share your vision to integrate this myriad number of sensors, which range are radars on the ground and at sea, to sensors aboard satellites. Finally, General Dickinson, I would like to know how your command is standing up and how you are finding and retaining personnel with the specialized skill sets associated with the SPACECOM operations.

Admiral Richard, your command is undergoing an intense period of modernization that began with the ratification of the new START Treaty. This will be the third modification cycle since 1960, as part of each leg of our triad ages out. I look forward to your views on modernizing the entire triad and implications of altering that plan, especially with respect to our near-peer competitors.

In addition, I would like to know your views on the efforts by the National Nuclear Security Administration to recapitalize their infrastructure to handle uranium and plutonium. Some of these facilities date to the Manhattan Project and are single points of failure in supporting your mission. It is essential that we understand from you the impacts, if any, on your operations. Finally, Admiral Richard, we have been informed that STRATCOM will require a submarine warhead in twenty thirties to replace one of the two you have now. The replacement warhead is a joint program with the United Kingdom, as their single warhead begins to age out and it is important to our NATO Article V commitments. I hope you will explain this system to the Committee.

Thank you, again, for appearing today and we all look forward to your testimony. Before I turn it over to Ranking Member Inhofe, I would like to note for my colleagues that there will be a classified briefing immediately following this session in SVC–217 to continue our discussion.

Senator Inhofe, please.

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Thank you, Mr. Chairman.

I also want to welcome our witnesses and thank them for their service. Over the past few years, this Committee's top priority has been ensuring to implement the National Defense Strategy, which identifies competition with China and Russia as the central challenge to United States prosperity and security. I agree with that more so today than in 2018 when it was established.

If we are serious about the security of our Nation, we have got to maintain the capabilities required to deter China and Russia and we need to be realistic about the level of resources needed to make that happen, because we have not been in the past. Two critical pieces of those objectives are modernizing our aging nuclear deterrent and improving our space capability in an evolving contested domain.

Admiral Richard, and commander of the U.S. Strategic Command, your primary job is to ensure that our nuclear forces continue to deter the most severe threats to the survivability of our Nation and the security of our allies'. Admiral Davidson told us

some pretty worrying things about Chinese nuclear expanses just last month. You have been a big supporter of nuclear modernization and rightly so. We have delayed critical investments in DOD and the NNSA for too long and now we are almost out of time.

General Dickinson, as SPACECOM commander, you are responsible for the planning and execution of the global space operations and missions. In most DOD war games, the first acts of aggression from our adversaries occur in the space domain and directly impact outcomes. This makes improving our capability to fight and to win in space critical to deterring China and Russia.

Both of you are responsible for missions with zero margin for failure, but I am considered that the administration's defense budget cuts may undermine your ability to develop those capabilities. It would be important for us to hear your best military advice as to what resources you need to accomplish this mission. I look forward to your testimony.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Inhofe.

Admiral Richard, please.

STATEMENT OF ADMIRAL CHARLES A. RICHARD, USN, COMMANDER, UNITED STATES STRATEGIC COMMAND

Admiral RICHARD. Chairman Reed, Ranking Member Inhofe, distinguished Committee Members, good morning.

I am pleased to testify with General Dickinson today and appreciate the collaborative efforts our commands undertake in the defense of the Nation. I thank the President, Secretary of Defense Austin, and Chairman of the Joint Chiefs Milley for their leadership and support to the mission of strategic deterrence. I assure you the command is committed to work the priorities set forth by the secretary to defend the Nation, take care of our people, and succeed through teamwork.

We succeed each and every day through the teamwork of 150,000 men and women performing STRATCOM's missions and I will remind the command it is our diversity, resilience, and professionalism that sets us apart and makes us even stronger. It is truly a privilege to represent them here today.

I also thank the Committee for its enduring support to our national defense and active engagement and interest in the command's missions.

Strategic deterrents enables every U.S. military operation around the world. Every operational plan in the Department and every other capability we possess rests on an assumption that strategic deterrence and, in particular, nuclear deterrence is holding. If that fails, nothing else in the Department of Defense works as planned. STRATCOM sets the most foundational of operating conditions to allow the rest of the Joint Force to accomplish its mission.

As a Nation, I would assert, until recently, we have not fully considered the implications of engaging in competition through crisis or possible direct-armed conflict with a nuclear-capable adversary in nearly 3 decades. For the first time in our history, the Nation is facing two nuclear-capable, strategic-peer adversaries at the same time, both of whom have to be deterred differently.

Chinese and Russian advances are eroding our conventional and strategic deterrence. China, in particular, I submit, cannot be considered anymore, a lesser-included case in this context. The remarkable expansion of nuclear and strategic capability is evidence of their drive to be a strategic peer by the end of the decade. I would describe this as the strategic complement to the conventional capability growth that has been reported by INDOPACOM.

To me, they are at some kind of inflection point and are rapidly expanding their strategic capabilities. This has happened within the last year. They are well ahead of the pace to double their stockpile by the end of the decade, and I would further submit that the size of a nation's weapons stockpile by itself is a very crude measure of what they can do with that capability.

To fully assess the China threat it is necessary to consider the capability, range, accuracy of their delivery systems, command and control, readiness, posture, doctrine in training. In the very near term, China will possess a credible nuclear triad, rapidly expanding road-mobile capability and these are intercontinental ballistic missiles on trucks that they drive around. It is a big country. They can be hard to find.

They are moving to solid-fuel intercontinental ballistic missiles, silo based, very responsive, compared to a liquid-fueled one. They are deploying a strategic bomber and they possess now, six second-generation, Jin-class ballistic missile submarines and they are capable of continuous at-sea deterrent patrol. Developing a dedicated nuclear command and control capability that includes launch under warning and launch under attack. By these measures, China is capable of executing any plausible nuclear employment strategy regionally now and will soon be able to do so at intercontinental ranges.

I offer for China, it is important to look at what they do, not what they say, and where they are going, not where they are. I have no choice but to view China as a significant strategic threat and share Secretary Austin's assessment, China is the pacing threat for the Nation and DOD at large.

Russia, however, remains the pacing nuclear strategic threat, aggressively engaged in conventional and nuclear capability development and modernization, and are now roughly 80 percent complete, while we are at zero. It is easier to describe what they are not modernizing, nothing, than what they are, which is pretty much everything, including several "never before seen" capabilities and several thousand non-treaty accountable weapons systems.

They have a nuclear-armed intercontinental ballistic missile that has the Avangard hypersonic glide vehicle, Poseidon nuclear-powered and nuclear-armed underwater vehicle, and the Skyfall nuclear-powered and nuclear-armed cruise missiles, examples of asymmetric strategic weapons capabilities, designed to deter us and our allies, offset perceived conventional inferiority in an effort to terminate events on Russian terms.

So, given all that, we can no longer assume the risk of a strategic deterrence failure and crisis or conflict is always low. The days of power projection in a permissive operational environment without regard to a possible nuclear response are over. This is why Sec-

retary Austin testified during his confirmation, nuclear deterrence is our highest priority.

Given that threat, the Nation requires a fully modernized strategic force and supporting infrastructure. Every presidential administration over the past 60 years has reaffirmed a safe, secure, effect nuclear force, most credible combinations of capabilities to deter strategic attack, assure allies. Each element has unique capabilities, but it is the combined elements of the triad that allow us to execute our assigned national strategy.

We are at a point where "end of life" limitations and cumulative effects of underinvestment in our nuclear deterrent and supporting infrastructure against the expanding threat leave me no operational margin. The Nation simply cannot attempt to indefinitely life-extend leftover Cold War weapon systems and successfully carry out the assigned strategy. They are at risk of losing credibility in the eyes of our adversaries and if they continue to work at all, they will likely not be able to pace the threat that they are intended to deter.

I will just end with, in particular, it is the nuclear weapons stockpile and supporting infrastructure I think is hitting the wall first. Without the recapitalization of the existing weapons, we risk obsolescence and we could reach a point where no amount of money will adequately mitigate the operational risks we will be facing.

Final point. The Nation has a longstanding, flexible, tailored strategy with a "well thought out" family of policies, capabilities, and postures. I welcome and call for a strategic review, but I advise against any individual policy or capability decision made, absent a complete understanding of the overall effects on that strategy, as it could risk a deterrence failure, which is the underpinning of everything we do.

Ladies and gentlemen, I thank you again for the opportunity to be here today and I look forward to your questions.

[The statement of Admiral Richard follows:]

PREPARED STATEMENT BY ADMIRAL CHARLES A. RICHARD

INTRODUCTION

United States Strategic Command (USSTRATCOM) is a global warfighting command, and as the Commander, I am privileged to lead the 150,000 Sailors, Soldiers, Airmen, Marines, Guardians, and Civilians who dedicate themselves to the Department of Defense's highest priority mission. I thank the President, Secretary of Defense Austin, and Chairman of the Joint Chiefs Milley for their continued leadership in this vital mission area. The command is focused on and committed to the Secretary of Defense priorities to defend the Nation, take care of our people, and succeed through teamwork. I also thank Congress for your continued support to ensure USSTRATCOM is equipped with the required resources necessary to achieve strategic deterrence in any situation on behalf of the Nation.

USSTRATCOM enables Joint Force operations and is the combatant command responsible for Strategic Deterrence, Nuclear Operations, Nuclear Command, Control, and Communications (NC3) Enterprise Operations, Joint Electromagnetic Spectrum Operations, Global Strike, Missile Defense, Analysis and Targeting, and Missile Threat Assessment. Our mission is to deter strategic attack and employ forces as directed, to guarantee the security of the Nation and assure our allies and partners. The command has three priorities. First, above all else, we will provide strategic deterrence for the Nation and assurance of the same to our allies and partners. Second, if deterrence fails, we are prepared to deliver a decisive response, decisive in every possible way. Third, we will do this with a modern resilient, equipped, and trained combat-ready force. To execute our assigned responsibilities, the men and women of USSTRATCOM operate globally, as a joint force, in all warfighting do-

mains, and with our allies and partners to address strategic challenges facing our Nation.

As Congress is well aware, the past year's pandemic challenged us in ways we never expected. Within days, the command transitioned from approximately 30 teleworking personnel to thousands, without missing a beat. I am pleased to report USSTRATCOM remained, and continues to be fully mission capable. This is a true testament to the resilience of our workforce, our command and control (C2) systems, and the support from our base and local community.

Peace is our profession . . . continues to be the USSTRATCOM motto. It serves as an acknowledgement that the Nation leads first with diplomacy as military force should be the last resort. The three dots are intentional to remind potential adversaries that if tested, the command enables the President to lead the Nation from a position of strength. Fundamental to our survival as a nation is a safe, secure, and effective nuclear triad; a reliable and modern nuclear command, control, and communications (NC3) architecture; and a responsive nuclear weapons infrastructure. These elements deter adversaries from conducting nuclear and non-nuclear strategic attacks against our Nation, and assure our allies and partners. As Secretary Austin testified, strategic deterrence, and within that nuclear deterrence, is the highest priority mission of the Department of Defense.

Strategic deterrence is the foundation of our national defense policy and enables every U.S. military operation around the world. Any individual strategic policy or capability decision made absent an understanding of the effect on the overall strategy could potentially increase the risk of deterrence failure. *If strategic deterrence fails, little else . . . no plan or capability, works as designed.*

USSTRATCOM will fully support ongoing reviews of strategic and nuclear policy with a goal of reducing the role of nuclear weapons in our defense strategy while adjusting to the operational implications of policy choices. Presidential and Departmental guidance defined by the National Defense Strategy (NDS), National Military Strategy (NMS), and by our nuclear policy depend on a strategic deterrent required to meet the challenges of the changing global security environment. This is not possible without stable, consistent, and on-time appropriations and support to program modernization by Congress. Sustainment and modernization of our nuclear forces, weapons complex, and requisite NC3 capabilities has transitioned from something we should do, to something we *must* do. *Based on current programmatic and acquisition timelines, if we find out we were wrong, decisions to divest or delay could take ten to fifteen years to recover and render the Nation unable to respond to advancing threats. Any decision to delay or defer recapitalization requires us to be absolutely sure, for the next 40 years, that we won't need that capability to deter threats, many of which we can't predict.*

OUR PEOPLE

USSTRATCOM's military and civilian professionals are the driving force behind Strategic Deterrence. The command is committed to building a diverse and inclusive workforce with the needed skills to meet current and future security environment demands, as we pursue innovative ways to recruit and retain top talent. Workforce enhancements through internships, development and mentorship programs, academic partnerships, and our Women in Leadership program are just a few examples of ways the command attracts software, nuclear engineering, scientific, and strategy and policy skill sets into service.

USSTRATCOM works closely with world-class universities and education systems, through our Academic Alliance—a partnership of over 60 institutions. The command advocates to incorporate deterrence history and theory, allied perspectives, the importance of treaties and alliances, an understanding of capabilities, delivery systems, weapons, and C2 capabilities into curriculums. The aim is to enhance understanding of our mission and the importance of strategic deterrence while further developing the Nation's next generation of national security professionals. Together with Professional Military Education, this creates a strategic advantage necessary for interoperability across Joint and Allied forces.

Joint Force interoperability is further enhanced through USSTRATCOM's joint exercises and wargames. Despite the challenges posed by the pandemic, the command completed over 350 events specifically designed to produce trained and ready forces capable of operating across the spectrum of conflict. Whether done virtually or in person, exercises and wargames are critical command enablers to sustaining readiness and enhancing our ability to rapidly project national military power globally. They are also a primary mechanism in strengthening relationships with allies and partners.

DYNAMIC STRATEGIC ENVIRONMENT

Strategic Competition demands we be ready for any threat, in any domain, at any time. Potential adversaries are building advanced nuclear capabilities, fielding increasingly capable conventional forces, and exploiting seams below the level of armed conflict, in an attempt to gain strategic advantages in pursuit of their national objectives. China and Russia are challenging our strength through a wide array of activities that warrant a concerted and integrated whole-of-government response. *For the first time in our history, the Nation is on a trajectory to face two nuclear-capable, strategic peer adversaries at the same time, who must be deterred differently. We can no longer assume the risk of strategic deterrence failure in conflict will always remain low.*

This is not to say strategic competition will end in armed conflict; rather, in the event of conflict with a near-peer, nuclear-armed adversary, the risk of a strategic deterrence failure increases. We must maximize our ability to prevent strategic deterrence failure and find ways to reduce the risk of miscalculation in a crisis, by engaging all elements of national power to effectively communicate our resolve to potential adversaries. The command stands ready to support diplomatic efforts as a tool of first resort, utilizing innovative and reliable ways to deter strategic threats and set favorable conditions to shape the global environment.

China

Under a veil of secrecy, China continues to advance comprehensive military modernization programs for the People's Liberation Army (PLA), building a robust lethal force with capabilities spanning all domains. This modernization includes nuclear weapons and forces, and supports longstanding goals to establish regional hegemony, deny U.S. power projection in the Indo-Pacific region, and supplant the United States as the security partner of choice. While China's nuclear stockpile is currently smaller (but undergoing an unprecedented expansion) than those fielded by Russia and the United States, the size of a nation's weapons stockpile is a crude measure of its overall strategic capability. To fully assess the China threat, it is also necessary to consider the capability of the associated delivery system, command and control, readiness, posture, doctrine and training. By these measures, China is already capable of executing any plausible nuclear employment strategy within their region and will soon be able to do so at intercontinental ranges as well. *They are no longer a "lesser included case" of the pacing nuclear threat, Russia.*

These capabilities bring into question China's stated "No First Use" policy declaration and implied minimum deterrent strategy. Behind a complete lack of transparency, China is rapidly improving its strategic nuclear capability and capacity, with rapid growth in road mobile production, doubling the numbers of launchers in some ICBM brigades, deployment of solid fuel intercontinental ballistic missile (ICBM) silos on a potentially large-scale, an added air leg, and are well ahead of the pace necessary to double their nuclear stockpile by the end of the decade. This is all in keeping with Chinese President Xi Jinping's 14th Five-Year Plan's (2021–2025) call to "strengthen strategic forces" and "accelerate the creation of high-level strategic deterrence."

In the very near-term China will possess a credible nuclear triad, supported by its growing stockpile and weapon systems capable of multiple independently targetable reentry vehicles (MIRV). The PLA is developing and fielding precision strike nuclear delivery systems such as the dual use DF–26 intermediate-range ballistic missile (IRBM) and survivable road-mobile ICBMs with the CSS–10 mod 2 (DF–31A) class missile capable of striking locations within the continental United States. The CSS–20 (DF–41) became operational last year, and China has stood up at least two brigades. Enhancing the PLA Air Force's newly reassigned nuclear mission, the redesigned H–6N is capable of carrying a nuclear capable air-launched ballistic missile (ALBM) and conducting air-to-air refueling for greater range and flexibility. China's six, second-generation JIN-class ballistic missile submarines (SSBN) with JL–2 submarine launched ballistic missile (SLBM) provide a viable sea-based deterrent capable of maintaining continuous at-sea presence.

While China keeps the majority of its forces in a peacetime status, increasing evidence suggests China has moved a portion of its nuclear force to a Launch on Warning (LOW) posture and are adopting a limited "high alert duty" strategy. To support this, China continues to prioritize improved space-based strategic early warning, and command and control as specific nuclear force modernization goals. Their networked and integrated platform advancements will enable skip-echelon decision-making processes and greater rapid reaction. This shifting posture is particularly unsettling, considering the immature nature of Chinese strategic forces and compressed timelines needed to assess and frame a response, increasing the potential

for error and miscalculation. Collectively, China's strategic nuclear modernization expansion raises troubling concerns and complements the conventional capability growth reported by INDOPACOM and other Combatant Commands.

Their conventional and strategic initiatives across the air and missile defense, anti-surface, anti-submarine, cyber, and space increase its ability to project counter-intervention and control further from their mainland throughout the Indo-Pacific region. To deter and deny foreign regional force projection, China is developing a range of new ballistic missile defense technologies in support of anti-access/area denial (A2AD) and tested a mid-course interceptor in February 2021. Within the last two years the PLA launched over 400 ballistic missiles (more than the rest of the world combined for non-wartime uses) to test and evaluate weapon system performance, and improve combat force effectiveness.

China recognizes the necessity of survivable command and control capabilities to more robustly support joint operations, speed of decision making, and cyber operations in modern warfare. The PLA placed a high priority on modernizing joint C2, logistics, and command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems in part to resemble Western-style joint C2 systems. The PLA Strategic Support Forces (SSF) are taking steps to combine and restructure cyber forces into reconnaissance, attack, and defense capabilities to better support military operations. Then, while Beijing insists that the Chinese military does not engage in cyberespionage, continued theft of intellectual property translates to significant wealth losses with significant strategic implications.

My best military advice is to offer caution, observe their actions which speak louder than words, take steps to credibly deter armed conflict, and reject Chinese policies or actions that threaten the international rules-based order or undermine regional and global stability. We must remain postured to counter Chinese coercion and subversion, assure our regional allies and partners, and protect our national security interests as international law allows.

Russia

Russia continues to seek ways to enhance and reinforce its great power status through actions designed to polarize and erode United States leadership in international affairs. It continues to pursue a sphere of influence over and beyond its periphery and interfere with regional states' sovereignty, especially in matters of military security and economics. Over the last decade, Russia also focused on national preparedness through strategic civil defense readiness exercises, demonstrating interoperability between civil and military organizations through wartime scenarios.

Russia pursued a strategic partnership with China through bilateral and multilateral military exercises such as KAVKAZ–2020, focused primarily on improved military-to-military relations at the highest levels. *Prudence dictates military planners consider and account for the complex threat environment, enabled by the strategic cooperation of these two nuclear-armed States with global military reach and shared multi-domain offensive capabilities.*

Russia's determined military and nuclear modernization campaign across its strategic triad and dual-use systems is close to completion. Over the last decade, Russia has recapitalized roughly 80 percent of its strategic nuclear forces, strengthening its overall combat potential with an imposing array of modernization efforts and novel weapons programs designed to ensure a retaliatory strike capability by all three triad legs. Upgrades incorporate new technologies into weapons systems, such as the nuclear-armed ICBM launched Avangard hypersonic glide vehicle. Other weapons programs, such as the Poseidon nuclear-powered and nuclear-armed underwater vehicle, and the Skyfall nuclear-powered and nuclear-armed cruise missile, threaten to redefine Russia's nuclear force with asymmetric strategic weapons capabilities never before fielded. In October 2020, Russia successfully tested its multi-role Tsirkon hypersonic anti-ship missile with land attack capability. These new capabilities are specifically designed to thwart ballistic missile defenses, challenge deterrence, and target our capabilities, increasing risk to allies, partners, and the United States Homeland.

Russia's strategic force includes a broad range of weapons, many of which are dual use or multi-role, and can be rapidly modified to be nuclear capable. As many as 2,000 nuclear weapons are not captured by existing arms control agreements; theater and tactical nuclear weapons are entirely outside of any treaty framework. While the extension of New START provides helpful transparency and predictability for much of Russia's deployed strategic arsenal, a considerable level of uncertainty remains regarding the scope and disposition of Russia's nuclear arsenal, including non-deployed nuclear weapons and its novel systems that are not accounted for under the treaty. This is troubling given a robust nuclear weapons production com-

plex capable of producing hundreds of warheads per year, enabling Russia to increase its overall nuclear stockpile—driven primarily by projected increases in unconstrained nuclear weapons—while our production capacity remains essentially non-existent. I stand ready to offer my best military advice in support of DOD and State Department efforts to make progress on follow-on arms control agreements.

Clearly, nuclear weapons remain a critical element of Russia's security strategy and its willingness to contemplate first-use, serves as a core strategic consideration. Russia's 2020 nuclear deterrence policy declared it may use nuclear weapons in response to a conventional attack, if the state's existence is threatened. A determined pursuit of non-strategic nuclear capabilities indicates a troubling readiness to rely on these weapons in a conventional overmatch situation. The aim is to deter the United States and our allies by offsetting its conventional inferiority and attempt to terminate conventional conflict on terms acceptable to Russia. Therefore, our nuclear forces must include a sufficient range of capabilities and attributes such that Russia never mistakenly perceives any advantage from using nuclear weapons at any threshold of violence.

North Korea and Iran

North Korea: North Korea remains a security challenge to the United States and our allies. It continues conducting activities that threaten regional stability and defy international norms. North Korea has tested ICBMs designed to strike the entire continental United States and has a large inventory of theater ballistic missiles. USSTRATCOM supports DOD and State Department efforts to coordinate with regional partners, reduce military tensions, and engage diplomatic efforts towards achieving the complete denuclearization of North Korea.

Iran: Iran's policy of arming and employing proxy forces with advanced conventional weapons ensures it will remain a destabilizing force in the Middle East. Iran possesses the largest ballistic missile force in the region. Robust research and development continues to extend the range and improve performance of various ballistic missile types, several of which can range Israel and the Gulf countries. In April 2020, Iran conducted a space launch incorporating and testing technology interchangeable with ballistic missiles. It also continues to exceed low enriched uranium stockpile limits and resumed enriching uranium at higher than acceptable levels. Iran's actions threaten global commerce, security, and stability.

STRATEGIC DETERRENCE IN THE 21ST CENTURY

Deterrence fundamentals against such threats have not changed. We drive to deny any adversary their aim, or impose a cost greater than what they seek, such that the benefit of restraint outweighs the perceived benefit of their possible action. These deterrence fundamentals apply from gray zone activities through nuclear use. *The spectrum of conflict today, however, is neither linear nor predictable.* We must account for the possibility of conflict leading to conditions which could very rapidly drive an adversary to consider nuclear use as their least bad option.

To avoid strategic deterrence failure we must reinstitute a critical forgotten lesson that *deterrence operates continuously from peacetime, through the gray zone, worldwide, across all domains, and into conflict.* It requires an integrated approach from the entire Department, across the whole-of-government, and in cooperation with allies and partners. USSTRATCOM works with the other Combatant Commands, Services, and Allies to integrate deterrence into all plans and operations. In 2020, USSTRATCOM executed six combined Bomber Task Force (BTF) deployments and included Allied participation in our Tier 1 Globally Integrated Exercises, giving us the best opportunity to strengthen communications, operational relationships, and overcome unforeseen issues.

SAFE, SECURE, RELIABLE AND EFFECTIVE NUCLEAR FORCE

USSTRATCOM's requirements are based on what is needed to meet Presidential direction. As reaffirmed by every Presidential Administration over the past sixty years, a safe, secure, and effective nuclear force remains the most credible combination of capabilities to deter strategic attack. Current programs of record have been repeatedly shown to be the best way to meet those requirements.

The Nation requires a fully modernized nuclear force and supporting infrastructure to ensure the solemn obligation to protect the security of the American people is upheld. Each element of our nuclear force has unique capabilities, but it is the combined attributes provided by each leg of the triad that together allow the command to execute our national security strategic guidance. I want to be clear, each piece of the triad is essential . . . but they are also complementary, underpinning U.S. military operations around the world.

Every Operation Plan (OPLAN) in the Department and every capability assumes that strategic deterrence will hold. Therefore, we must recapitalize the triad to ensure the Joint Force can operate when, where, and as required to defend our national interests. We have reached a point, however, where end-of-life limitations and underinvestment in our strategic deterrent and supporting infrastructure—coupled with adversaries who are modernizing and fielding increasingly capable forces—leave no remaining margin for capability replacement. *We cannot continue to life-extend our leftover Cold War era weapons and systems indefinitely, and successfully prevail in strategic competition—their credibility will be questioned. I stand ready to offer my best military advice to support Secretary Austin in accomplishing strategic and policy objectives, to ensure strategic reviews on sustainment and modernization are well informed of the impacts to strategic deterrence and stability.*

LAND-BASED TRIAD COMPONENT

The nation's ICBM force is and remains the most responsive leg of the triad. ICBM geographic dispersion presents an intractable targeting problem, complicating adversary strategies. For example, *without United States ICBMs China becomes a strategic nuclear peer.* These missiles are capable of holding a wide range of targets, to include emergent and time sensitive targets, at risk. They are survivable to all but a massive nuclear exchange. They are also the least expensive to maintain and possess the highest day-to-day readiness.

Requirement for Minuteman III (MM III) Sustainment

The MM III continues to provide a highly reliable and secure deterrent capability. While Minuteman has successfully served our Nation since 1962, delaying needed modernization for the past 20 years resulted in aging components, asset attrition, and declining infrastructure requiring a comprehensive weapon system replacement.

Air Force analysis concluded another life extension would be more costly than recapitalization and would not address future technical challenges and threats. USSTRATCOM supports ongoing sustainment programs necessary to keep the MM III viable and effective until its replacement, the Ground Based Strategic Deterrent (GBSD), begins fielding in 2028 and reaches full operational capability in 2036.

Requirement for Ground Based Strategic Deterrent

USSTRATCOM is confident GBSD will meet requirements, reduce sustainment costs, and maximize day-to-day readiness. It is the best approach to ensure the most responsive leg of the triad remains reliable and credible in response to the evolving strategic environment. During a recent visit to the GBSD Program Office, I was impressed with the Air Force's pursuit of innovative development approaches to deploy GBSD on time, as it remains a USSTRATCOM priority.

AIR-BASED TRIAD COMPONENT

Bombers are among the most flexible, visible, and versatile leg of our Nation's delivery platforms. Bombers offer both nuclear and conventional deterrence and employment options, enhancing force availability and execution. As demonstrated by successful BTF missions, this stabilizing capability provides a wide variety of deterrence options to the President, signals unwavering resolve to our adversaries, and assures the Nation's allies and partners.

Over the past year, USSTRATCOM utilized *BTF missions as the iconic example of Dynamic Force Employment.* In doing so, we dramatically increased the operational readiness of the crews, improved integration with the Joint Force, Allies and partners, practiced procedures for nuclear weapons and supporting infrastructure employment, and regularly exercised our NC3 enterprise. Full funding for these strategic aircraft, and associated weapons and communications systems is imperative, as many approach or are beyond their planned service life.

Requirement for B–52 and B–2 Sustainment

B52: The B–52H is a 60-year-old platform, projected to remain in service for another three decades. To address both maintenance and operational challenges, it must undergo critical modernization upgrades in response to evolving threats. Its 1960s-era TF–33 engines are scheduled for upgrade through the Commercial Engine Replacement Program (CERP), enabling longer unrefueled range while eliminating parts obsolescence issues plaguing the current engines. The B–52 Radar Modernization Program (RMP) will replace its increasingly inoperative, legacy radar with a digital phased array system to allow continued operations in GPS denied environments. Modernized NC3 systems are also critical to B–52 operations to ensure communications continuity. Both RMP and NC3 upgrades require continued support and funding to remain on schedule.

B–2: The B–2 provides unmatched capability as the only heavy-payload, penetrating stealth bomber in the world able to hold at risk heavily defended, hard, and deeply buried targets. These unique attributes require the execution of planned sustainment programs to ensure survivability, reliability, and mission effectiveness until the B–21 is fielded. Ongoing sustainment activities include planned communication upgrades and low-observable maintenance. In particular, the Air Force must accelerate integration with advanced enabling capabilities to support the B–2 in denied environments.

Requirement for B–21

The B–21 Raider will be the future bomber force. When fielded, the B–21 will provide warfighters with increased survivability and flexibility to attack high-value strategic targets worldwide. The Raider will deliver both nuclear and conventional weapons in support of national objectives. It is critical this major recapitalization effort remains on schedule and on budget to prevent operational shortfalls within the bomber force structure.

Long Range Standoff (LRSO) and B61–12

The air-delivered nuclear weapon portfolio enables deterrence of strategic attack via our bomber force. Currently composed of the Air Launched Cruise Missile (ALCM), the B83 gravity bomb, and the B61 family of weapons, this portfolio provides both standoff and direct attack munitions to meet operational requirements. Continued monitoring and stockpile surveillance is necessary to ensure these weapons remain reliable until replaced.

LRSO: The LRSO missile will replace ALCM as the Nation's only air-delivered nuclear cruise missile. I want to be clear, this capability must be protected as it is vital to USSTRATCOM's ability meet mission requirements. I view LRSO as the most cost-effective approach to ensure a credible and effective triad. It offers the best opportunity to hedge against operational risks in the event other triad modernization efforts are delayed. It will penetrate and survive against advanced air defense systems to which its predecessor, the ALCM, is losing ground. When fielded it will outpace threat technologies, enhance deterrence and assurance, and achieve a wide array of targeting objectives for the foreseeable future. LRSO allows a single bomber to cover larger geographic areas which would otherwise require additional B–21 bombers, KC–46 tankers, B61 gravity bombs, and decades of supporting infrastructure. Eliminating this critical capability would require additional land and sea based ballistic missiles to hold required targets at risk. A calculated yet rapid transition from ALCM to LRSO is planned to optimize deterrence, service life, and the capabilities of both weapons.

Tanker Requirements

All bomber missions require a robust and reliable tanker force. The KC–46 is planned to replace a portion of the aging KC–135 fleet in the coming years. Despite fielding delays USSTRATCOM strongly supports ongoing Air Force efforts to correct and mitigate manufacturing and technical deficiencies, and efforts to modernize and recapitalize the entire tanker force in response to mission needs.

SEA-BASED TRIAD COMPONENT

The nuclear-powered ballistic missile submarine (SSBN) is the Nation's most survivable and enduring nuclear strike platform. The SSBN contributes to deterrence and assurance messaging through partial or full generation of our fleet. With the intercontinental range Trident II D5 missile, our SSBNs patrol the world's oceans virtually undetected, providing an assured response capability in any scenario. This assured second-strike capability address deterrence gaps in ways unique from other legs of the triad. When paired with its survivability, this crucial capability gives the President significant latitude for response options.

Requirement for Columbia-class SSBN

The *Ohio*-class SSBN cannot be further extended and will begin retiring from service in just six years. This submarine class has already been extended to an unprecedented 42 years (no individual U.S. Navy submarine has been in service longer than 37 years) and will continue to face sustainment and readiness challenges until it is replaced by the *Columbia*-class SSBNs. While the command could use more, procurement analysis determined at least 12 *Columbia*-class SSBNs are absolutely required. This minimum capability allows USSTRATCOM to meet our at-sea requirement during the most limiting maintenance intensive times throughout its service life. On-time delivery of the *Columbia*-class SSBN remains the Navy's number one shipbuilding priority.

Requirement for Trident Sustainment and Modernization

Given the importance of an uninterrupted sea-based strategic deterrent, investment in the future SSBN Strategic Weapon System (SWS) is vital. The Trident II D5 weapon system has been life extended (D5LE) to support the remaining years of the *Ohio*-class SSBN and enable deployment on the first *Columbia*-class hulls. A second D5 life extension (D5LE2) ensures continued sea-based strategic deterrence through the 2080s. D5LE2 will utilize reliable high performing design elements and components from the first life extension, to mitigate cost and technical risks.

SLCM–N

To enhance flexibility and diversity of our nuclear forces, USSTRATCOM supported the reintroduction of a modern nuclear sea-launched cruise missile (SLCM–N) to address regional deterrence challenges from Russian and Chinese nuclear capability advancements. The SLCM–N complements the low-yield SLBM to provide assurance to our allies through tailored response options in vast operating areas where forward basing may not be possible. Limited and graduated United States response options, such as SLCM–N and low-yield SLBM, provide a more credible deterrent to limited attack against the United States and our Allies and partners than relying primarily on the threat of large-scale nuclear responses. Without this capability adversaries may perceive an advantage at lower levels of conflict that may encourage limited nuclear use. An analysis of alternatives (AOA) is underway for SLCM–N. I anticipate that this AOA will inform discussions in the context of an anticipated new posture review.

Integrated Undersea Surveillance System (IUSS)

To ensure the viability of our current and future SSBNs, it is imperative to address security threats in the undersea domain. Advancement in Russian submarine stealth and detection necessitates continued Integrated Undersea Surveillance System (IUSS) recapitalization efforts. This capability is vital to maintaining advantages in the undersea domain, ensure survivability of our sea-based strategic deterrent, and protection of the homeland.

NUCLEAR COMMAND, CONTROL, AND COMMUNICATIONS (NC3)

NC3 is the critical link required to provide assured communications between the President and the forces. In 2018, the Secretary of Defense consolidated and delegated lead NC3 responsibility to the commander, USSTRATCOM. As the NC3 Enterprise Lead, I execute increased authority for operations, requirements, systems engineering, and integration oversight through the NC3 Enterprise Center (NEC). The NEC, operating as a separate but aligned organization, oversees and manages NC3 to ensure mission readiness through data-driven, risk-informed operations, while propelling accelerated development and delivery of a threat-informed "next generation" NC3 enterprise.

Substantial progress has been made in the two years following designation, in what has been a team effort across the entire Department. Specifically, the NEC improved the ability to ensure NC3 supports the Nation's Nuclear Command and Control (NC2) at any time, by improving operational reporting and building a culture of readiness. The team laid the groundwork for the future enterprise by directing investments in NC3 programs and cyber defense, creating an engineering framework for designing and testing new architectures, engaging industry on best practices and technology, and advancing a broad intelligence community focus.

The enterprise focus for the coming year remains on sustaining readiness while pursuing the next generation of NC3 by capitalizing on integrating concepts, revolutionary changes in technology, innovative practices, and cyber resilient and protected capabilities.

Strategy to Modernize NC3

The NEC is developing the next generation NC3 system by executing a multi-pronged strategy approach, organized by four vectors. The first focuses on programs of record encompassing budget and acquisition lifecycle processes to deliver, modernize, and sustain future core capabilities. The second assesses demonstrations, experiments, and tests aimed at enhancing discovery and development of innovative technology approaches, to transform existing NC3 programs and operations. The third reviews and revises policies, postures, Tactics, Techniques and Procedures (TTPs) to streamline enterprise guidance and efficiently achieve operational outcomes. The fourth expands the use of critical technology enablers such as artificial intelligence, digital engineering, and modeling and simulation.

It is important to understand NC3 modernization is not a product or a "thing" with a long service life like a delivery platform or warhead—rather it is a process of rapid continuous, incremental network capability improvements. The first evolution is referred to as "NC3 Next Generation Increment 1" and represents currently funded programs of record. This first increment improves our posture in space, improves hardness to emerging cyber and cryptographic threats, shifts our dependency on unsustainable legacy systems, and increases resilience by enabling dynamically reconfigurable architecture.

Survivable NC3 Legacy Modernization

USSTRATCOM and the NEC are aligned with the Services to modernize our survivable legacy NC3 systems integrated with our aging airborne C2 platforms such as the E–4B National Airborne Operations Center (NAOC) and E–6B Airborne Command Post (LOOKING GLASS)/Take Charge and Move Out (TACAMO) aircraft. Other efforts include our space-based protected satellite communication (SATCOM) capabilities such as Advanced Extremely High Frequency (AEHF) that provides survivable communications for Presidential voice conferencing and nuclear force direction.

Upgrading Very Low Frequency (VLF) and Low Frequency (LF) survivable communications is also necessary to provide extended range, greater protection, and more rapid transmission times in response to emerging adversarial threats. Current efforts seek to modernize and transform traditional VLF/LF systems to state-of-the-art capabilities which are interoperable across Service lines and infuse improved protection features for tactical and strategic applications. The challenge is rapidly incorporating VLF/LF architecture enhancements to ensure robust and layered communication services from the President to fielded forces during all phases of conflict.

NC3 Cybersecurity

I want to be clear, I am confident in today's NC3 enterprise cybersecurity posture and resilience. However, as recent events demonstrate, the adversary continues to seek new avenues of attack on our Nation's critical infrastructure. USSTRATCOM is aligned with USCYBERCOM, USSPACECOM, NSA, and the Service components to respond to and operate through adverse cyber conditions. We are taking actions to enhance cybersecurity resilience for systems under development by adopting advanced technologies and best practices, and designing in cyber protections from the start. This forward facing cyber protection approach enables persistent defense throughout the lifecycle of these systems.

Cybersecurity must be a prioritized investment to ensure ongoing modernization initiatives remain operationally relevant. When cyber protections are complemented with dedicated enterprise-level sensing and monitoring capabilities, they provide a holistic cybersecurity posture enabling timely, data-driven responses to emerging threats.

NUCLEAR WEAPONS AND SUPPORTING INFRASTRUCTURE

I look forward to working with the Department of Energy (DOE) and National Nuclear Security Administration (NNSA) to ensure our weapons complex and supporting infrastructure remains viable into the future. Although safe, secure, reliable, and effective today the nuclear weapons stockpile and supporting infrastructure are rapidly aging into obsolescence. Today the majority of our weapons exceed or will soon reach their planned retirement dates. Projected modernization efforts provide a path to maintain a reliable and effective force, but are not expected to complete until well into the 2040s. Failure to execute these programs will continue to transfer programmatic risk to the DOD as operational risk to fielded forces, adding to the risk the Nation already faces. If this trend is not reversed, I am concerned the command will be unable to meet national-level policy objectives.

Infrastructure Improvements

Stockpile modernization depends on the Nuclear Security Enterprise (NSE) infrastructure. Annual budget deliberations increasingly elevate concerns about the ability of the NNSA to meet the Nation's nuclear force requirements. After the closure of the Rocky Flats Plutonium pit fabrication facility in the early 1990s, the Nation no longer had the capability to produce key components, turning instead to limited warhead refurbishments to sustain the stockpile. As a result, component and materials manufacturing needed to produce new nuclear weapons effectively stopped and much of the infrastructure atrophied. Then, shifting budget priorities over the past 30 years delayed needed weapons and infrastructure modernization programs, contributing to erosion of critical nuclear force capabilities and capacities. Today's NSE infrastructure, which the command relies on to sustain strategic deterrence, con-

tinues to decline and requires investments for sustainment and immediate modernization. Facility condition, loss of key capabilities, and constrained capacities also limit the NNSA's timely response to unforeseen technical, geopolitical, programmatic, or operational developments. As such, the NNSA is now challenged to simultaneously complete one limited refurbishment (B61–12 LEP) and one maintenance activity (W88 Alteration). This is concerning as recapitalizing the remaining force will require the capacity to concurrently execute up to four modernization programs to meet operational requirements.

Progress has been made with close NNSA collaboration and budget transparency, but much of the damage to the infrastructure and personnel has already been done. As a result, many of the modernization and sustainment efforts (which typically require 10–15 years to execute) have zero remaining schedule margin and some are already late-to-need. *If the Nation does not continue to address these concerns, no amount of money will be able to adequately mitigate operational risks associated with key stockpile and infrastructure capability losses.* Long lead times needed to field modern replacement infrastructure require continued investments in future and enduring facilities and capabilities.

Today's nuclear complex relies on single production points and vendor sources, putting at risk our plutonium and uranium processing, high explosives manufacturing, and production of radiation hardened electronics. This provides few to no alternatives in the event of an unplanned production facility or vendor shutdown. In such an event, recovery of those production efforts could take many years.

Plutonium pit production is the biggest stockpile modernization issue—pits have not been produced at scale since Rocky Flats ceased production in 1989. As a point of comparison, our adversaries produce new pits in modern facilities at a rate many times greater than 80 per year; while most of our stockpile depends on pits that are, on average, over 50 years old and well past their design life. Accurately predicting aging plutonium performance with today's facilities and modeling capabilities is limited at best. We cannot study our way out of this problem. If we fail to recapitalize plutonium pit production now, we risk catastrophic failures given an infrastructure incapable of responding in a timely manner. Bottom line, re-establishing plutonium pit production is a "must do" and is foundational to stockpile modernization.

Additionally, while uranium component processing limitations are being remedied by the Uranium Processing Facility (UPF) project, we must also address facilities needed for manufacturing uranium components and radiation cases, producing lithium, and manufacturing trusted non-nuclear components.

Updated Stockpile Strategy

I applaud NNSA's initiatives to execute programs of record and W76 modification efforts. Their investment in advanced diagnostics, and key research and development activities reduce operational risks resulting from technical issues. Most warheads in today's stockpile are now scheduled to remain in service well beyond original design lives, thanks to engineering feats, ingenuity, and NNSA stewardship.

USSTRATCOM appreciates Congressional actions to fund NNSA's Fiscal Year 2021 Stockpile Management and Production Modernization programs (fully funding B61–12 life extension, W88 alteration, W80–4 life extension, W87–1 modernization, and W93 development). I specifically want to emphasize the importance of the W93 warhead modernization program. While the command could use it earlier, the W93 is a "just-in-time" development program to mitigate risk to the triad's sea leg. USSTRATCOM identified operational requirements including a modern warhead with reduced mass properties that improves operational flexibility and enables more efficient loading on *Columbia* with fewer numbers of missile tubes. Currently fielded SLBM warheads will begin to simultaneously age-out in the late 2030s, putting the DOD and NNSA in a position of having to modernize the entire SLBM warhead stockpile at the same time. To avoid this convergence, starting the W93 program now is key to maintaining our sea leg capabilities. It is also vital to our long-standing cooperative relationship with the United Kingdom.

NUCLEAR WEAPONS SAFETY AND SECURITY

MH–139A Helicopter

I appreciate Air Force efforts to deliver the MH–139A Grey Wolf. With support from Congress, the Air Force is poised to replace the existing UH–1N helicopter fleet with improved speed, range, endurance, and payload capabilities to ensure safe convoy escort and Emergency Security Response to the ICBM force.

Counter-unmanned Aircraft System

Rapid proliferation and growing technological sophistication of small unmanned aircraft systems (sUAS) are an increasing threat to the Nation's nuclear enterprise. Technology trends easily transform sUAS into increasingly capable weapons in the hands of state and non-state actors, and criminals with hostile intent. The Department continues to field counter-sUAS capabilities and are refining tactics, techniques, and procedures to address this developing threat.

GLOBAL STRIKE

Hypersonic weapons show promise to be the conventional complement the nuclear force needs to continue deterring adversaries and offers an opportunity to take further steps to reduce the number of nuclear weapons in our national security strategy. Developing and fielding hypersonic weapons has long been a USSTRATCOM requirement and a Department priority.

Conventional hypersonic weapons will fill an important role by providing options to hold high-value, time-sensitive and other targets at risk without crossing the nuclear threshold. They will enable responsive long-range, conventional strike options against distant and defended threats when other forces are unavailable, denied access, or not preferred.

Programs such as the Army Long Range Hypersonic Weapon (LRHW), Navy Conventional Prompt Strike (CPS), the Air Force Air-launched Rapid Response Weapon (ARRW), and the complementary intelligence, surveillance, and reconnaissance (ISR) field a family of hypersonic weapon systems in the early-to-mid 2020s. I am pleased with the progress to field a capability in the near-term and encourage continued commitment to accelerate production and fielding.

USSTRATCOM is prepared to command and control conventional hypersonic weapons immediately at initial operational capability. We will leverage existing planning organizations to integrate and synchronize hypersonic capabilities with other joint fires across all domains. Maturing concepts of operation, mission planning, and other system enablers are underway to ensure this transformational warfighting capability supports the NDS.

MISSILE DEFENSE

Missile defense endures as a critical component for comprehensive strategic and tailored regional deterrence. USSTRATCOM executes its responsibilities for coordinating global missile defense planning and operations support, including advocacy for capabilities and enhancements, and joint training and education in coordination with other Combatant Commands, Services, and Agencies. While current capabilities provide defense of the homeland against a rogue ballistic missile threat, a concerted effort and commitment is required to expand and improve existing capabilities for both homeland and regional missile defense. Potential adversaries continue to improve threat system capabilities and capacities, blurring missile defense operations across traditional regional boundaries. Mitigating trans-regional threats with increased range and lethality requires more than just active missile defense. Navigating this environment requires a broad approach and renewed emphasis on leveraging opportunities to negate missile threats prior to launch, during all phases of flight, and after impact.

Challenges remain in the Department's efforts to integrate limited defense resources and architectures for allied and partner interoperability. These critical assets protect against missile attacks on deployed U.S. Forces, preserve freedom of action by countering adversary anti-access/area denial tactics, and assists allies and partners to better defend themselves through traditional and asymmetric means. USSTRATCOM's NIMBLE TITAN wargame with participants from 24 countries and three international organizations, continues to advance multinational collaboration and operational integration efforts aimed at enhancing deterrence and defense concepts against potential attack.

NEW MISSILE WARNING FRAMEWORK AND REQUIREMENTS

Two essential elements of strategic deterrence are detection (early warning of ballistic and advanced missile threats) and integrated global planning. We are challenged to fully achieve these with current or planned terrestrial-based radar architectures alone due to geographic constraints and characteristics of future missile threats. Advanced Russian platforms challenge our sensor networks and are designed to operate without regard for the boundaries between United States combatant command areas of responsibilities. Therefore, it is essential to move beyond re-

gional approaches to addressing adversaries and challenges that are increasingly global in nature.

The command in coordination with USSPACECOM, USNORTHCOM, and the Services continues to examine, evolve, and exploit advanced technical and operational concepts, and break down institutional barriers inhibiting information flow. The command is focused on increasing decision space through a resilient joint all-domain architecture capable of correlating data from any sensor and using the best C2 system to employ the best-positioned shooter. This highly distributed and resilient architecture leveraging future space-based sensors, may be able to provide end-to-end detection, tracking, and discrimination of hypersonic glide vehicle, cruise and ballistic missile threats globally.

Layered Missile Defense

I applaud Congress's continued support for active defense capabilities to pace the threat and exploration of new capabilities like the Hypersonic Glide Phase Interceptor, high energy laser, and other directed energy technologies. As the Department pursues development of complements to existing Ground-based interceptor (GBI) capabilities, work continues using novel, cost effective options to counter the ICBM threat. The intercept of an ICBM by an Aegis ship utilizing the SM–3 Blk IIA missile in November 2020 highlights one opportunity to recapitalize existing technology. Additional examples include integrating existing sensors for tracking ballistic, hypersonic, unmanned aerial systems, and cruise missile threats.

Missile Defense Review—Progress

In accordance with the 2019 Missile Defense Review (MDR) the Department updated policies, responsibilities, and procedures for missile defense research, development, test and evaluation, procurement, operations, and sustainment. USSTRATCOM, working with the community of interest re-wrote the Warfighter Involvement Process (WIP) to incorporate MDR findings. Revisions align with the Department's budget process to maximize warfighter input to capability development and acquisitions, and seek timely delivery of missile defense capabilities. USSTRATCOM will continue to advocate for missile defense requirements through capability and utility assessments, and ensure operational tests and evaluations meet warfighter demands.

Joint Electromagnetic Spectrum Operations

USSTRATCOM's responsibility for Joint Electromagnetic Spectrum Operations (JEMSO) includes advocacy for electromagnetic warfare capabilities, contingency support, and joint planning and training for electromagnetic spectrum (EMS) operations. The Spectrum is an infinite battleground enabling all warfighting domains and functions. Adversaries like China and Russia have observed our use of and dependence on the EMS, and seek to challenge us by investing heavily in counter radar, navigation, communications, and data link technologies to erode our advantages. To counter this threat, the United States must regain technological advantages for our EMS systems and execute capabilities through dedicated organizational elements.

USSTRATCOM coordinated with the Secretary of Defense's Electromagnetic Spectrum Operations (EMSO) Cross Functional Team, in developing the EMS Superiority Strategy Implementation Plan to "Establish Effective EMS Governance." We are actively engaged to strengthen support and build an EMSO proponent organization for the Department. Efforts include establishing JEMSO Cells at Combatant Commands, creating an electromagnetic battle management (EMBM) system, and integrating fused data into the EMBM through a DOD enterprise database. The Joint Electromagnetic Warfare Center (JEWC) at USSTRATCOM established the first-ever Information Analysis and Fusion capability necessary to provide specific data for combatant command operational JEMSO cells to conduct battle management in spectrum operations. Continued Congressional support and sustained investments are critical to these initiatives.

CONCLUSION

As a global warfighting command, USSTRATCOM integrates strategy and capabilities to achieve strategic deterrence in today's dynamic threat environment. The command will continue to pursue success using globally integrated plans and operations within the Department, the whole-of-government, and with our allies and partners. I look forward to working with Secretary Austin to continue to maintain a safe, secure and reliable nuclear force into the future, and to ensure we strengthen strategic stability.

USSTRATCOM is home to the majority of the Department's Strategic Deterrence workforce intellectual capital. These professionals are dedicated to our national defense and we must continue to foster and grow this resource. With continued Congressional support and stable funding, USSTRATCOM will continue pacing the growing threats and develop the future force needed to execute the Department's top priority mission.

Efforts to sustain and modernize deterrent forces must continue. Our strategic forces underpin every military operation around the world, and *we cannot afford to delay given the increasing threats facing our Nation.* Today, we are at a tipping point where the cost of modernizing our strategic forces is negligible compared to the cost we will likely incur if our triad and supporting infrastructure are allowed to age-out completely. Strategic force modernization is an every-other-generation responsibility . . . today is our generation's turn to lead.

Chairman REED. Thank you, Admiral Richard.

General Dickinson, please.

STATEMENT OF GENERAL JAMES H. DICKINSON, USA, COMMANDER, UNITED STATES SPACE COMMAND

General DICKINSON. Good morning, ladies and gentlemen, and thank you, Chairman Reed, Ranking Member Inhofe, and Members of the Senate Armed Services Committee for the chance to speak with you today.

In describing the accomplishments of the Nation's newest combatant command, I am pleased today to represent the nearly 18,000 military, civilian, and contractor personnel supporting the United States Space Command's mission. In the United States Space Command, our power is absolutely our people. Having just finished the command's celebration of the Women's History Month, we proudly recognize our many female warfighters, one of whom came to us from the 16th Space Control Squadron, where she performed remarkably in our space superiority mission set. Another, a Navy aviator, now part of the Navy's new space cadre, built U.S. Space Command's analytic foundation for the development of our space architecture enterprise. A third established the joint fires element for our Joint Task Force-Space Defense, to integrate and synchronize space efforts for combatant commanders, and there are countless others that I could go on and on and on about this morning, but I will not, because of time.

Our diverse force will continue balancing combat readiness in preparing for the future. We will provide our people a working environment and culture that allows them to thrive while reaching their full potential. Our ideals reflect those of our oath to the Constitution of the United States and we remain committed to providing for the common defense, promoting the general welfare, and securing the blessings of liberty for ourselves and our posterity.

Today, I will offer you some insights into our plans for the future, which are aligned with the President's new Interim National Strategic Guidance. When I took command of U.S. Space Command last August, we were still filling out the structures of our new warfighting combatant command for space.

As I outlined in my written statement, we have made tremendous progress since then, to include further development of our two functional component commands and establishment of all of our service component commands, significantly advancing warfighting capability in space domain, all while continuing to support the Joint Force with exquisite space capabilities.

While largely focused from the geosynchronous build to the last tactical mile on Earth, we are expanding our focus to keep pace with our Nation's push into the cislunar region and to the Moon and Mars and beyond.

China's space enterprise continues to mature rapidly, presenting a pacing challenge for us. They invest heavily in space with more than 400 satellites on orbit today. China is building military-space capabilities rapidly, including sensing and communications systems and numerous anti-satellite weapons, all the while, China continues to maintain their public stance against the weaponization of space.

Similarly concerning, Russia's published military doctrine calls for the employment of weapons to hold United States and allied space assets at risk. For example, similar to the Russian space-based weapons test in 2017, Russia recently conducted another test of a space-based anti-satellite weapon. Additionally, the December 2020 test of a direct-assent anti-satellite weapon demonstrates that even as Russia aims restrict the capabilities of the United States, they clearly have no intention of halting their own ground-based or on-orbit counter-space weapons systems. Russia currently has close to 200 satellites on orbit and could double that by 2030.

In addition to this activity, on the part of our competitors, we are observing exponential growth in the commercialization of space. We currently track a challenging 32,000 objects in space. Nearly 7,000 of those objects are active or retired satellite payloads. Among the roughly 3,500 active satellites, the three largest single constellations belong to the commercial companies: SpaceX's constellation for broadband internet capabilities, Planet Labs' Earth-imaging constellation, and Spire Global's space-to-cloud data analytics constellation.

Overlaying this new global security landscape on the already complex operating environment of space demands a new level of awareness on our part. Given that the President's Interim National Security Strategic Guidance calls for, and I quote, ensuring the safety, stability, and security of outer-space capabilities, USSPACECOM is focused on my number-one priority of enhancing existing and developing new space-awareness capabilities. Space domain awareness gives us the insight into activity throughout the space domain, including potential adversary activities, but perhaps more importantly, insight into the intent of those potential adversaries, too. Space domain awareness provides decision-quality information to combatant commanders and the national command authorities to ensure we can provide viable military options with the appropriate decision space throughout the spectrum of operations from deterrence to warfighting.

In order to most effectively accomplish our assigned missions, U.S. Space Command has assessed our current capabilities and developed the requirements necessary to expand that capability where needed to meet our mission imperatives. We have passed those requirements along to the services and the Department of Defense, in general. Our intent is to build the appropriate space operational architecture designed to achieve full operational capability, backed by a team of warfighters, who can outthink and outmaneuver our adversaries.

While engaging daily in a competitive environment, our primary goal remains to deter a conflict that begins in or extends into space. So, with the help of this Committee and all of Congress, we will achieve that ultimate objective and ensure that the United States and our allies will never have a day without space.

Thank you very much this morning. I look forward to your questions.

[The statement of General Dickinson follows:]

PREPARED STATEMENT BY GENERAL JAMES H. DICKINSON

INTRODUCTION

The establishment of United States Space Command (USSPACECOM) as the Combatant Command solely focused on protecting and defending U.S. space operations and the American way of life demonstrates the priority America places on space. Our mission is to assure the delivery of space-based services to the Nation, our allies and global security partners, and warfighting superiority for conflict extending to space. An incredibly talented Joint Force and interagency team operating around the world accomplishes this unique and critical task. I am honored and thankful to the President, Secretary of Defense, and the Chairman, Joint Chiefs of Staff for entrusting me with leading this team of warfighters. I am also thankful for the unwavering support of Congress in providing the USSPACECOM team with the necessary resources for this critical mission.

President Biden described his priorities in the March 2021 Interim National Security Strategic Guidance, including defending the underlying sources of American strength and promoting a favorable distribution of power to deter adversaries. I have outlined my key tasks to support the Interim National Security Strategic Guidance and accomplish the USSPACECOM mission in my Commander's Strategic Vision. As always, underpinning this vision is our focus on caring for our most important asset—our people and their families. Our command attracts the best and brightest across the Department of Defense, intelligence community, and civil society, resulting in a dynamic and diverse team of space professionals. In fact, during International Women's month we featured many of the amazing women of USSPACECOM—both military and civilian, including operations leaders, division chiefs, senior enlisted leaders, and many other key roles. The diversity in our ranks is one of our greatest strengths. Our people will advance our critical mission through innovative approaches to accomplishing those key tasks, which include: (1) understanding our competition; (2) building the command to compete and win; (3) maintaining key relationships; (4) maintaining digital superiority; and (5) integrating commercial and interagency organizations. With our focus on these priorities, we will achieve our end state goal of a team of warfighters who outthink and outmaneuver our adversaries and enemies, and if necessary, win through space combat power—so that there is never a day without space.

THE U.S. MUST RESPOND TO A RAPIDLY CHANGING SPACE SECURITY ENVIRONMENT

The American way of life depends on reliable access to the space-based capabilities that provide the foundation of our economic security and enable our Joint Force to conduct sustained military operations in all domains. Every lever of national power in the new Joint Doctrine Note 1—18 "MIDFIELD" model—Military, Informational, Diplomatic, Financial, Intelligence, Economic, Law, and Development—is reliant upon space-based capabilities. Every element of our Joint Warfighting Concept as executed through Joint, All-Domain Operations is dependent on space-based capabilities. The ever-increasing challenge posed by adversaries against those capabilities led to the necessary creation of USSPACECOM and the United States Space Force. We must continue to grow the capabilities of these new organizations charged with protecting and defending our interests in space.

This extensive reliance on space creates potential vulnerabilities that competitors and adversaries actively seek to exploit. These adversaries and competitors are increasing their capabilities in space by developing and demonstrating counter-space systems, and, similar to what we have seen in the other domains, by engaging in deliberately provocative behavior to advance their plans to gain control of space. To safeguard our national interests at home and abroad and to support a rules-based international order, the U.S., along with our allies and partners, must promote and protect the peaceful and responsible use of space.

UNDERSTANDING OUR COMPETITION

The number one priority for the Command is to understand our competition, which relies on a deep understanding of the space environment. To achieve this, we prioritize space domain awareness, which encompasses tracking, identifying, and characterizing objects in space in a way that enables real-time understanding of potentially threatening activities. Through this perception of activities that affect our domain, we can better protect and defend our assets when there may be only minutes to act. This is our highest priority and we need Congress's continued support to achieve comprehensive space domain awareness.

CHINA DESIRES TO USE SPACE TO SUPPLANT THE UNITED STATES AS A GLOBAL ECONOMIC AND MILITARY LEADER

Over the past two decades, an increasingly assertive China and a resurgent Russia worked to develop advanced technologies to erode core United States military advantages, such as power projection and rapid, global, space-enabled precision fires. Their militaries actively integrate advanced space and counterspace technologies into multi-domain warfighting strategies to challenge U.S. regional superiority, position themselves as space powers, and create improved balance of power dynamics in their near abroad. Both countries reorganized their militaries to develop deeper competency in technical military fields such as electronic warfare, cyberspace and space operations. China and Russia each weaponized space to deter and counter United States and allied intervention and military effectiveness in future conflicts. Today, space is a warfighting domain not because we desired it to be; it is a warfighting domain because our competitors made it so.

THE PACING THREAT—CHINA

China poses a major security challenge and remains a long-term strategic competitor to the United States. Beijing views the international environment and China's relationship with Washington as increasingly adversarial. China continues its decades-long military modernization campaign in order to build what it terms a "world-class military." Chinese leaders characterize China's long-term military modernization program as essential to achieving great-power status. People's Liberation Army (PLA) modernization focuses on developing and fielding advanced military capabilities in all warfighting domains—emphasizing long-range precision strike, cyberspace, electronic warfare, space, counterspace, and a modern, effective nuclear deterrent while restructuring the PLA into a combat-capable global joint force. Looking forward, an increasingly capable and lethal Chinese joint force will almost certainly be able to hold United States and allied forces at risk at greater distances from the Chinese mainland.

China developed robust and capable space services, including space-based intelligence, surveillance, and reconnaissance (ISR). Moreover, they are making improvements to existing systems, including space launch vehicles and satellite navigation constellations. Their current BeiDou navigation system is now globally operational. These capabilities may mask potential military activities and may be considered dual-use in nature. Operated collectively, these capabilities provide their military with the ability to globally command and control their forces, enhance their situational awareness, as well as enable them to monitor, track, and target adversary forces. Today China's ISR satellites are capable of providing electro-optical and synthetic aperture radar imagery, as well as electronic intelligence and signals intelligence data. Beijing has a goal of becoming a broad based, fully capable space power. China's rapidly growing space program is second only to the United States in the number of operational satellites.

Beijing actively seeks space superiority through space and space attack systems. One notable object is the Shijian-17, a Chinese satellite with a robotic arm. Space-based robotic arm technology could be used in a future system for grappling other satellites. China also has multiple ground-based laser systems of varying power levels that could blind or damage satellite systems. China is developing a broad complement of jamming and cyberspace capabilities, directed energy weapons, on-orbit capabilities, and ground-based antisatellite missiles that can achieve a range of effects. China will attempt to hold United States space assets at risk while using its own space capabilities to support its military objectives and overall national security goals.

RUSSIA SEEKS TO DEGRADE UNITED STATES SPACE CAPABILITIES IN ORDER TO PREVAIL IN FUTURE CONFLICTS

The Russian military remains an existential threat to the United States and a potent tool designed to maintain Russia's influence over the states along its periphery. Russia sees space as integral to winning modern wars and reorganized their Aerospace Force in 2015 to incorporate space operations and counterspace capabilities. Russia views its space program as a longstanding example of its leadership on the international stage. Moscow concluded that gaining and maintaining supremacy in space has a decisive impact on the outcome of future conflicts and is developing space attack systems to hold United States and allied space assets at risk.

Russia considers United States dependency on space to enable military power projection as a vulnerability it can exploit in a conflict. Concurrently, Russia pursues counterspace weapon systems that can deny, damage, and defeat United States space-based systems in order to reduce United States military effectiveness and control conflict escalation if deterrence fails. Russia is also developing and testing space-based and direct ascent anti-satellite weapon systems.

The Nudol is a Russian mobile ground-based missile designed to destroy satellites in low Earth orbit. Additionally and already on orbit are COSMOS 2504 and COSMOS 2536, prototype Russian antisatellite weapons that could kinetically destroy satellites in low Earth orbit. Russia also has several ground based low-power lasers designed to temporarily blind United States missile warning and imagery satellites, and high-power lasers developed to damage United States satellites.

In 2020, Russia conducted several counter-space weapon systems tests while also exhibiting unsafe and irresponsible maneuvers on orbit. It tested an improved, highly survivable ground-based anti-satellite missile system, and a space-based weapon system that released a projectile designed to target other satellites on orbit. Both weapon systems could damage or destroy a satellite, creating a cloud of debris that would endanger every space-faring nation's satellites, to include the International Space Station. Such activities are inconsistent with the safe and peaceful use of space. Meanwhile, Russia continues to update and modernize terrestrial alternatives to space systems, creating asymmetries that could enable them to hold United States space-based capabilities at risk.

IRAN AND NORTH KOREA CONTINUE TO DEVELOP AND EXPAND THEIR COUNTER-SPACE CAPABILITIES

Iran and North Korea continue to advance their own counter-space threats through cyberattacks, jamming, and electronic warfare. Having closely observed our ability to harness the advantages from space, Iran and North Korea actively seek asymmetric approaches to negate our power projection capabilities.

Iran recognizes the strategic value of space and counterspace capabilities. Tehran claims to have developed sophisticated capabilities, including space launch vehicles and communication and remote sensing satellites. Iran's simple space launch vehicles are currently only able to launch microsatellites into low Earth orbit. Iran proclaimed the April 2020 launch of the NOUR–01 satellite to be a "start of the formation of a global power." While Iran claims the NOUR–01 has imaging capabilities, our persistent observation efforts prove that it is actually non-operational, tumbling through space, and unlikely to provide any useful intelligence. However, Iran is using improvements in the missile launch technology used to put the NOUR–01 satellite on orbit to develop longer-range, more accurate strike weapons. Iran's counterspace capabilities have centered around jamming satellite communications and global positioning system (GPS), and Iran is reportedly making advancements in these areas.

North Korea also maintains a threat to space operations through its electronic warfare capabilities, with an emphasis on deception operations and GPS jamming. The technology to evolve and mature their cyberattack capabilities continues to improve, along with their ability to develop more advanced long-range missile launch systems.

One way that these less developed adversaries seek to leapfrog or negate our advantages is by leveraging commercially available capabilities. These capabilities provide them with partially effective military support that helps them to navigate, gather intelligence, communicate, and otherwise achieve competencies that until very recently were the exclusive purview of more advanced space powers. We should not assume that our current qualitative advantage in these areas necessarily ensures the space superiority we previously held.

OTHER NATIONS AND COMMERCIAL EXPANSION ARE INCREASING OPPORTUNITIES AND CHALLENGES IN SPACE

With more than 50 space-faring nations and commercial entities, space is one of the most interconnected and interdependent operational domains. Interestingly, as of 2020, six of those nations and one alliance of nations have demonstrated an inherent Mars exploration capability through attempts to place a vehicle on its surface. Those countries include the United States, Russia, China, the United Arab Emirates, Japan, India, and the European Union. While this is a positive indication of a rapidly accelerating interest in space that can benefit a greater number of people, it also highlights the need to prioritize space development. More significantly, it highlights the need for good stewardship of the domain, which demands responsible behavior; a mistake by one could have catastrophic consequences for all.

Commercial growth in space provides both significant opportunities and potential challenges to overcome. The commercial space sector continues to grow, with global revenue exceeding $366 billion in 2019 and 60-satellite per launch missions or advancements in commercial space tourism from companies like SpaceX and Virgin Galactic highlighting the importance of the domain. Commercial opportunities open new possibilities, but can also complicate access to the domain with the proliferation of mega constellations. As commercial satellite constellations expand and begin pushing out beyond geosynchronous orbits, it becomes increasingly important to understand the domain and to manage burgeoning traffic.

Underpinning this growing congestion is the ability to understand the environment through shared space situational awareness—tracking objects in space—and space domain awareness—tracking, identifying, and characterizing space objects with the appropriate fidelity to identify threats. USSPACECOM continues to develop partnerships with allies, within the U.S. Government, and with commercial partners to advance mission capability in both space situational awareness, and space domain awareness. As part of this overarching effort, the Department of Commerce is increasing its role in promoting spaceflight safety standards and the coordination of space traffic, a critical component to safe operations in the domain. I appreciate the Department of Commerce's enthusiasm and dedication to effectively develop, maintain, and use space situational awareness data from a variety of governmental, commercial, and international sources in an Open Architecture Data Repository. I urge Congress to afford the Department of Commerce the resources they need to accomplish the civil and commercial spaceflight safety mission. This transition allows USSPACECOM to concentrate on developing the more precise space domain awareness capabilities essential to characterizing threats in space and, in turn, enabling a whole-of-government response. A continuing partnership between USSPACECOM and the Department of Commerce is a key enabler of U.S. and allied space superiority, not to mention a necessary element of a vibrant space economy.

BUILD THE COMMAND TO COMPETE AND WIN

UNITED STATES SPACE COMMAND HAS UNIQUE SPACE DOMAIN RESPONSIBILITIES

Where the U.S. once enjoyed a profound technological lead in developing and fielding space capabilities, strategic competitors now compete for space dominance. As these potential adversaries have evolved and proliferated an increasing array of counter-space capabilities, USSPACECOM relies on its service and interagency partners to outpace the threats. This requires continued emphasis and focus on correctly identifying threats and responding rapidly in a threat-relevant timeframe.

USSPACECOM has two essential tasks—first, to enable the Joint Force by providing unmatched, dependable space capabilities; and second, employing combat power in the space domain. Our mission is to conduct operations in, from, and to space that deter conflict and, if deterrence fails, deliver decisive space combat power for the Joint and Combined Force. Our ability to accomplish this mission effectively is contingent on amassing a variety of capabilities and effectively integrating them across all domains and in concert with the Joint force and our allies and partners.

USSPACECOM IS INCREASING ITS OPERATIONAL REACH AND EXPANDING ITS CAPABILITIES THROUGH PARTICIPATION IN JOINT, COMBINED, AND INTEGRATED EXERCISES

USSPACECOM continues to grow its operational capability with our two functional components and five service components. These functional and service components provide warfighting capabilities for joint execution in support of USSPACECOM. Through Joint Task Force—Space Defense, we protect and defend our on-orbit assets, and through Combined Force Space Component Command, we provide support to terrestrial forces and integrate with commercial partners, while

defending the domain against aggression. To task these organizations efficiently and effectively, USSPACECOM published its first campaign plan and operating order that aligns joint operations and achieves unity of effort.

To test our plans and operating concepts, USSPACECOM regularly participates in advanced, coalition-integrated global and regional exercises and wargames, such as Global Lightning, Austere Challenge, and Pacific Fury. These events prepare our Joint Force, allies, and partners to protect and defend our space assets while providing combat effects in, from, and to space. Through these multiple exercises and senior level war games, USSPACECOM demonstrates its ability to work with other Combatant Commands, the Joint Staff, and international partners to execute globally integrated operations across the spectrum of warfare.

Warfighting exercises require a multi-service, multi-domain, and globally integrated approach to national security objectives, consistent with the Chairman's Joint All-Domain operations directive. We are also preparing to execute our own tier one multi-combatant command exercise in fiscal year 2022. In future exercises, we will continue to integrate fully across regions and domains to protect and defend U.S. and allied space interests globally.

THE UNITED STATES MUST IMPROVE ITS DEFENSIVE AND OFFENSIVE SPACE WARFIGHTING CAPABILITIES TO DETER ADVERSARIES AND PREVAIL IN FUTURE CONFLICTS

The DOD's legacy space architecture and organizations were designed for a relatively benign and uncontested environment. In past decades, we invested in vulnerable, space-based platforms while our adversaries invested in relatively low-cost methods to counter these capabilities. Our focus was engineering redundancy rather than warfighting reliability. This left us vulnerable to exploitation—particularly as our dependence on space-based capabilities to advance U.S. interests continued to grow. This changing strategic environment resembles the environment experienced by the United States in the Vietnam War, where conventional strength dependent on vulnerable supply lines and centralized forces left troops pursuing a defense strategy, vulnerable to asymmetric and decentralized attacks.

Today, even as potential adversaries continue their effort to achieve parity in space capability, they also employ asymmetric capabilities to deny us the advantages of space. The U.S. must continue to build resilience in the vital space capabilities the Joint Force requires to fight and win in space, as well as in the air, land, sea, and cyber domains, while strengthening its space warfighting capability to counter these rising peer, near-peer, and asymmetric threats. Such warfighting capability provides a credible deterrent against belligerent actions in the space domain as part of a broader U.S. strategy for deterrence and defense.

USSPACECOM aims to advance our capability and capacity aggressively by coordinating with the services, leveraging innovative space systems, and by developing joint warfighters who have the expertise, judgment, and will to fight and win against a determined adversary. To this end, USSPACECOM provides warfighter requirements to the Department, which leads the acquisition of the capabilities we need to achieve our mission. This is critical to revitalize our aging space architecture, remaking older, less flexible, and vulnerable systems into a resilient, redundant, and survivable architecture to cope with evolving threats. Consequently, we need the continued support of Congress for the Services as they acquire components of this architecture and work to streamline acquisition processes and shorten the time from concept to fielding. USSPACECOM also strongly supports any economical, innovative solution that increases the defensibility of our space systems and provides the means to maintain space superiority.

Moreover, in today's threat environment, strategic deterrence remains the bedrock of our national defense. Every Operational Plan across the Department begins with the assumption that strategic deterrence will hold. A safe, secure, and effective nuclear force, enabled by space-based assets, remains the most credible combination of capabilities to deter strategic attack and execute our national strategy. We must stay the course with nuclear and conventional force recapitalization commitments to ensure the Joint Force can operate when, where, and as required to defend our national interests. Moreover, we must defend our space assets and improve our space domain awareness to present viable options to the Joint Force across the spectrum of operations.

Just as we must revise our systems and processes, we must also develop the most critical component of our enterprise—our warfighters. USSPACECOM is laying the foundation for a warfighting organization and is reinforcing a spirit of excellence, character, and resolve in our space experts. In so doing, we will promote coordination across the entire enterprise and empower our warfighters to act decisively and win.

United States Space Command is a joint warfighting organization with uniformed and civilian representatives from all services and the Nation's Intelligence Community. A year and a half after reestablishment, we have approximately 430 military and civilian personnel assigned to the Headquarters, or just over one third of our authorized end strength. We need the continued support of Congress to help us achieve our full strength, especially with regard to funding our civilian personnel, who comprise two-thirds of our workforce and provide critical diversity, continuity, and skills. This is critical to our ability to prevent capability gaps in support of the National Defense Strategy and missions assigned to us in the Unified Command Plan. To this end, we continue to align our work force to bolster operational capabilities presented by our joint centers. We use these forces to achieve our key tasks: understanding our competition, building the command to compete and win, fostering and maintaining key relationships, maintaining digital superiority, and integrating commercial and interagency organizations. By achieving these key tasks, we will accomplish our mission.

USSPACECOM FOCUSES ON PERSONNEL DEVELOPMENT AS A KEY ENABLER OF MISSION SUCCESS

USSPACECOM works with our joint force providers to acquire the best and the brightest personnel, helping develop our future space leaders through training, education, and other aspects of human capital development. In partnership with the National Security Space Institute, USSPACECOM develops a cadre of joint space warfighters that ensures an enduring focus on space power as part of a more lethal and ready force. This interactive classroom instruction, coupled with individually tailored online training, allows newcomers an opportunity to build upon their knowledge base in the context of our directed missions. Additionally, we continue to integrate space into professional military education, other combatant commanders' conferences, and throughout joint education. Investment in human capital improves the development of joint space warfighters and our lethality in the space domain.

TO REMAIN A SPACE POWER REQUIRES CONSISTENT AND CONTINUED RESOURCES COMMENSURATE WITH THE VALUE THAT SPACE PROVIDES AND THAT THE THREAT DEMANDS

USSPACECOM's ability to execute its assigned mission depends on the services' continued rapid development and timely delivery of critical space warfighting capabilities. Specifically, we require the sensor architecture necessary to detect and characterize activity in space; a unified and distributed command and control family of systems that enable synchronized space effects; flexible capabilities to deter aggression and deliver decisive effects; and the ability to protect and defend U.S. and allied interests.

MAINTAINING KEY RELATIONSHIPS

USSPACECOM IS STRENGTHENING ALLIANCES AND ATTRACTING NEW PARTNERS, WHILE WORKING WITH PRIVATE ENTERPRISES TO IMPROVE SPACE AWARENESS

As President Biden lays out in the March 2021 Interim National Security Strategic Guidance, strengthening our relationships with allies and partners is crucial to maintaining a secure, safe, and sustainable space environment. To this end, we are expanding our network of partner nations, international organizations, and commercial entities that bring situational awareness, mutual support, and technological innovation to the space enterprise. We are enhancing our interoperability with allies and partners and sharing information to unite around a compelling narrative.

In 2020, USSPACECOM expanded space related data sharing agreements, including new partners Luxembourg, Peru, and Portugal. To date, USSPACECOM has agreements with 26 nations, two intergovernmental organizations, three academic institutions, and over 90 commercial satellite owners, operators, and service providers. By providing this advanced information and services to space-faring partners, we display American leadership in the space domain, promote transparency in the responsible and peaceful use of space, and support the planned transition of civil and commercial spaceflight safety services to the Department of Commerce in 2024. In 2020, in coordination with USSOUTHCOM, we implemented our first "space-centric" security cooperation initiative focusing on institutional capacity building with Brazil, Chile, Colombia, and Peru.

The safety and sustainability of an increasingly crowded space domain grows more complex as commercial entities plan to launch thousands of satellites in the next few years. The explosive growth of nano, micro, and small satellites will further stress our existing space surveillance networks. Working closely with compa-

nies as they plan, launch, and operationalize these new mega-constellations is key to our continued ability to provide comprehensive space situational awareness. As a priority, USSPACECOM warfighters in the Combined Space Operations Center (Vandenberg AFB), the National Space Defense Center (Schriever AFB), the Joint Operations Center (Peterson AFB), and at a variety of other key nodes are working tirelessly with interagency partners to build and leverage complete and timely space domain awareness. Along with this battle space awareness, we are also prioritizing the associated and necessary space command and control capabilities.

Space domain awareness remains the bedrock of many partnerships and the top priority for USSPACECOM. The command seeks to develop a more complete, big picture understanding of activities in the domain. This goes beyond merely tracking space objects for situational awareness to a space domain awareness that identifies, tracks, and characterizes objects that can threaten U.S. and allied space capabilities. This is a necessary element of acknowledging space as a warfighting domain, which includes its enabling computer networks, terrestrial sites, and the electromagnetic links between space and ground systems.

ACHIEVING THE DESIRED EFFECTS IN THE SPACE DOMAIN REQUIRES CLOSE COORDINATION WITH OTHER COMBATANT COMMANDS

The command continues to evolve Combatant Command integration and establish normalized relationships to coordinate, integrate, and synchronize operations extending beyond geographic areas of responsibility. To facilitate cooperation, interoperability, and unity of effort, USSPACECOM created Space-Integrated Planning Elements comprised of space and intelligence planners embedded within the staffs of our sister Combatant Commands. These experts integrate space capabilities and effects into their respective Combatant Command plans while mutually informing USSPACECOM's operational plan development. Furthermore, each Combatant Command's space warriors integrate space effects across all warfighting functions, enhancing the Joint Force's ability to achieve military objectives rapidly and decisively.

MAINTAINING DIGITAL SUPERIORITY

Underpinning all of these must be a robust cybersecurity environment that secures our intellectual and technological advantages from cradle to grave. It is critical to keep building this momentum by funding these fundamental capabilities: battle space awareness, command and control, deterrent space capabilities, cybersecurity, and protect and defend capabilities. Additionally, we must capitalize on machine learning and artificial intelligence developments to secure our systems, advance our capabilities, and increase the speed of our decision-making process. Accordingly, within our efforts to maintain digital superiority, USSPACECOM is determined to innovate for competitive advantage, evolve cyber operations for an agile and resilient posture, and invest in game-changing technologies. The research and development, acquisition, and operationalization process relies on innovation at every level, and we must streamline this process to operate at the growing pace of decision-making. Future years will require additional resources to accomplish all of this, and to ensure the U.S. can adequately address the evolving and expanding cyber threats posed by our strategic competitors and adversaries.

INTEGRATING COMMERCIAL AND INTERAGENCY ORGANIZATIONS

USSPACECOM PROVIDES MISSION ASSURANCE FOR INTERAGENCY AND COMMERCIAL SPACE OPERATIONS

The rapidly accelerating interest in space and associated growth in the technically oriented industrial base is a key part of continued U.S. economic prosperity. U.S. commercial space growth aids our mitigation efforts against threats. One example includes the effort with commercial partners to design and field a United States-built engine to power our largest space launch vehicles, thus decreasing our need for reliance on the Russian RD—180 to propel our Atlas V launch vehicle. In our interagency space mission assurance role, USSPACECOM supported NASA and SpaceX for contingency rescue operations for both the Demonstration Mission Two launch in August and the SpaceX Crew-1 launch in November—the first crewed space launches from U.S. soil in nearly a decade. USSPACECOM is committed to assuring the safe exploration of space and is supporting the planned lunar missions. USSPACECOM is preparing to provide crew and spacecraft recovery for the upcoming Artemis missions and associated training events to begin late 2021.

CONCLUSION

USSPACECOM plays a crucial role in guaranteeing the American way of life through the delivery and defense of U.S. and allied space capabilities and services. We make daily gains in our ability to protect and defend our assets from our adversaries, and we stand ready to provide advanced space-based capabilities to our warfighters. Under the direction of the President and Secretary of Defense, and with the support of Congress, USSPACECOM is prepared to safeguard our access and operations outside our atmosphere so that there is never a day without space.

Chairman REED. Thank you very much, General Dickinson.

Before we begin, let me remind my colleagues that since this is a hybrid hearing, we will not use the early Byrd rule; instead, we will ask questions in order of seniority.

They are 5-minute rounds. Please stick as closely as you can to the 5 minutes. You will see the timer before you, and I would ask all colleagues to mute their microphones when they are not speaking. Thank you.

General Dickinson, let me begin with what I think is a fundamental question. As I suggested in my opening remarks, you could also be called sensor command, as well as Space Command, because your responsibilities extend not only to space-based sensors, but also to many ground-based sensors, and to integrate them into a system, a coherent system.

So, bottom-line question, what are you doing to ensure that missile-warning infrastructure of radars and satellites are capable of determining whether there is a ballistic or a hypersonic missile attack on the United States?

Admiral RICHARD. Senator, thank you for that question.

So, what we are doing at U.S. Space Command over the past 20 months or so since we stood up was looking at all the sensor, the entire sensor architecture worldwide in an attempt or in terms of understanding what sensors we have doing what specific missions. What we have done over the past year or so has been, we have taken the opportunity to take terrestrial-based sensors that traditionally do missile-defense type of activities from the different services, the Army and the Navy, and we have looked at them from the perspective of how can they contribute to our ability to understand what is going on in the space domain?

While this is just the beginning of it in terms of making those sensors interoperable in our architecture, we are driving towards the future of where we will actually have those integrated. So, in other words, Senator, we are taking current capabilities that used to traditionally do missile defense and seeing if they have capabilities to help us in the space domain in terms of doing our space domain-awareness type missions. As we look to further refine our requirements, adding requirements to those capabilities through the Department to enhance their ability to do space domain awareness.

So, we have had good success over the last 19 months in doing that and we have demonstrated a couple of times, with regards to some of the actions that our competitors have been doing on orbit with a relative degree of success. So, we have taken the first step. The steps after that will be further integration of those capabilities and, again, working with each of the combatant commands in terms of prioritization of those sensors to be able to do both, space domain awareness, as well as missile-defense missile warning.

Chairman REED. Thank you, General.

Admiral Richard, why do we need to build a ground-based strategic deterrent, rather than simply extend the life of the Minuteman-III ICBM?

Admiral RICHARD. So, Senator, the answer to that fundamentally starts with the idea that nothing lasts forever. You cannot indefinitely life-extend anything, and I cannot deter with the leftovers of the Cold War forever into the future. That is the fundamental reason here.

I am different from the other combatant commands in that I don't come up with my own objectives; they are directed by the President, and as interpreted by the Secretary of Defense and the Chairman. So, I have a stack of things I have been ordered to do. I need a certain amount of capability to go do that and I need weapons systems that will actually work and actually make it to the target.

So, there are any number of reasons. The ultimate authority on whether or not Minuteman-III can be extended is the Secretary of the Air Force and the Chief of Staff of the Air Force, as just by the Secretary of Defense. So, I am not the ultimate authority on that.

I think we have repeatedly reported to Congress why it is not cost-effective to do that, and from my viewpoint, I am not sure how they are going to be able to do it at all. It is in the details. What they are doing to keep that weapons system functioning, remember, that is a 1970s-era weapons system that I am going to have to employ against 2030-level threats. We are down to two of a particular type of switch that is required to go in the launch-control centers. Nobody knows how to make it anymore; it is obsolete. It is not worth a company to put their effort into that. They have repeatedly been pulling rabbits out of the hat to work through those types of issues.

A simple one, Senator, is if you try to life-extend a weapons system that was built before the invention of the internet and then turn around and ask me why it is not cyber secure, I don't know how to retrofit a full cybersecurity capabilities forever into the future on a system that wasn't even designed when we had an internet. So, fundamentally, nothing lasts forever and we eventually have to get new stuff, sir. All right.

Chairman REED. Thank you, Admiral.

Just one final question in my remaining time. Would a more robust arms control effort by the United States and, obviously, other countries, particularly the United States, complement your mission to deter an atomic attack or a nuclear outbreak?

Admiral RICHARD. Absolutely, Senator. I have said I will support any arms control agreement, less formally, I will take all I can get, right. If we actually have arms control and we are confident in it and it is verifiable it reduces the threat, it simply makes my job easier.

Chairman REED. Thank you very much.

Senator Inhofe, please.

Senator INHOFE. Thank you, Mr. Chairman.

In my office, we talked about this, Admiral Richard and I. I think you covered it so well in your opening statement. I keep thinking, I am not sure what you might have left out, but you have done a great job.

We know what Russia is doing. We know what they have been doing. We know what China has been doing. North Korea, now, is presenting a growing risk to the United States and our allies, and yet, our nuclear forces are decades past their designed lives and will need to be retired soon.

So, I just think it is important that when we are seeing our primary adversaries, as outlined in our dais, that we are not doing what we should be doing. We are actually behind our primary adversaries.

So, I would like to have you, you know, restate. Russia, we know what they are doing. They have already modernized over 80 percent of its force, and China's nuclear programs are accelerating.

So, I would like to know how important is it that we complete the U.S. Nuclear Modernization Program as quickly as possible. You have outlined that we are not, and where we are relative to our adversaries, but tell me how important it is that we do it now.

Admiral RICHARD. Senator, I will start with—

Senator INHOFE. Mic, we need your mic.

Admiral RICHARD. I will start with, I want to expand on one point. I said in my opening statement that China could no longer be a lesser-included case. What that means is they are at the point that what it is going to take to deter them is going to start to be additive to what we have to do with Russia.

I don't have the luxury of deterring one country at a time. I am expected to deter all countries all of the time, and then on top of that, I don't have any remaining operational margin, right. We have exhausted the operational margin to allow us to delay this recapitalization as far as we went. I think it is important to remember that a lot of the quantities that we are talking about in these requirements were set many years ago when the threat level was actually much more benign than what we have seen now, and we have simply no operate, you are counting now on more and more things having to go right, and we are counting on more and more that we precisely understand the threat we are at, and that is a standard we have never allowed in our history to happen inside the strategic deterrent force.

Then the final point, is we have never had to deter two opponents at the same time that are different. Most of our theory doesn't even account for that. We are working very hard on that, but that is why we have to have these capabilities in order to execute the direction the President gave me.

Senator INHOFE. That is good.

I know there are a lot of people that are leaning on our President, a lot of anti-nuke people that are wanting to minimize the concern that we, that we are expressing today. One of the things is the no-first-use policy. Now, that is one that I can't remember one Secretary of Defense who shares, who doesn't share your view on the no-first policy. I mean, it is there. It is real, and so, I think even Secretary Gates was quite outspoken in that area. Can you think of anyone who doesn't have that policy? One quick word, then, on the no-first-use, since that is going to come up, that is going to be a very prominently portrayed and discussed.

What is your feeling on that?

Admiral RICHARD. Well, Senator, what I would offer on this, is, and I have testified to this effect before, look, the Nation can have any policy it wants, right. The Nation can have any——

Senator INHOFE. Yeah, you did testify. You said, my best military advice would be to not adopt a no-first-use policy. You are strong on that.

Admiral RICHARD. Right, and I still stand by that statement and here is why. One, we have already run an excursion of what that would do to strategic deterrence. It will diminish it. You will remove a level of ambiguity now that has a deterring effect, short of employment of nuclear weapons. We won't have that anymore. That will be mitigated by the fact that nobody is going to believe it anyway, right, it won't be credible.

We already have assurances that cover all, but about 10 nations or so, half of which are our allies. So, you are only talking to folks who are probably not going to find it credible. It will have no more credibility than our current missile-defense policies do.

The catch is some of the allies will believe it. So, it will have a corrosive effect on our assurance and extended deterrence commitments.

I think the commander of EUCOM, General Wolters, mentioned, you will get a mixed response. I think he is correct. But I don't see the upside to it, is my point, and so, I continue to recommend we not adopt that.

Senator INHOFE. Well, unfortunately, my time is expired, but let me just ask you, General Dickinson, all these documents that we have here that directly address your area, do you think that those, that the 2018, that was back in 2018, that the NDS still accurately assesses the strategic environment as it pertains to space domain?

General DICKINSON. Senator, I do. I do, in fact, believe it does because, you know, space is a warfighting domain. We have seen the activities by our competitors, both Russia and China, as they have expanded their capabilities, in particular, China in the space domain. We see their capabilities from direct-assent ASAT. Anti-satellite capabilities to on-orbit activity that they have done with that capability. We have seen the increase or proliferation of their directed-energy efforts in terms of electronic warfare in terms of jamming, as well as laser technology. So, I believe it is absolutely a warfighting domain that we need to continue to work very closely with.

Senator INHOFE. Thank you so much.

Chairman REED. Thank you, Senator Inhofe.

Senator Shaheen, please.

Senator SHAHEEN. Thank you, and Admiral Richard and General Dickinson, thank you for being here this morning and for your service.

General Dickinson, I want to begin with you. The Air Force is currently responsible for space traffic management for both, military and civilian satellites, and as we look at the proliferation of commercial satellites, that has become more and more challenging with situational awareness.

But over the next few years, the Department of Commerce is going to assume responsibility for managing the civilian component.

Senator Moran and I, as the ranking member and chair of the Commerce, Justice, and Science Appropriations Subcommittee have asked for additional information about the funding and personnel requirements that that kind of transfer would require. We have not yet received a definitive answer from the Air Force about how much it spends on the functions that will be transferred to the Commerce Department.

The fiscal year 2021 omnibus provides $10 million for the Commerce Department to begin to assume those responsibilities. Can you talk about how this compares to what the Air Force is currently spending.

General DICKINSON. Senator, thank you.

The space traffic management, as I mentioned in my opening remarks, you know, we, on a daily basis, we are tracking close to 32,000 pieces of debris, objects, satellites, whether they are active or old dead satellites, and that is quite a, that is a big mission area within U.S. Space Command.

Today, the resources that I use on that provide what I would term a very administrative type of function in terms of identifying objects in space so that we are able to provide a secure and safe space environment for activities on orbit, in particular, the International Space Station, for example, in low-Earth orbit——

Senator SHAHEEN. I am sorry to interrupt, but I understand that. I think that is a very important function.

That is why we are trying to get some information about how much you are actually spending so we can figure out as we look at the budget for the Commerce Department.

I would say that I had a certain amount of skepticism about whether this should be moved to the Department of Commerce and there was a study done that came to the conclusion that maybe it does make sense to move that function there.

So, do you know or can you provide in committee in the future, with the amount of money that you are currently spending on that function?

General DICKINSON. I certainly can. I can take that back and get you an answer from the Air Force on how much they spend.

[The information referred to follows:]

General DICKINSON. Based on input from USSF, fiscal year 2020 expenditures totaled $60 million for Operations, Depot and Special Program Office (SPO) expenses. Included in that figure is $12.4 million to sustain legacy space capabilities.

Senator SHAHEEN. Thanks very much.

You also talked in your opening comments about the importance, you said power is our people, and I certainly agree with that. But as we look at the proposed relocation of Space Command headquarters from chief restructuring officer to the Redstone Arsenal in Alabama, I am some concerns, based on our past experience with a similar transfer of operations from the National Capital Region to Huntsville, Alabama, of the Missile Defense Agency. In that move, the agency lost 80 percent of its civilian workforce because employees refused to move.

Do you have any estimate as to how much it is going to cost to move to Redstone from the current location and how many employees you might lose in that process?

General DICKINSON. Senator, so, I don't have exact numbers on estimates on the cost for the move to Huntsville.

That is actually being determined now by the Department of the Air Force as the basing decision authority.

With regards to the civilian workforce, I would categorize that as I don't have a good feel for that right now, because it will depend. I think the military, we can all agree, we are somewhat nomadic and we move where the military tells us to. When dealing with civilians, and I have done that in two previous jobs at the Missile Defense Agency, actually, in my last job at Space and Missile Defense Command, it is a little bit different when you are talking about civilians. They have made life choices and where they are currently living, and so, we will do everything we can to incentivize them to make the move, but I can't give you a percentage on how many that will be.

[The information referred to follows:]

I will defer basing process questions to the SecAF, who has the authority for selecting the permanent location for USSPACECOM Headquarters. Analysis to understand the impact of a transition to Redstone Arsenal in Huntsville, AL is underway. My staff is looking hard at timelines, anticipated impacts to human capital, facilities, and mission with a goal of minimizing risk to mission while being good stewards of the taxpayers' money. Once we have a final basing decision, we will be able to provide and discuss the full analysis.

Senator SHAHEEN. Well, Mr. Chairman, I would hope that we would get some more information before this proposal becomes final about how many employees we might lose and about what the difference in cost is, which I think is significant.

Admiral Richard, I was very pleased to see the new Biden administration agree to extend the New START Treaty for 5 more years. Can you talk about how STRATCOM uses the information from New START channels, the inspections and data exchanges and how they are important to you.

Admiral RICHARD. Senator, we were also pleased to see the New START Treaty get extended and it is for that——

Chairman REED. Your microphone, Admiral.

Admiral RICHARD. I'm sorry. You would think I have done this before.

We were also pleased to see the New START Treaty be extended, right, and so, you are pointing to one of its primary benefits. In addition to the limits, it is the transparency and the confidence now that we have in understanding what that piece of the threat looks like. What I would further encourage his efforts to get a similar degree of control and accountability on the remainder of the Russian arsenal, all of which is something I have to deter.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Shaheen.

Senator Fischer, please.

Senator FISCHER. Thank you, Mr. Chairman. Thank you, gentlemen for being here today.

Admiral Richard, I would like to thank you for your honesty and your bluntness of your opening statement in explaining the expanding nuclear programs of both, China and Russia. Last week, the Strategic Forces Subcommittee held a classified briefing on these threats and yet, we continue to hear renewed calls for unilat-

eral cuts to our nuclear forces, abandoning the triad, and delaying or cancelling modernization programs.

Sir, are you aware of any intelligence or threat assessments that would support these courses of action?

Admiral RICHARD. Senator, I am not. In fact, the threat is only getting worse rapidly.

Senator FISCHER. So, it is your view that taking such actions would reduce our ability to deter the threats that we face?

Admiral RICHARD. Senator, yes.

Senator FISCHER. Microphone.

Admiral RICHARD. Senator, yes.

It is not just the nuclear component. Part of what I am trying to show is the relationship in all of our elements of national power and how nuclear underpins that.

Senator FISCHER. What about the future, because, as you know, the impact of cutting modernization programs now, it wouldn't be felt until the 2030s when our force begins to age out, as you spoke about, and replacements aren't ready.

Do you see any reason to believe that the world is going to be a lot safer in 2030 and we won't need a viable deterrent then?

Admiral RICHARD. I see no indications of that. That will be an unprecedented threat that we face in 2030. Hopefully, perhaps we can change that trajectory, but I can't count on hope in terms of having the capabilities needed to do my mission.

Senator FISCHER. Admiral Richard, what are your views on the current distribution of warheads across the three legs of our triad?

Right now we see about 70 percent of our treaty-accountable warheads. They are on our submarines, and if significantly cut the ICBM leg, as some advocates have urged, what number would go up further, and, of course, our bombers are not on alert.

Do you think there are risks with leaning too heavily on one part of the triad?

Admiral RICHARD. Senator, the answer is yes, and I will give you just one example of that. What is not often recognized is we don't have a triad day-to-day, right, the bombers are not available to us. We chose to take them off alert as a type of peace dividend after the Cold War.

So, day-to-day, all you have is, basically, a dyad. Basic design criteria in the triad is that you cannot allow a failure of any one leg of the triad to prevent you from being able to do everything the President has ordered you to do. If you don't have intercontinental ballistic missiles, we can't meet that criteria. You are completely dependent on the submarine leg. I have already told the Secretary of Defense that under those conditions, I would request to re-alert the bombers.

Senator FISCHER. Sir, you have also talked about counting the number of strategic nuclear warheads a nation has, that can be a crude way to measure their capability. Your posture statement mentions this, as well.

Can you elaborate on why this is such an incomplete way to assess an adversary and talk a little bit about the other elements that we need to also be considering.

Admiral RICHARD. Senator, fundamentally, you don't deter by accounting. We don't hold up cards and say, I have more, I win.

It is important to know what they can do with that capability to understand, operationally, the threat that you face. It is important to remember that both, Russia and China have a unilateral ability to go to any level of violence that they choose to if they perceive that the stakes are high enough. There is a point beyond which unlimited conventional capability will not be a sufficient deterrent.

So, unless you have a strategic deterrent that will deter them from that, then everything else in the Department of Defense is simply going to get escalated past. Knowing what they are capable of doing is what causes you to come to that conclusion.

Senator FISCHER. Our capability, our production capability is basically nonexistent, isn't it——

Admiral RICHARD. Yes, ma'am. That is absolutely——

Senator FISCHER.—especially when you compare it to China and Russia. Can you speak to that.

Admiral RICHARD. Both China and Russia have significant capability in their nuclear weapons complexes, I can give you the numbers in a closed session, to produce more warheads. We are just barely able right now to life-extend our weapons and we are just starting to get to the point, we use the two terms interchangeably, just to be able to re-manufacture the ones we have. We have no capability right now to actually make a new weapon.

Senator FISCHER. Okay. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Fischer.

Let me recognize, via Webex, Senator Gillibrand.

Senator GILLIBRAND. Thank you, Mr. Chairman.

General Dickinson, I would like to turn to statements made by Secretary Blinken, where he said that the United States will focus on developing standards and norms of responsible behavior in outer space. The DOD Defense Space Strategy also noted our need to promote favorable standards and norms of behavior in space.

Can you please discuss SPACECOM's role in developing and practicing those norms and what you specifically believe those norms should be.

General DICKINSON. Thank you for the question.

So, SPACECOM's role in that is, one, our ability to understand what is going on in the space domain is fundamental to establishing and deciding what those norms of behavior are. I mentioned a little bit earlier the fact that our ability to increase our space domain awareness capabilities on orbit is very important to just what I described in terms of understanding what our competitors may be doing in the space domain.

I believe that, from a military perspective, that the norms of behavior and what we do in space is very important.

We have seen activity over the last 19, 20 months since this command has been established, that has shown that we have had some behaviors in space that are inconsistent with providing a safe and secure environment for our military activities, as well as our commercial.

So, in terms of norms of behavior and how we are working, we work very closely with the Department of Defense and, in particular, our OSD policy folks, on determining our recommendations to that process. The developing norms of behavior is a whole-of-gov-

ernment idea and approach, if you will, that will dictate our position on what those norms of behavior should be.

But, in sum, I would tell you that we have to have safe activities in orbit. We understand those by space domain awareness, along with what that means in terms of where folks put, where our adversaries and competitors put their space-based capabilities and what they are doing.

Senator GILLIBRAND. Thank you.

In last week's cyber architecture hearing, the subcommittee discussed the interoperability between our cyber capacity and space operations. Given that your command and CYBERCOM are both operating in highly complex and ever-evolving environments, how integrated would you say your efforts are with theirs, and how do you plan to maintain a high level of integration with CYBERCOM as the threat landscape continues to change?

General DICKINSON. That is very important in terms of our integration of space and cyber. We do that through several means, if you will. General Nakasone has provided to us, as we has done to the other combatant commands, a cyber-integrated planning element that is currently residing within my headquarters that provides us a very integrated approach to cyber and space operations.

In addition to that, we are standing up a joint cyber center within the command, as we speak. I also have, as a result of the command standing up, I have five service components provided by each of the services to the combatant command with two of those, my Navy component, as well as my Marine component, who are dual-hatted for me in space, as well as cyber. So, I have two service components that cyber is one of their core competencies, along with space, and in addition to that, General Nakasone has given me some support from the 16th Air Force.

So, in other words, I have three general ops or headquarters that provide cyber capabilities to me. I have an integrated planning element in my headquarters and I also have a joint cyber center. So, I believe that we are very well integrated in terms of space- and cyber-type of operations.

We are moving very quickly right now in terms of providing our requirements for activities in the cyberspace domain, as well as General Nakasone providing me with requirements of what he will need in his mission areas, as well.

Senator GILLIBRAND. In your written testimony, you mentioned that our adversaries have taken a number of provocative actions in space in order to test us. One concern from the Pentagon's 2020 Defense Space Strategy was that it did not explain in clear, full terms how we would deter adversaries in space. I am concerned an overemphasis in offensive space operations would destabilize space as a contested domain, rather than deter our adversaries.

What do you believe our best tools are to achieve deterrence in space?

General DICKINSON. Thank you. That is a great question.

I would tell you one of our biggest deterrence opportunities is with our allies and partners. We have, just since this command has stood up, we have just seen a bow wave, if you will, of allies and partners who want to come and be part of the U.S. Space Command and part of the space enterprise. I think as we have seen in

other domains, one of the greatest deterrence that we have is our allies and partners and how we can all come together in a very coordinated and synchronized manner in order to do deterrence.

One example, in particular, was the messaging that we did last year in 2019 and 2020, in response to Russian on-orbit activities, as well as their direct-assent ASAT tests that they did last year. What I mean by that is when we developed our messaging strategy for that particular, or those events, we had tremendous participation and integration with our allies and partners that we had never seen before.

So, one of the powers of this command or one of the strengths of this command is that we are able to do that 24 hours a day in terms of holding our adversaries and competitors accountable in the space domain and our allies and partners provide a big piece to that deterrent message.

Senator GILLIBRAND. Thank you.

Mr. Chairman, I will submit my questions for Admiral Richard for the record. Thank you.

Chairman REED. Thank you very much, Senator Gillibrand.

Let me recognize, via Webex, Senator Rounds.

Senator ROUNDS. Thank you, Mr. Chairman.

Gentlemen, first, let me begin by just saying thank you very much for your service to our country.

Admiral Richard, I believe that our traditional national defense rests on bedrock of the nuclear triad. I know that you have hit this a couple of times, but just in plain English so that folks that don't discuss nuclear triads on a regular basis, the hard-working Americans that are out there that are wondering why we have literally hundreds, if not thousands, of nuclear warheads, can you explain to the average guy that is working out there why it is that the triad is so important to our national security and why it is critical to invest in its modernization.

Admiral RICHARD. Senator, the simple answer to that question is that strategic deterrence doesn't hold, nothing else in the Department of Defense is going to work the way it was designed. That is it, plain and simple.

I get anxious that somehow, and remember, nuclear and strategic are two different things. All nuclear is strategic. Not all strategic is nuclear.

But we want to put it into a box by itself that has its own threat. You can decide how credible you think that threat is and somehow there is this independent [inaudible] that we can take risks over here and somehow that has nothing to do with what the rest of the Department does, when, in fact, it underpins it and enables it.

Yes, we like to throw a lot of numbers around. The bottom line is, what is available to the commander to deter and what am I deterring against?

We are treaty-limited to 1500 and 50 accountable nuclear weapons by the New START Treaty. That is what is available to me to accomplish all of the objectives the President has given me, and the consequence of failure in this mission is enormous. That is fundamentally what we are trying to accomplish, sir.

Senator ROUNDS. Interesting that that particular treaty applies to one of our adversaries, but not necessarily all of our adversaries, correct?

Admiral RICHARD. Senator, that is quite correct.

Senator ROUNDS. So, let's just talk about one of those other competitors or challengers in this particular case. I know that this may be one that may be difficult to do in open session, but can you talk a little bit about what China's civilian nuclear-production capabilities are and whether or not we are factoring that in with regard to their ability to produce nuclear material and the number of warheads that they are capable of producing in a very short period of time. I guess what I am thinking about are the fast reactors that they have available to them right now.

Admiral RICHARD. Senator, that is actually a great example of how rapidly China is changing, or at least how rapidly we are figuring it out, right. So, the answer to your question is, yes, but that is only as of about a week ago that we became aware of that and started the process to understand the implications of that.

Obviously, with a fast-breeder reactor, you now have a very large source of weapons-grade plutonium available to you. That will change the upper bounds of what China could choose to do if they wanted to in terms of further expansion of their nuclear capabilities.

We haven't yet run all the numbers. You are right, the answers would have to come back in closed session, but it has only been within the last week that we became aware that this limitation on them has changed in an upward direction.

Senator ROUNDS. Thank you.

General Dickinson, we have been competing against our adversaries, air, land, sea, cyberspace, and now we see them most certainly challenging us in space. While they may talk about having an interest in a military-free space, or at least one in which we are not actively participating in a military matter in space, clearly, the threats are there.

I would like to hear your thoughts on our ability to defend against these new threats and what you need in order to maintain unfettered access in space. Do you currently have the equipment and the resources necessary to protect the assets that we have in space right now from the threats from both, Russia and China?

General DICKINSON. Senator, so I agree, Russia and China are proliferating in the space domain and one more than the other in terms of capabilities on space, not just numbers, but the capabilities, as well, and that, in particular, is China. So, China is absolutely our pacing challenge right now in the space domain.

In terms of how I protect and defend on orbit or in the space domain really boils down to my ability to actually see and understand what is going on in the space domain. So, in other words, being able to use a combination of satellites, as well as terrestrial assets to understand activities on orbit, not only from an administrative perspective, in terms of knowing where things are, but actually having the ability to analyze those capabilities to understand what the threat is or what those capabilities could do and their intent.

So, space domain awareness, again, my number-one priority in terms of the command, and we have identified that as a require-

ment to both, the Department of Defense and the services, as well. But in order to do my "protect and defend" mission, I must fully understand what is going on in the space domain.

Senator ROUNDS. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Rounds.

Let me now recognize Senator Kaine, please.

Senator KAINE. Thank you, Mr. Chair, and Ranking Member Inhofe.

Just today, I am going to be paying a compliment to our staff at every hearing I am doing. The staffs have really done a great job of putting these hearings together, where we combine people attending in person and people, senators and witnesses, attending virtually, and I don't think we should take it for granted. So, I just wanted to offer my thanks to the hard work to make this challenging time work as seamlessly as possible, and to all the staff involved in that, thank you for that.

To the witnesses, thank you.

My colleagues have asked very good questions, many of which I was going to ask, and I am actually just sort of going to follow-up on Senator Rounds, where he was ending with space awareness. General Dickinson, we had a posture hearing with SOUTHCOM recently and Admiral Faller talked about the lack of dedicated ISR. He has not unique in that.

Anytime we have a posture hearing with combatant commands, this is a very common theme. Sometimes, it makes me think of, you know, the old joke about the CEO that said, I gave my legal counsel an unlimited budget and they overspent it.

I think the demand for ISR is sort of endless, but ISR is so critical, obviously, to our combatant commanders really getting a handle on and successfully executing any missions that they have.

I have a large collection of commercial satellite providers in Virginia who, when these issues come up, they often say that they think that they can provide ISR to combatant commanders in a way that would complement and combine with our DOD ISR capacities to help us out.

General Dickinson, I am kind of interested to hear your perspective on whether commercial satellite providers could be woven into the architecture of ISR to be provided to combatant commands in a way that would be helpful or do you see challenges or limitations that would make that difficult?

General DICKINSON. Thank you, Senator.

I am an advocate for the commercial ISR capabilities. I think when we look at the total, as you mentioned, the ISR requirements, that we may never have enough and we will always ask for more. I agree with that comment, particularly, as we look at some of our competitors, in particular, China and how they are developing themselves into a global projection capability around the world and the fact that our ISR or our ability to see them and understand what is going on, not only them, but other competitors, as well, is very, very fundamental to our military operations.

I think the intertwining or interweaving the commercial industry into that is absolutely necessary and I think gives us a great advantage. I will tell you right now that we do rely on commercial

ISR in terms of what we do each and every day in the U.S. Space Command. So, I look forward to that. It is very exciting to watch to see how the commercial market, not only with ISR, but with other space capabilities, is actually, you know, developing, maturing, and in my words, kind of exploding.

I mean, if you just look at SpaceX, for example, with the Starlink constellation, where they are able to put out 60 satellites on one rocket shot. To build a constellation of now, I think over 1300 satellites in low-Earth orbit is amazing and really shows what the commercial industry can do in support of the space domain operation. So, I agree, I think it should be part of the, or it is today and it should continue to do so.

Senator KAINE. General Dickinson, I am heartened to hear that, and I will just conclude and yield by time back by saying that Senator Gillibrand's question about creating norms in space becomes very important. The more we use either state-based satellites or commercial satellites, nations all over the world are doing it, the more the prospect of collisions and then space debris affecting everybody else's investments become a real challenge.

It is hard to imagine us continuing to be vigorous investors in space satellites all around the world without some kind of international norms where these investments are protected. So, the DOD's involvement, along with other parts of the U.S. Government in creating those norms is really important, and I was glad to hear your answer to Senator Gillibrand on that topic, as well.

So, with that, thank you, and I yield back, Mr. Chair.

Chairman REED. Thank you, Senator Kaine.

Let me recognize Senator Ernst, please.

Senator ERNST. Thank you, Mr. Chair, and, gentlemen, thank you so much for being here today and sharing your testimonies with us. Your commands do represent very crucial capabilities for our national defense, so thank you, again, for your input as we continue to develop different policies, whether it is strategic, nuclear deterrence, or, of course, space.

So, making sure that we have the resources necessary is extremely important and, recently, Chief of Naval Operations, Admiral Mike Gilday, recently said, we need to innovate and we need to modernize. Early adoption of emerging and disruptive technologies, as well as the need to protect our infrastructure and technologies from strategic competitors is absolutely critical.

I believe that is true, not only in the Navy, but also to our nuclear and space programs.

So, Admiral Richard, as we are looking at the modernization of our nuclear triad, again, going back to those resources, there is going to be a tremendous price tag. I think we all recognize that, but can you discuss for us the margins for delay and the potential costs that we would face if we try to spread out these recapitalization efforts over a period of years within the nuclear triad, not really getting to the heart of the issue.

Admiral RICHARD. Senator, one, thank you for the question, and, two, what I would start with is, we don't have an opportunity to spread these costs out, right. We have life-extended to the maximum extent possible. So, to maintain the level of defense that we have historically assumed in this mission, right, to not take any

further risks in this area, I need the first of these recapitalizations to start showing up on time. We don't have any further opportunity to do that.

I do want to present that we can afford this as a nation, right. We only do this every 40 years. If you look at the context of what these decisions are and costs relative to all the other things this nation chooses to spend its money on, these are trivial, compared to that. This is a choice this nation makes as to how much risk it wants to take in this mission issue.

I think this exactly what Secretary Madison meant when he said, we can afford survival.

Senator ERNST. I think that is so brilliantly put.

Not only can we afford it, we must afford this. I think that is a great way to say that, Admiral.

So, talking a little bit more about the ICBMs, and if we were allowing the ICBM legs to atrophy, such that it is no longer a credible leg of the triad, what would that then mean to Russia and China, but also for our allies, and can you describe how our allies would react if we no longer had that viable ICBM leg.

Admiral RICHARD. Senator, let me put it this way in terms of what it would do relative to Russia and China. I said that China is not yet able to execute every plausible nuclear employment strategy at intercontinental range. If I were to build a list of the top-five things the United States could do to accelerate China becoming a strategic peer of ours, number one or number two on the list is to get rid of our ICBMs, because you will have solved a problem that they can't currently solve right now. That would be the implication for that, and they can do the math and our allies can do the math and they will see that we are not backing up our words with our actions. We will lose credibility, and it will affect our extended-deterrence insurance.

Senator ERNST. Thank you, sir.

General Dickinson, as well, as we talk about, you know, congestion in space, there are over 50 different space-faring nations and a number of space ventures, as you outlined in your opening remarks. Those will continue to climb.

So, the risks and opportunities, what are those risks and opportunities that space congestion presents to the command and how do we overcome them?

General DICKINSON. Thank you.

So, the risks to the command are that it is becoming more congested in terms of what I mentioned with the over 1300 satellites, which is a good thing in terms of, you know, free-market economy, commerce, space commerce, but it is becoming a more challenging problem. So, the risk becomes that it could become more unpredictable in space, more things to look at, more things to make sure that don't collide as they are in each of the orbits. But the benefit to that, I think, we can see, you know, the world economy, in particular, for space, is booming, and so, we need to do that, but we need to look at it as a domain like we looked in other domains in terms of how do we manage that to make sure that we have a safe and secure space domain.

Senator ERNST. Thank you very much.

I yield back. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Ernst.

Let me recognize Senator King, via Webex.

Senator KING. Thank you, Mr. Chairman.

General Dickinson, I would like to follow-up on Tim Kaine's question to a little bit about the security of our space assets. It seems to me that in a conflict, the very first thing that an enemy will try to do is a major cyberattack and to try to blind us.

Senator Kaine talked about commercial satellites. Is redundancy, itself, a strategy for protecting the assets; in other words, lots and lots of small satellites rather than these large, multi-billion-dollar satellites that we have traditionally depended upon, but a redundant constellation of small satellites that would be harder to disable.

Because, do you agree with me that going after our satellites would be one of the first things an adversary would do in a conflict?

General DICKINSON. Thank you, Senator.

So, my opinion on that is I believe the small satellites, many satellites in orbit provides us a very redundant, resilient capability. That would be very difficult to degrade once we have it established. It will provide us the ability to do many different types of missions, whether it is communications, whether it is ISR, whether it is missile-warning; those types of activities, I think, will absolutely be more redundant, more resilient if we have, what I would call a mesh network, if you will, in a constellation.

In terms of what would happen first, I believe we are in competition each day both, space and cyber, and for us, our ability to compete on a daily basis in the competition phase is very important to what we are doing. That could very well be the first, that you mentioned, could be a cyber attack followed by something in space. But we are watching that each and every day, and like I said, I think in terms of the redundancy, that is a great technique or opportunity.

Senator KING. Thank you.

Admiral Richard, one of the scariest terms I have heard recently is escalate to de-escalate, which I understand is a stated policy of the Russians in terms of the use of tactical nuclear weapons in order to chock everyone into backing off.

Is that something that concerns you in terms of our relationship to Russia and their relationship to nuclear weapons?

Admiral RICHARD. Senator, yes, the short answer is yes. Actually, it may be thought of more as escalate to win, but not to mince words, and so, the whole idea here is for that and anything else they consider doing, to show that that won't work, right, that the costs that we could impose are greater than what they may gain by attempting that strategy, that is the essence of deterrence here and, in fact, the introduction of the low-yield ballistic missile weapon, I remind, we have always had a low-yield capability inside the arsenal. We just added one now that has a much higher probability of facing the threats that we have today. We think that that has successfully improved deterrence against that very strategy.

Senator KING. Well, to go back to Senator Rounds' question, the fundamental strategy here, and a lot of people, we have gone 25 or 30 years and not thought too much about nuclear weapons, but

the whole idea is that those other countries that have nuclear weapons know that we do, too, and that we have the capability to inflict enormous damage on them if they use the nuclear weapons. That theory of deterrence has worked for 70 years.

I take it from your comments that you believe that modernization is critical to maintaining the credibility of the deterrent. It is not a deterrent unless your adversaries believe it will work, and isn't that the essential case for modernization?

Admiral RICHARD. Absolutely, sir.

Fundamentally, a deterrent is not credible unless the opponent or the other side does the calculation and comes up with, we can either deny that, missile defense is a good example of it, or we can impose a cost.

It doesn't have to be a nuclear cost. We are thinking very hard. We are the only nation that can go all domain worldwide. I applaud the Secretary's efforts at improving cross-domain deterrence, but in the end, given the threats that we face, there has to be a nuclear component to it, because we don't have a combination of other things, yet, that can deter that.

Senator KAINE. Well, the fundamental theory is that you have nuclear weapons in order to never have to use them. That is what it is all about, isn't it, Admiral?

Admiral RICHARD. It is, and I have said that before, in that it is the only weapons system you don't have to pull the trigger on for it to work. The mere destructive potential of the system changes the way people think. It changes the decisions they make. That is what we mean by, we use it every day.

Senator KING. A very quick question, I am out of time, but a very quick question. If there were some serious threat, how long would it take to get the bombers aloft?

Admiral RICHARD. Sir, it is a short period of time. I would prefer to answer that in closed session, if I could.

Senator KING. We will follow-up later. Thank you very much.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator King.

Senator Cotton?

Senator COTTON. Thank you, gentlemen, for your service and for your appearance.

Admiral Richard, I want to speak about the Nuclear Posture Review, which is underway, as is the custom of administrations. I am concerned that low-level political appointees, a Deputy Assistant Secretary of Defense and Deputy Assistant Secretary of State may be subverting the integrity of Secretary Austin's review.

Earlier this month, those political appointees gave an interview in Japanese media, implying the reduction of funding for our nuclear forces and, perhaps, even the enactment of a sole-purpose nuclear policy. Neither of those appointees, of course, have been confirmed by the

United States Senate.

Were either you or Secretary Austin consulted before they made these public comments?

Admiral RICHARD. Senator, no. No one at STRATCOM or myself was consulted.

Senator COTTON. Do you believe that it would be in the best interest of our Nation to go to a sole-purpose nuclear policy?

Admiral RICHARD. Senator, no. I think, again, that that would remove a level of ambiguity that has had useful deterrent value to us. We have never, as a nation, chosen to do that.

Senator COTTON. That would undermine our ability to deter, for instance, chemical or biological attacks if we use the sole-purpose policy?

Admiral RICHARD. By policy, we would not consider a nuclear response to those types of threats.

Senator COTTON. Do you think allies like the United Kingdom or Japan would like the United States to move to a sole-purpose policy?

Admiral RICHARD. Sir, you know, in the end, I would have to defer to OSD policy, but my indications, conversations is there would be apprehension. It would depend on exactly how we worded it.

Senator COTTON. Okay. Thank you for that.

I hope the integrity of that Nuclear Posture Review is not subverted by low-level appointees who have never been reviewed by the Senate.

I want to move to China. I know you have probably touched on some of these points, but I think there are a few questions that are more vital today. We know what Russia has. We know the threat Russia poses. They have posed it for 60 or 70 years.

But I think China is a menacing and rapidly growing threat both, in terms of the quantity and the quality of their nuclear forces. Give a sense just how fast their increasing the quantity of their nuclear forces.

Admiral RICHARD. Senator, I just gave an order at STRATCOM 2 weeks ago that any threat brief or any brief that is discussing China that is more than a month old must be updated with our intelligence folks because it is probably out of date. I can't get through a week right now without finding out something we didn't know about China.

Senator COTTON. In terms of the quality of these forces, it is true that they are moving rapidly towards having a functioning nuclear triad, just like the United States and Russia, which is to say, bombers, submarines, and missiles; is that right?

Admiral RICHARD. Senator, that is correct.

Senator COTTON. On those ground-based forces, in some ways, their quality is more survivable and less detectible than ours since they are moving towards, say, sold-fuel rockets, which give you less warning, since you don't have to stand up the missiles and fill them with liquid fuel or road-mobile and road-mobile missiles, which can be moved around on the back of a tractor-trailer or a train, something this country doesn't use; is that right?

Admiral RICHARD. Senator, that is correct.

The road-mobiles of both, Russia and China are challenges to make sure that you can maintain accountability of them.

Senator COTTON. It is hard to find a tractor-trailer with a missile on it in a country the size of China, which is as big as the United States, right?

Admiral RICHARD. Both countries are very good at hiding them.

Senator COTTON. You spoke something a few moments ago, and I just want to point out that you said that eliminating our ground-based missiles would be one of the best things that could happen to Chinese planners, and is that because the number of our missile systems complicate their targeting?

Admiral RICHARD. Senator, that is correct. You would solve a problem right now that they don't have an answer to.

Senator COTTON. Which is, to use a colloquial term, the missile sync, with all of our, I know you may not like to use that term, but with all of those missiles that we have out in the Midwest and the Rocky Mountain states and just the sheer quantity of targeted sites if you are Russia or China is very complicated to hit.

Admiral RICHARD. It certainly requires a scale of attack that is, makes it very obvious what is going on, and part of why I don't like the term missile sync is there are a lot of things where we have forgotten how we got here. An example is bolt out of the blue, right. Highly improbable. We all agree with that. We would be the first to tell you that. We look at this risk every day.

But we forget why it is improbable, right. We made it improbable as a nation. We invented the ballistic-missile submarine. We invented launch under warning, launch under attack. It is improbable because it probably won't work.

We can easily take steps to make it more probable if we forget what it is that got us here.

Senator COTTON. That is right, and that would be the case, not just if you took the radical step of eliminating an entire leg of our triad, the ground-based missiles, but even if you substantially reduced the amount of ground-based missiles; is that correct?

Admiral RICHARD. Senator, fundamentally, I have got to have enough capacity, right, and I am now about to face an additive threat from China. These numbers that we have were based on a threat situation from years ago.

So, I am apprehensive right now. Well, I certainly need everything that is in the program of record, if you want me to do what the President ordered me to.

Senator COTTON. So, I will just conclude with a point I often make. We hear from some misguided and misinformed people on the left who might want to eliminate a leg of our triad or eliminate the entire nuclear forces. This fanciful idea that somehow we can rid the world of this weapons system.

It is often said we spend so much on weapons we never use; to the contrary, we spend very little on these nuclear forces as a percentage of our Defense budget, certainly as a percentage of our overall economic. Second, we use these, every single day and we have used them every single day for 76 years to deter another war like the terrible wars of the first half of the 21st century.

Chairman REED. Thank you, Senator Cotton, via Webex.

Senator Warren.

Senator WARREN. Thank you, Mr. Chairman, and thank you to our witnesses for being here.

President Biden has expressed some concerns about the need, the affordability, and the safety of the Trump administration's nuclear weapons policy, and for good reason. The previous administration's modernization plans including items like a new sea-launched cruise

missile and a low-yield warhead. Like any new administration, the President's team is taking some time to conduct its own review.

So, Admiral Richard, you are the commander of U.S. Strategic Command. Whose job is it to determine the nuclear policy of the United States, your job or the President's job?

Admiral RICHARD. Senator, it is the President's job. I am obligated to provide my best military advice.

Senator WARREN. I appreciate that.

Do you agree that the new administration should be allowed to conduct its own review and that it shouldn't feel obligated or pressured to rubber-stamp the previous administration's plans?

Admiral RICHARD. Ma'am, I absolutely agree with that.

I also request an opportunity to make sure that that review, and in fact, I would broaden it. I, again, state that I think it is a mistake to think of deterrence in pieces, that nuclear is somehow separate from conventional, is somehow separate from space and cyber. You have to look at all of that. I would ask that it be fully threat-informed, and that I have an opportunity to provide the operational implications of potential policy choices.

Senator WARREN. But you are going to do the operational part here. The President does the policy part.

I appreciate your saying this, because you made some comments early in January that puzzled and, frankly, concerned me on this score. On January 5, after President Trump had lost his bid for re-election, you told some reporters that the purpose of a forthcoming Biden administration review of nuclear weapons policy should, quote, validation that we like the strategy that we have.

It also sounded like to me that you were saying that there was no reason to change course. You stated, quote, this nation has had basically the same strategy dating back to the Kennedy administration, end quote.

So, now, it is your job to provide input and recommend options to the President and the Secretary if you are asked, but that doesn't mean making public comments to try to box in the President's decision-making. I understand that you believe you are operating well within the scope of your responsibilities, but I am concerned and I want a commitment from you that you are not going to infringe on or undermine the administration's review.

Do I have your commitment on that?

Admiral RICHARD. Senator, you absolutely do, and my reference to our strategy was not in relation to any one administration. I also said I can trace the lineage of our current strategy back to the Kennedy administration.

The Nation can have any strategy that it wants and then that leads to a commensurate need for a stack of capabilities, policies, and postures to execute that strategy. I would just like to make sure that the Nation——

Senator WARREN. I appreciate that——

Admiral RICHARD.—understands the risks it is taking in those decisions.

Senator WARREN. I appreciate that you will make that risk clear so that the President and the Secretary can work together to make a decision on this.

You know, we are currently spending $44 and a half billion a year on nuclear weapons and I know that STRATCOM likes spending that money, but I don't. The purpose of the ongoing review is to, quote, reduce the role of nuclear weapons in our defense strategy, end quote. I agree with that goal and I think it is incompatible with that staggeringly high level of spending.

Every administration makes administration makes strategic decisions about our force structure and modernization and when it comes to nuclear weapons, those decisions carry tremendous weight. As STRATCOM commander, your role is to support the U.S. Nuclear Doctrine that is set by the leaders elected to grapple with those decisions, not by military officials alone.

So, I look forward to seeing the results of the administration's review and I know you will swiftly implement whatever they determine.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Warren.

Senator Tillis, via Webex.

Okay. Now, Senator Cramer.

Senator CRAMER. Thank you, Mr. Chairman.

Thank you, Generals, both for your service and for being here.

I might just, well, I guess I feel compelled to follow-up on what Senator Warren was just talking about. One of the things that I have found frustrating often times is that the self-governed in this country, don't know what we know. A lot of times that is okay, but a lot of times it is not so okay.

So, Generals, both of you, I appreciate the fact that you are both, that you both travel a lot throughout the country. You have both come to my state in your current positions, and that you both are willing to speak openly, but always, always respectfully about the threats that we face, because, quite honestly, I think one of the great threats in this country is when the people assume we know what we are talking about aren't aware of the threats. So, thank you for doing that. A well-informed, several-governed country is the best.

I guess I don't feel the need to ask any more questions about whether you support a triad versus something else, Admiral. I have appreciated your opening statement, as well as your answers to several questions, reaffirming the importance of all three legs of the triad.

We have talked a lot. You have answered questions, specifically, of course, about the ground-based strategic deterrent and I appreciate that, and the fact that a delay in the modernization will cost both, money and perhaps security.

So, let's move over to the LRSO. You know, our B–52s are incredible weapons, especially in the hands of our great airmen like we have in [inaudible], but I am afraid that we will be risking too much and asking too much of those airmen if we take away the LRSO and get it off-track.

So, if the LRSO were cancelled or delayed beyond the service life of the legacy air-launch cruise missile, do you think our air leg of the triad would be viable or would it be compromised?

Admiral RICHARD. Senator, the short answer is no. The bottom line is that without an LRSO, you, in effect, don't have an air leg

or you have at least put it back to sort of a 1950's version of an air leg with much less capacity than they had back then.

I do want to go a bit further. It is not only that it is almost a miracle that they all can fly, I think my predecessor General Hyten testified to that a couple of years ago. To think that a weapons system designed to go against Soviet analog defenses is going to be able to get through sophisticated Russian and Chinese defenses, I think is optimistic, and the outcome on its first day wasn't good enough for what we are going to need for it to do today. I can give you the details on that in closed session.

It was designed for a different era. I need a modern weapon in order to do what I have been ordered to do.

Senator CRAMER. With limited time, I am wondering which of these last questions I want to ask, but I am going to continue on with the strategic deterrent commander. I know you are acutely aware that credible U.S. nuclear deterrence relies on uninterrupted nuclear command, control, and communications, the NC3 system, and that the mission depends on secure operational technologies, as well.

The recent hack of the Florida water treatment facility certainly highlighted the cyber vulnerabilities of our OT system, a threat that is only exacerbated when you add in the NC3 component.

Can you update the Committee on efforts of STRATCOM to ensure that cyber protection both, to the infrastructure and NC3 are on track.

Admiral RICHARD. Sir, that is a very extensive answer.

The things that we are doing, I will answer this, and I have a separate responsibility as the commander of the Nuclear Enterprise Center with the Department-wide responsibilities for nuclear command and control. Fundamentally, I am confident in our NC3 cyber resiliency. It exists in relative isolation. It has tremendous redundancy. It gets the best intelligence. We have an intelligence fusion center, thank you Congress for directing that, General Nakasone.

So, everything that Space Command just mentioned that they get support for, we get that and additional abilities to maintain the standards here. The number-one thing I need to do to be able to say that in the future is that I have to modernize the system, right. I have to get it out of legacy modes of operation in order to pace this threat going into the future, but I am confident today.

Senator CRAMER. To both of you, and I will start with you, General Dickinson, in addition to the Bomber Wing and the Missile Wing at Minot, of course, North Dakota contributes by having the 10th Space Warning Squadron at Cavalier. Maybe this is a good opportunity for me to ask both of you, but, again, starting with General Dickinson, how do the two commands work together to enhance the credibility of U.S. deterrence against adversaries who are competing with us, really, in every domain?

General DICKINSON. Thank you, Senator.

So, that missile-warning architecture is a very integrated capability within U.S. Space Command. We provide that missile warning to U.S. Strategic Command on a daily basis and we work very closely together. I mean, in general, as you know, Senator, we respond out of U.S. Strategic Command when we stood up U.S. Space

Command, and so, our daily interaction, our daily operations together is very nested and synchronized.

Senator CRAMER. I thank both of you.

Mr. Chairman.

Chairman REED. Thank you, Senator Cramer.

Via Webex, Senator Manchin.

Senator MANCHIN. Thank you, Mr. Chairman. I appreciate it.

Thanks to both of you for your service to our country and the commitment by your families for their service. I think they need to be commended, also.

The first question I want will go to both of you, but Admiral Richard, with the current and planned advancements in missile technology, such as hypersonics from our adversaries, defense of the homeland can no longer be taken for granted. So, my question would be, Admiral Richard, would you tell me about the adequacy of our current missile-defense batteries, like the Ground-Based Interceptors, the PAC–3 missile, and [inaudible] platforms.

Admiral RICHARD. Senator, I would, in the end, defer to the operational commanders of those systems. For example, for Ground-Based Interceptor, that is Northern Command; however, from my vantage point, in terms of my mission sense and my overall responsibility in missile defense for advocating and operation support, we have an adequate missile defense today. We do need to make sure that we pace it into the future against the threats that we are seeing.

The number-one thing that I would prioritize is both, the ability to warn and the ability to track birth-to-death, because it is not only the defensive pieces to it, that is missile defense. On the missile-warning side, I need to be able to posture forces and posture people in advance of the threat or I have to take other operational decisions over.

Senator MANCHIN. General Dickinson, if you could tell me how STRATCOM and SPACECOM are working to integrate future missile-defense technologies, like a Space Sensor Layer with our current systems to maintain global awareness, and the quickest reaction possible to these threats.

General DICKINSON. Thank you, Senator.

So, we work very closely hand-in-hand with U.S. Strategic Command and all the other combatant commands in terms of the integrating, as I mentioned earlier in terms of taking existing terrestrial-type radars that have not necessarily been used before, particularly in the space domain, but in this particular vignette with hypersonics. We continue to look at the integration of those assets.

We are also working very closely with the Missile Defense Agency in growing capabilities on orbit that will help us address that problem, our dilemna with hypersonic weapons.

Senator MANCHIN. Admiral Richard, your testimony states the next generation of deterrent forces must encompass responsive weapons systems, world-class personnel, resilient infrastructure, and intelligence-informed decisions.

Can you describe the steps that you have taken or relationships that you have established, to ensure the timely and initiate flow of intelligence in order to provide decision-makers with accurate,

timely information that is going to be needed to make these decisions.

Admiral RICHARD. So, a number of steps. Again, I am fortunate in terms of the priority that is given to strategic deterrence intelligence needs by the intelligence community. I have a number of relationships and a number of liaisons. I mean, as one example, I have 300 Defense Intelligence Agency personnel assigned to STRATCOM headquarters as part of our ability to go do that.

Additionally, we have a specific stack of strategic intelligence requirements that have been given to the intelligence community and I receive great support in terms of that.

Senator, if I could real quick, I just want to add, going back to the missile-defense piece, because it has been asked a couple of times. We are very satisfied with the way that Space Command has taken over the sensor commander function, right, by utilizing sensors across missile-warning, missile-defense, and space situational awareness. I am actually getting better missile-warning data and the Nation is getting better utilization of the assets that it purchased.

Senator MANCHIN. Well, that will go right into General Dickinson. As we all know, the availability of speed and communicating data are and always will remain a vulnerability for our forces, and with the ease of optical or tightbeam communications, utilizing lasers in a space environment, that speed is increased substantially.

So, the question would be, that is very impressive, but how is SPACECOM working to bring that speed of communications back down to Earth as we may speak?

General DICKINSON. So, Senator, that is, what we are currently working with, I think some of the work that General VanHerck has done in all-domain awareness, I fully support the efforts that he is undertaking, as well as the Department in terms of increasing our able to communicate at speed so that we can make the proper decisions at the proper time.

What we are doing at U.S. Space Command is kind of looking at the current command and control systems that handle these volumes of information and we are looking at ways that we can integrate those capabilities to provide an all-domain capability where we can see and do and act with speed of relevance to the situation at hand.

So, we are looking at existing command and control architectures that we can leverage. We already have a very robust one in the space domain, but we continue to look and how we can leverage all of them together in an all-domain fashion.

Senator MANCHIN. Okay. I just want to thank both of you, Admiral Richard and General Dickinson. Thank you, both, for your service, again, and thank you for being here today.

Chairman REED. Thank you, Senator Manchin.

Now let me recognize, via Webex, Senator Tillis.

Senator TILLIS. Thank you, Mr. Chairman.

Gentlemen, thank you for being here and your years of service.

Admiral Richard, I want to start with you. I was in the Committee room when you gave your opening statement and towards the end you were talking about how we are losing our advantage

and you want on to say that we could reach a point to where no amount of money would allow us to catch back up.

Would you go back and give a little bit broader context to the specific areas that you think that that threat is real and maybe over what sort of timeline if we don't have adequate resources or authorities, that we could reach that tipping point.

Admiral RICHARD. So, Senator, what drives me to say that in the opening statement is the observation that we have delayed this recapitalization so long that we are getting to points, key pieces of infrastructure or key talent areas, human talent areas where we have not had to do something in 30 years. The best examples are on the weapons complex side of the house right now. There will be more in the delivery system and the command and control that shortly follow.

It is a situation that we don't normally face as a nation. Normally, when we make a decision, and if we find out we were wrong, we can come back 2 or 3 years later and buy it back. We can change our minds. We have to write a bigger check. We try to avoid doing it, but at least we can.

We are now at the point that if we lose some critical pieces of infrastructure or we lose some key talent bases, a specific example would be how you make a nuclear reentry vehicle heat shield, right, we haven't done it in 30 years.

You would think we had never done it before. If we lose those talent bases, you can't buy it back. It will take 5 to 10 years to either retrain and redevelop the people or rebuild the infrastructure. We don't normally face decisions like that.

Senator TILLIS. Thank you.

General Dickinson, you mentioned 32,000 space objects out there. I think you said somewhere on the order of about 7,000 are operational.

I have been reading a lot of articles on space junk and the dangers that they could pose to the International Space Station, commercial assets. How much of solving that problem, our emphasis on it, and how many resources are actually dedicated to that?

I think Senator Shaheen touched on it, but is this the threat that I perceive it to be, based on publications of the last month or so?

General DICKINSON. So, Senator, that is a mission area within the command that we do every day. It is about 32,000. It grows, as we see, with the commercialization, if you will, of space with multiple [inaudible] companies now moving into the space domain. It is something that we do and we do a very good job at that, in terms of making sure that we are able to predict where we may have a problem with either a conjunction or a collision on orbit.

We have a very close relationship with NASA. To your mention of the International Space Station, a very close working relationship, where we provide them with that information and they use that information to do, take whatever actions they may feel is appropriate to maintain a safe environment for the astronauts and cosmonauts onboard the International Space Station.

But it is one that we spend a lot of time doing each and every day.

Senator TILLIS. Going forward, I followed Starlink since they first set up the first dishwasher-sized satellites to provide broadband,

ubiquitous broadband. I read a report earlier this week that while they are topping a thousand on orbit now, their goal is to have over 40,000 on orbit.

How are we working in the commercial space to make sure that we are sequencing more object in space with the goal of not making it more difficult for you to do your job? To what extent would you play a role, if any, in the commercial decisions and permitting to allow more to go on orbit that create a more complex challenge for you?

General DICKINSON. So, Senator, my responsibilities lie in predicting and understanding where those objects are or the satellites are. The actual interaction with the commercial company on how they should conduct a space launch or on-orbit activities with their satellites really kind of goes back to a licensing capability or a licensing process that I believe the FAA actual conducts with each of those companies before they launch.

Senator TILLIS. Then, my remaining time, I am kind of curious about how SPACECOM and STRATCOM are going to work together to create a credible U.S. deterrent, particularly, when we seem to be challenged in every domain. So, how are your two commands working together to face up against those threats?

General DICKINSON. So, Senator, I will answer that first and then I will turn it over to my shipmate here, Admiral Richard, but we work every day with that. One of the notable things within the U.S. Space Command is the stand up of our joint fires element within the command that actually does that deterrent-type of work in terms of the space domain.

But we are very integrated with the rest of the combatant commands to include U.S. Strategic Command and that daily activity in terms of deterrence, not only in the space domain, but in all the other domains. Because as the Secretary of Defense has asked us and told us to do is that deterrence is not just one domain; it is all domains, all the time, and so, our synchronization and coordination of those activities, in particular, on orbit, and then for the other pieces, the other domains is very fundamental. But our relationship and synchronization with U.S. Strategic Command is very close.

Senator TILLIS. Thank you.

Admiral RICHARD. Yes, Senator, if I could just add, not only to endorse everything that General Dickinson just said, but Chairman Milley and Vice Chairman Hyten have made it really clear, it is not just our two co-coms; it is all co-coms, right. We are driving hard towards global integration both, in planning and operations. We see that as a necessary way forward into the future.

Senator TILLIS. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Tillis.

Let me now recognize Senator Rosen, via Webex.

Senator ROSEN. Thank you, Chairman Reed and Ranking Member Inhofe, for holding this important hearing.

I would also like to thank Admiral Richard and General Dickinson for testifying today and, of course, I am grateful for their service to our country.

But I would like to speak a little bit about explosive nuclear weapons testing, because last May, the prior administration was

reportedly considering resuming explosive nuclear weapons at the Nevada National Security Site, the only facility in the Nation equipped to accommodate underground nuclear testing. This is for the first time since 1992.

Nevadans do not want to return to a time when explosive nuclear testing was allowed in our state. It puts the health and safety of Nevadans in jeopardy.

So, to prevent this outcome, Senator Cortez Masto and I introduced legislation requiring congressional approval before any future explosive nuclear weapons testing were to take place.

So, Admiral Richard, you told the Senate Armed Services Committee last year that there is no condition under which you would recommend the need for renewed nuclear testing.

Can you confirm for me, please, today, that there is no current need for a resumption of explosive testing in Nevada or elsewhere, to ensure the reliability of our nuclear arsenal.

Admiral RICHARD. Senator, as you know, I am obligated by Congress to report on my assessment of the combat-readiness of the stockpile. That includes an assessment on the need for nuclear weapons testing.

So, you are correct. I have certified the stockpile. I do it annually in writing, and I have stated that there are no identified conditions at this point that would require nuclear weapons testing to restore that confidence.

But I further stated in it that I am concerned about the Nation's test-readiness and that I endorsed the lab director's calls, the NNSA, nuclear weapons labs, for a national review of our test-readiness to understand where we sit.

Senator ROSEN. Thank you. I would like to build on that and ask if you agree that a resumption in explosive nuclear testing, which would violate longstanding, international norms, might provide other nations with an incentive to resume their own explosive nuclear testing activities and, more broadly, would impact global peace and security.

So, what are you thinking in that realm?

Admiral RICHARD. Ma'am, I would defer the political implications of a nuclear weapons test to OSD policy or the State Department. I think from a technical standpoint, a bigger driver in terms of any nation's decision to conduct a test has to do with what level of confidence do they have that their nuclear weapons will work to their standards and what other mechanisms they may have; in other words, how much confidence do they want and by what means do they want to get it.

Senator ROSEN. Thank you. I will move on, but I will just reiterate, we want no nuclear explosive testing in Nevada or anywhere across this country.

But I would like to build now on what Senator Gillibrand spoke about earlier, a cyber mission in space. It is no secret, of course as anyone knows, our adversaries see the value of the space domain, developing counterspace capabilities to undermine our interests. So, this week, I plan to introduce with Senator Blackburn, legislation to build a civilian cybersecurity reserve to ensure additional cyber capacity at our times of greatest need.

So, General Dickinson, does the newest branch of the military, do you currently possess the necessary workforce to fulfill your cyber mission effectively, and how can we help support your needs in growing the workforce?

General DICKINSON. Thank you, Senator.

In terms of the cyber piece that you mentioned earlier, I would say that is probably General Jay Raymond's avenue or area in terms of what the service, the Space Force provides.

But as a combatant commander, I can tell you that I have the resources that I need right now and I am confident in our ability to protect my space missionaries, my critical space missionaries that I do each and every day.

My relationship with Cyber Command in terms of working with Paul Nakasone and his team, is very close. As the newest combatant command, I have gotten resource that I have determined that I need in order to have a resilient cyber capability or protection within the missionaries, I will have today.

Senator ROSEN. Well, thank you.

I was able to, last year, help get the PROMOTES Act passed, which has a junior ROTC STEM track now and we hope that that will help grow our young men and women as they join JROTC early to help build all of our capabilities and technology in the military. Thank you.

I yield back.

Chairman REED. Thank you very much, Senator Rosen.

Let me recognize Senator Scott, please.

Senator SCOTT. Thank you, Chairman.

Admiral Richard, I read your op-ed from February and I appreciate your candid assessment of the challenges we face regarding Communist China.

Have you seen anything with regard to behavior, military spending, posturing, and public statements that lead you to believe that Communist China has any interest in cooperating with other countries on nuclear weapons?

Admiral RICHARD. Senator, I have not. They have a very opaque policy. It makes it difficult to determine anything about what their intentions are, but I certainly have not seen anything that looks like cooperation.

Senator SCOTT. If we don't spend sufficiently to modernize our nuclear forces and Communist China achieves its goal of having an effective nuclear triad by the middle of this decade, what are we facing in terms of defending United States interests in the Indo-Pacific Region and beyond?

Admiral RICHARD. Senator, it would be two things, one of which is they could use those capabilities coercively in a way that would limit our decision space in crisis; additionally, it will rip out the underpinnings, by which all the rest of our forces are employed, right. We would not be able to deter China from simply escalating right past us if the stakes were high enough in a crisis or conflict.

Senator SCOTT. So, the value of having forces in South Korea and Japan would be just wasteful. There would be no ability to help them.

Admiral RICHARD. We would be the first to tell you that those forces are important, but you have to backstop them with a stra-

tegic deterrent to dissuade the opponent from attempting to do something like that.

Senator SCOTT. Thank you.

General Dickinson, are we on pace, given what we expect from the President's budget to be able to defeat Chinese and Russian goals in space?

There is no question they each want to dominate in this area, and do you believe that we will be able to stop them, given our current spending plans and policy?

General DICKINSON. Senator, I think at this point, we are on a glide path to that capability. Our ability to protect and defend on orbit is that those capabilities and capacities are growing, and I think that is very important as we look to the future. But to answer your question, I think we are on a glide path.

Senator SCOTT. So, do you believe that going forward, that we are going to be expected, like the President's budget doesn't have much of an increase in Defense spending, do you think we are going to, that is going to be enough to pursue the goals that you have?

General DICKINSON. Well, so, for the command over the last year, we have done our first analysis of the requirements, if you will, for the combatant command, and I have delivered those requirements to the Department of Defense, as well as the services, and in those requirements, I have identified my priority in terms of developing better space domain awareness in terms of being able to understand what is happening in the space domain, to characterize that, and to understand what our adversaries and competitors are doing there.

So, in terms of the budget for this year, I think it is satisfactory for what we are doing right now.

Senator SCOTT. Admiral Richard, do you think we are clear enough about our relationship with Taiwan and our interest in making sure they remain, you know, independent of Communist China?

Admiral RICHARD. Senator, ultimately, I would defer to the Department of State and OSD policy in terms of what is the best course of action there.

What I am committed to doing is making sure that the United States military has the ability to set the appropriate operating conditions and deter Chinese strategic capabilities to allow us those options for the rest of the force and the Nation.

Senator SCOTT. So, if we are in the position that we believe that we can deter them from doing something, why are they doing all the flyovers now? Why is Communist China doing, taking the aggressive action they are taking against Taiwan right now?

Admiral RICHARD. Sir, fundamentally, I would defer. You would have to ask China that question, right, but that is a point that gets back to deterrences linked, right. We have to pay attention all the way down into thresholds below conventional armed conflict to make sure that we are putting these things on the right trajectory in the long term.

Senator SCOTT. I want to thank both of you and thank all the men and women that serve with you.

Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Scott.

Senator Kelly, please.

Senator KELLY. Thank you, Mr. Chairman.

Admiral Richard, thank you for your testimony, General Dickinson.

I would like to discuss for a couple of minutes, the ground-based strategic deterrent effort. The program to replace the Minuteman-III and its command and control system is significant. Often, large programs like this are threatened when there is budgetary pressure.

Now, my understanding is that there is not a cost-effective way to modernize the Minuteman-III and that the 60-year-old missile needs to be replaced.

Can you explain in detail, Admiral Richard, why that is, and what new capability are we going to get with GBSD.

Admiral RICHARD. Senator, first, I would offer the Department has sent several pretty detailed reports to Congress that go into that, and so I would refer to those.

But biggest picture, I need a weapon that can fly and make it to the target. Minuteman-III is increasingly challenged in its ability to do that. There is almost no possibility of an upgrade on that, relative to the threat.

In particular, I would draw attention to the cyber capabilities, right. Minuteman-III is a very old system that we have to be able to cyber defend, and the GBSD will come with a great improvement inside its cyber defenses, as well as the overall operational availability, redundancy and reliability of its command and control.

Senator KELLY. Well, thank you.

The Russians have been modernizing their systems. Can you highlight some of the upgrades that they have been making in delivery system, command and control, and their warning systems, just top-level.

Admiral RICHARD. I mean, Senator, they, across the board, are operating new equipment. They are on their second generation of a new ballistic-missile submarine. They have a new ballistic missile for that; it is quite capable. They have a very impressive, solid-fueled intercontinental ballistic missile, brand new. They have new road-mobile missiles. They have up-gunned their bombers. They have new weapons off their bombers. This is in addition to the novel capabilities that I described in my opening statement. They have new command and control. They have new warning. They are exercising at a level we haven't seen since the Cold War. President Putin plays in those exercises, and we are seeing readiness levels like we have not seen before. So, is an across-the-board, comprehensive improvement in their strategic capabilities; again, about 80 percent complete right now.

Senator KELLY. On the B61 Mod 12 program underway, going to give us more accuracy of smaller CEP for that weapon and that weapon system. Do you see this mod of the B61 being able to last here for the next 20 years or so or do you see a point where we are going to have to find a new air-launched, ballistic bomb?

Admiral RICHARD. So, for the B61, right, I do think that modernization program will serve our well going into the future. That is a gravity weapon, as you well know, and that is, in particular,

of importance to NATO, in terms of our extended deterrence and assurance commitments. So, I am satisfied that that weapons system is going to serve us well.

Senator KELLY. Thank you, Admiral.

General Dickinson, when we spoke last week, we discussed the importance of cooperation and communication with other spacefaring nations to deal with the common challenges that we face with orbital debris, a challenge I had to deal with myself, personally, on a number of occasions. You know, these communications are critical for advanced warning, as well, test launches with competitors like Russia and China.

I want to, just in the remaining time in your view, you know, how good are the current structures for communications with Russia and China concerning orbital debris, but also, when they launch unexpectedly, it could be to put payloads in orbit, and if the communications systems are not adequate, what could we do right now to improve those?

General DICKINSON. So, Senator, we, as I mentioned——

Chairman REED. Microphone, please.

General DICKINSON. So, we communicate with our competitors in terms of what is going on in the space domain.

Could it be better?

Yes, it could be better. But we communicate to them electronically through a website called space.org that has a catalog or has information on there that we can alert them to a potential collision in space. So, we do communicate in that way, but I do believe that we could improve upon that as we go forward.

Senator KELLY. That would be true for a test launch, as well?

General DICKINSON. Yes, it would be for test launches, as well, so that we can make sure that we understand intention, as well as what activity they may be doing in the space domain so that we can ensure that we provide a safe environment for space operations.

Senator KELLY. Thank you, General.

General DICKINSON. Thank you.

Chairman REED. Thank you, Senator Kelly.

Senator Peters, please.

Senator PETERS. Thank you, Mr. Chairman, and to both of you, thank you for your testimony here today and your service to our country.

General Dickinson, in your opening remarks, you addressed space-situational awareness in the context of your work with the Department of Commerce and its open-architecture data repository. So, my question to you is, could you ever foresee space-situational awareness being a wholly Commerce function with Space Command playing a supporting role, and if not, why?

General DICKINSON. I think as we look to the future and, really, the current situation that we have now, as I mentioned, 32,000 pieces of debris, objects on orbit. As we move forward, I do believe that we will see that as a, or we should see that as a purely administrative type of function in terms of tracking objects in the space domain.

My job at the U.S. Space Command is to not only understand that, but also be able to characterize what we are seeing in the

space domain so we can understand what our adversaries' intention may be and their capabilities. But I see in the future that as we move towards that, that that could be a wholly administrative-type function, similarly to what the FAA does right now, in terms of making sure the air domain is safe.

Senator PETERS. So, if that would be a Commerce function, you would be supportive of that, as long as you are playing the role that you mentioned?

General DICKINSON. Yes.

Senator PETERS. On the same topic, in 2020 alone, I any Senator Kelly mentioned his involvement with it in space, as well, but the International Space Station had to perform three maneuvers to being hit by space debris.

Has the command, your command undertaken any initiatives to contend with space debris by participating in commercial efforts, such as the LSAD launch that occurred last month?

General DICKINSON. We are looking at those types of opportunities right now, because that could contribute to our ability to understand the domain better.

Senator PETERS. Very good, and, as well, General, I have another question for you. Much like the economy at large, our operations in space are going to be facilitated not by just the purchase and the operation of hardware, but also the utilization of services that will allow us to maintain a robust presence in space.

For example, in Michigan, we have a company called ATLAS Space Operations in Traverse City that is involved in the assistance of launch operations, communications, other types of services, and they are doing very innovative work in that area. Under your command, how is SPACECOM utilizing private sector partners, who can provide a variety of these kinds of capabilities?

General DICKINSON. So, Senator, out at Vandenberg Air Force Base, which is part of the U.S. Space Command, we have a Commercial Integration Cell where we are working every day with the commercial industry in terms of understanding capabilities that they are bringing online, as well as on-orbit type of activities. I think we have close to 90 different companies that we work with out there.

Senator PETERS. Great.

Admiral Richard, in your opening remarks, you described the submarine-launched nuclear missile as necessary to address regional deterrence challenges from both, China and Russia, but increasing the flexibility, in your words, quote, providing a more credible deterrent to a limited attack against the United States, end of quote.

Could you explain what you mean by, quote, more credible, and does a submarine-launched cruise missile fill that capability gap to our extended deterrence posture?

Admiral RICHARD. So, sir, when I say more credible, that was in relationship to the low-yield, submarine-launched ballistic missile aspect of that. You can't deter if you can't get to the target, and that weapons system has a better ability to do that it. It makes it more credible in the eyes of the other party.

The second part, on the sea-launched cruise missile, it goes after more the large disparity that we have in non-treaty accountable

weapons between us and the Russians. I use that term very specifically. Sometimes, they are used as strategic versus non-strategic. I think that distinction is increasingly irrelevant and a large number of so-called strategic weapons are a direct threat to the homeland, in addition to our forces regionally, and to our allies.

The sea-launched cruise missile would give us an ability to not rely on host nation's support and give us an ability to, again, provide an effective counter to the disparity that we see in non-treaty accountable weapons.

Senator PETERS. Well, as you know very well, deterrence depends on capability, on credibility, and communication, and when a *Virginia*-class submarine launches a Tomahawk cruise missile into Syria, for example, China, Russia, and other nuclear powers can now credibly recognize that such launches are carrying conventional munitions.

My question is, if attack submarines reacquire the capability to launch nuclear weapons, then, does that mean that Beijing and Moscow will need to worry about every missile launch within the range of their territories, and are you concerned, therefore, that this added ambiguity might lead to some sort of miscalculation?

Admiral RICHARD. Senator, what I would offer is I think that it is a fundamental error to try to determine what the payload is on any weapons system by assigning it to a particular trajectory. You can make any trajectory carry any payload.

The Nation has long had a cruise missile, nuclear cruise missile capability. Russia and China, or Russia has it today.

So, the idea that we will somehow sort out what a threat is, based on its profile, I think, is a flawed idea to begin with and we certainly don't characterize anything based on the flight profile coming at us.

Senator PETERS. Great. Thank you, Admiral.

Chairman REED. Thank you, Senator Peters.

I recognize Senator Sullivan, please.

Senator SULLIVAN. Thank you, Mr. Chairman, and, gentlemen, thank you for your service and your testimony today.

You know, I was in a hearing last week, an oversight hearing, and one of my colleagues on the other side of the aisle was kind of putting out this number of 10 percent, his estimate of the military was extremist, racist. I think in my experience, and I am still serving in the Marine Corps Reserves, that number is absurdly high. It wasn't based on any data. That would make about two hundred or 250,000 members of the Active force supposedly fitting within that category, which I think is a disparagement of our men and women in the military. I got a little heated in that hearing last week, because I am really tired of hearing about, you know, what, supposedly is all the bad things about the members of the military, when I think it is some of the finest young men and women in America serving, volunteering to serve.

Is that your experience, 10 percent, 1 in 10, 250,000 active-duty forces are somehow extremist, racist?

It is an absurd number, but it gets thrown around in the newspaper, and I am trying to get the men and women, like you, who is served for decades to kind of give me your view.

Admiral, General, I know that is not the purpose of the hearing, but I think it is really important, particularly for the men and women that you are leading, and that we have oversight of, to let them know that we don't think a huge majority of the force is extremist; obviously, some of my Senate colleagues do, which I think is absurd.

Can I get your view on that.

Admiral RICHARD. Let me go first on that one. I am very confident that the number of extremists in my forces is zero and let me explain why I say that.

The Department has made it clear for decades that we don't tolerate that. My forces are a little bit different.

We have certainly done everything Secretary Austin has told us to do. He has made it very clear what the standards are, but it is reiterating a standard.

Every person in my organization has to have a security clearance, for starters, right. When you fill that form out, and I have been filling it out for 40 years, there is an extensive battery of questions designed to get after that very point. Then somebody goes and investigates you, and then they go talk to all of your references, and then they go talk some more, hunting for that very thing.

We don't care what the source of extremism was. Those date back to Communism is actually what they were looking for when I first came in, and today they will even go look at your social media. If you can't pass that part, I don't even see you. Then on top of that, in my forces, we have a personnel reliability program for these. So, you now have peer-monitoring brought in and a number of other standards.

So, if there are any extremists in my organization, one, they hide it very well, and, two, it is just a matter of time until I get to them.

Senator SULLIVAN. So, you are saying that you agree with me, these are some of the best men and women in America and to be besmirched by the media or a senator, 10 percent is ridiculous.

Admiral RICHARD. Sir, I will just explain what the standard is that we uphold. It is contrary to the Uniform Code of Military Justice. It is essential for good order and discipline, and my forces meet the highest standard of that, that DOD requires.

Senator SULLIVAN. Great. General, your view on this?

I know you have a lot of experience, given your decades in the U.S. Army.

General DICKINSON. Thank you, Senator.

So, in my organization, a very similar organization to the U.S. Strategic Command. So, space, as we all understand, and I know we have talked about it many times in terms of the classification or the security clearances that are required within my organization to be able to do the things that we do in the space domain and terrestrially. We have the same rigor in terms of some of the questions that are asked during their security clearances in terms of getting them to the proper clearance level so they can perform their duties within my command.

I would tell you right now that we have done everything that Secretary Austin has asked us to do in terms of training and awareness, but in my organization, I would say that number is

zero. We are very keen and aware of these types of activities or what would lead to those, and we understand that very well.

So, in terms of years of experience, yes, I would tell you that in the formations that I have had throughout my career, I have not seen that. So, I believe that it is close to zero in my organization, if not zero.

Senator SULLIVAN. Thank you.

But nothing nearing 10 percent. Ridiculous, in my view, but, obviously, you guys, you gentlemen would agree.

Let me just ask one final question. Admiral, it is for you. As the North Koreans continue advancement of their weapons systems, what can we do, are you concerned it is going to outpace our ability to defend the United States Homeland, I am talking about the GBI system, and what can we do to accelerate development of the next generation of interceptor, and does it make sense to have 20 empty silos right now at Fort Greely?

Admiral RICHARD. Senator, one, I think the Nation has the right standard and policy when it comes to missile defense relative to rogue threats, with North Korea right now being the defining example of that. Obviously, that is something we may go review, but right now, I would start off with, I think that is the right pace.

We will have to pace that threat. I certainly support Northern Command's requirements to be able to do so and would look for the Department, understanding resource limitations and other mission sets that are in competition for us to maintain that standard in terms of our missile defenses.

Senator SULLIVAN. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Sullivan.

Senator Blumenthal, are you prepared? Senator Blumenthal.

Senator BLUMENTHAL. Thanks, Mr. Chairman.

Thank you both for being here. Thank you for your extraordinary service.

Admiral Richard, we have interacted before on a number of submarine-related events and I thank you for your service, particularly in that area.

General Dickinson, thank you for embarking on this very promising, important new area.

At a recent hearing, I expressed my concern about white supremacist actions and extremism in our military and I want to just be clear that I said at a prior hearing, it was a very small percentage of our troops that potentially were involved in these activities.

I am sure it is well under 10 percent, as I believe I indicated then, but I think any percentage of white supremacist or violent extremism in our military is intolerable and unacceptable. I hope you both agree.

Admiral RICHARD. Senator, I certainly agree with that, right, that extremism, you are either on team Constitution or you are not, and if you are not, you have no place in our military.

General DICKINSON. Senator, I agree, as well. There is no place for it in our military today.

Senator BLUMENTHAL. As you know better than all of us, General, much of the operational information utilized within SPACECOM remains very highly classified and is often restrictive

in terms of access. I have been an advocate in many other areas of sharing more information with the American public so that they understand the threats and the risks in this area. Right now, I think there is almost no awareness among the American public.

What can be done to make the American public better informed and aware of the challenges, to use a euphemism, that exists in your domain?

General DICKINSON. Senator, thanks for that we.

I would say that is probably, in my words, one of the most visible things that U.S. Space Command has done over the last 20 months, in that we have been able to articulate and call-out some of the activities that we have seen in orbit that we would determine, at a minimum, dangerous; at a maximum, or the other end of the scale, as threatening.

What I am describing is what we have seen over the last year, 2019 and 2020, with the on-orbit activities of the Russians, in terms of conducting an on-orbit anti-satellite test, as well as a ground-based missile, anti-satellite test that was threatening or demonstrating a capability that they have.

In other words, Senator, our ability to be able to discuss that, like we do in many other domains, air, land, and sea, is very important to what we do, and really working very closely with the intel community, we have been able to do that.

So, in terms of classification and being able to declassify that so that we are able to communicate and talk not only to the American public about it, but also our allies and partners around the world to make sure that we understand what they are building and what their future intent could be.

Senator BLUMENTHAL. That was my next question.

Do you think that there are procedures for declassifying information that make our ability to share information with our allies and partners operational?

General DICKINSON. So, Senator, we are working that every day. Just the fact, last year, that we were able to come out publicly and describe what I just mentioned about their on-orbit activities is a big step in the right direction.

We continue to work within the Department, as well as within the intel community, so that we can continue to do that and do it more frequently.

Senator BLUMENTHAL. Thank you.

Thank you very much, Mr. Chairman.

Chairman REED. Thank you, Senator Blumenthal.

Senator Hawley, please.

Senator HAWLEY. Thank you, Mr. Chairman.

Thank you, gentlemen, both of you for being here. Thank you for your many years of service to our country.

Admiral, can I start with you, and I want to talk about little bit about the B–2 Whiteman Air Force Base in my home state of Missouri, of course is proudly home to the B–2 bomber. In your testimony, you wrote that the B–2, and I am quoting you now, is the only heavy-payload, penetrating stealth bomber in the world, able to hold at risk, heavily defended, hard, and deeply buried targets.

I just want to give you an opportunity to talk about why this is so important for our strategic deterrence and what it is we need

to do to ensure that the B–2 continues to be effective until the B–21 comes fully online.

Admiral RICHARD. Well, sir, that summarized it, in terms of, that is the only capability that we have to hold certain targets at risk that are very important in our ability to deter that, right. It is known that that weapons system can do that. That changes decision calculus of people that we are trying to deter.

I applaud Air Force efforts, right, to maintain the B–2 all the way through, with its full range of capabilities, while simultaneously taking all the steps necessary to bring the B–21 in on time, such that the Nation maintains this capability going into the future.

Remember, in addition to its penetration capabilities, one key aspect that the bomber leg adds is its flexibility; the fact that we can move it all over the place. That provides a deterrent benefit.

It certainly provides assurance to allies. You see us doing that with these forces today, and it is signaling. It is visible, right. We can directly show our, it is the best way we have to directly show our resolve as a nation by what we do with this piece of the triad.

Senator HAWLEY. Very good. Thank you.

Let's talk about China a little bit. You said earlier today that what it is going to take to deter China is going to start to be additive to what we have to do with Russia. Can you just elaborate a little bit on what you mean by additive.

Admiral RICHARD. So, fundamentally, I am required to deter all nations that I am assigned, all the time, right. I don't get to do it one at a time. I have an obligation, such that we are able to meet all the objectives simultaneously with everybody that is involved.

Until recently, it was pretty reasonable to assume that with the margins, right, for uncertainty that are built into our strategic forces, it would be reasonable to assume you had sufficient residual capability to deter any other lesser-included case. That is about to no longer be true, and that is what I am talking about. I can give you some specific numbers in closed session, Senator.

Senator HAWLEY. Very good. Thank you for that.

Tell me this, what do you think that China's progress from a nuclear dyad to triad says about their view of a no-first-use policy?

Admiral RICHARD. Senator, that, along with everything else in my mind, is fundamentally inconsistent with a no-first-use policy and the implied minimum-deterrent strategy.

But maybe more importantly than independent of what their intent is, it certainly gives them the capability, if they choose to, to any number of possible employment strategies. So, even if that was the basis of the decision, it still allows a very large range of possible employment strategies, independent of why they got it to begin with.

Senator HAWLEY. Very good.

Admiral, tell me, many of those who advocate for shrinking or eliminating our ICBM force are also strong proponents of international arms control, and I am just wondering from a Defense point of view, is it your view that cutting our ICBM force would help or hurt our negotiating position in future arms-control negotiations with Russia or China.

Admiral RICHARD. Senator, the way I approach that, fundamentally, that negotiation is the responsibility of the Department of State, with input from OSD policy, and I would defer to them on what the best negotiating strategy is.

I just have to look at what the actual capabilities are now and what I have to have to deter that. So, my strong advice is arms control would be excellent. Additional arms control would reduce the threat. Get the arms control in place first before we then decide to take reductions in our capability.

Senator HAWLEY. Let me ask you one final question and here in my remaining seconds about the danger of a simultaneous conflict. In your testimony, you wrote that prudence dictates military planners consider and account for the complex threat environment enabled by the strategic cooperation of Russia and China.

Tell me how you are thinking about the threat of simultaneous conflicts in both, Europe and Asia, and how that informs your thinking of what we are going to need to maintain strategic deterrence in the coming years.

Admiral RICHARD. Deterring opportunistic aggression going into the future will be a challenge that we haven't faced on this scale in a long time. So, if we are engaged in one theater, other folks sensing opportunity, and it is not only for their own individual aims. We also have to think through what they might do in cooperation with each other, because while they both have different national aims, both of them are inconsistent with us and it is to both of their advantage for us to potentially give constrain in a particular area.

So, it is not only opportunistic; it is in combination. This three-party world that we are in is something we have never faced before, and we have a lot of work to continue to do to think our way through that.

Senator HAWLEY. Thank you very much for that and your testimony.

I will have some questions for you, General, for the record, and thank you for being here and thank you for your service.

Thank you, Admiral.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hawley.

Senator Blackburn, via Webex.

Senator BLACKBURN. Thank you, Mr. Chairman.

Thank you all for the time today to talk a little bit.

General Dickinson, I want to come to you. SPACECOM, the Southeast is home to three of our Nation's top-12 university programs for aerospace engineering. So, we are very excited and think it is appropriately placed, having SPACECOM there in Huntsville. We look forward to hosting this in the future and hearing more about SPACECOM. I appreciate some of the vastness of your area of operations, and it really is, quite literally, limitless. I see a range of reach in space and look forward to that.

So, let me ask you this, is there a role for SPACECOM in traditional Departments of Commerce and Transportation-like functions, such as the shaping of the domestic ecosystem of space activity, space traffic management, launch licensing, and other space ac-

tivities, because we know that, certainly, the Chinese are already working on this.

General DICKINSON. Senator, I think what you just described is appropriate. I think as we look at the rapid commercialization of space, just from the United States' perspective, in terms of numbers of capabilities and satellites going into orbit, that the actual administrative piece to that, which is the licensing and those types of functions, absolutely are part of the whole-of-government type of activity.

For me at U.S. Space Command, my job is to make sure that I provide that secure environment through my ability to understand what is going on in the space domain in terms of what our competitors, potential adversaries are doing there, in terms of characterization of that, and understanding what their intentions might be.

Senator BLACKBURN. Where are you in working with the Department of State and our partners and our allies to create norms of behavior in space, to include beyond near-Earth orbit?

General DICKINSON. Senator, I work very closely with OSD policy and the Department of Defense on helping to characterize maybe what we would think would be norms of behavior, but the work there is actually with the Department of State and how they are characterizing that.

My job in U.S. Space Command is to make sure that I provide them that type of information that would show them or illustrate to them what those activities or behaves would be on orbit, in terms of our adversaries and competitors.

Senator BLACKBURN. Okay. Now, if there were to be a conflict that began in or either transitioned to space, how do you interpret your current responsibilities to defend U.S. commercial assets?

General DICKINSON. So, my "protect and defend" responsibilities in the space domain are one of my fundamental mission sets for this command and I do that in a number of ways. One is understanding the environment. Two, is communicating that to, in this case, a commercial entity so that they are aware of that, and we do that. We are integrated very well with some of our commercial partners out at Vandenberg Air Force Base in one of my subordinate commands, and so we work every day to do that. But we would do that in a timely manner so that we are able to make them aware of activities.

Senator BLACKBURN. So, you believe these responsibilities are appropriate in scope and scale?

General DICKINSON. So, Senator, I would take that in terms of my responsibilities and direction from the National Command Authority, on which assets, in particular, to protect, in that case, and in terms of the resources, I have resources today that are growing in capacity and capability over the next few years to help me.

Senator BLACKBURN. Okay, and then, when it comes to development and enhancement of our space-based sensor layer, what would you say is the top threat that we should be hedging against and what should be our priority investment to counter that threat?

General DICKINSON. So, the pacing threat, the pacing challenge for, in the space domain is like it is in the other domains, which is China. They are growing capability and capacity as we have seen over the last several years. If you look at just the gross number of

satellites that the Chinese have today, based on what they had just, you know, 10 years ago, they have gone from, back in 2010, they had about 70 satellites on orbit; today, they have well over 400.

Senator BLACKBURN. Okay.

General DICKINSON. We know that is growing in capability and capacity to probably be over a thousand by year 2030. So, they are the pacing threat for us in the space domain, just as they are in other domains.

Senator BLACKBURN. Okay. I have a couple questions for Admiral Richard. I will submit those as a QFR.

Thanks, Mr. Chairman.

Chairman REED. Thank you very much, Senator Blackburn, and now let me recognize and salute the patience of Senator Tuberville.

Senator TUBERVILLE. Thank you, Mr. Chairman. Thank you.

I know they are getting tired. Look, they look hungry and they probably need to go to the restroom, probably, so I won't be that long.

First of all, thank you for your service. I can't imagine starting a new team from scratch. I can't imagine that. I never had to do it in football, and I just had 120 players, and, General, you have got your hands full, and thank you for your service, and an important service.

Admiral, I like your forcefulness in terms of, hey, we need to modernize at the end of the day. You have had a team for a long time, or we have had a team that is getting old and we need new players and we need new equipment.

I like what our secretary says. We can afford survival, and he is exactly right. All the money we are spending, we can afford it.

You know, growing up, we were all in a space race, General, and we are in a new one now. It is a competition that we have to win. The Chinese have weaponized space, sadly.

Many in our country don't understand that American life depends on our secure and reliable access to space, whether it is the GPS on our phones or watching a football game.

Admiral Richard, you are a native of the great state and, General Dickinson, I know you worked at Huntsville as Army Missile Command, and you both understand firsthand that Alabamians stand firmly behind our men and women in uniform. Alabama's industry stands behind our military.

Alabama and Redstone Arsenal are ready for Space Command, but many people in this room probably don't understand Redstone. Redstone has been involved with space operations for 70 years. NASA's only facility on a military base is the Marshall Space Flight Center. The largest consumer of space products is the U.S. Army and the Army Missile Command and has been at Redstone Arsenal since it was established in 1962.

Space technology won't just be developed by the Government to outpace China and Russia, which is going to be a challenge. We need private industry. The area around Redstone boasts 800 suppliers and contractors building the very latest in space technology.

I was at Redstone 3 weeks ago and Redstone has the land for Space Command to grow as your mission expands. It has dedicated

64 acres behind the fence as Space Command and the base has temporary spaces for you right now if needed.

So, General, I am looking forward to you calling the Great State of Alabama your home, and, Admiral, you are welcome to come any time.

General Dickinson, thank you for your productive call last week. My colleague asked how much of a civilian workforce we might move to Huntsville. I would like to follow-up on that question. First, how much do your civilian workforce have you hired and how many people do you intend to hire in the future?

General DICKINSON. Senator, my approved manning document is about 60 percent civilian. To date, we have hired probably about, not quite a third of that into the command. The command, right now, is about a third of what our in strength will be. So, we are a little over 600. Some of that is contractor. Some of that is civilian, and some of that is military.

So, as we look to the future, you know, we are absolutely looking at incentives that we can provide to our civilian workforce. They are absolutely the bedrock of the command today and into the future, and so, we will look at how we can try to incentivize our civilian workforce in terms of making the move to Alabama.

But I can't give you, like I said earlier, I can't give you a prediction on what that percentage will be. There are a lot of factors that go into it. What we can do, though, is try to incentivize them through motivation, in terms of wanting to work with the command, and some other things that we will consider, as well.

Senator TUBERVILLE. Well, we are proud that the Secretary of Air Force selected Alabama as the home for Space Command.

How do you see the National Guard implementing into that, at all? Do you, at all, in the future in Space Command and Space Force?

General DICKINSON. Senator, as we speak now, the Reserve component is a very important part of the U.S. Space Command. As a matter of fact, when we stood up or we established about 20 months ago, one of our biggest elements or components within the command was the Reserve component.

It was the Reserves and the National Guard. That is a very important part of the command. They bring a great deal of expertise and knowledge to the command.

I see that in the future, too. We will always, as part of Space Command, have the Reserve component as an element within the command.

Senator TUBERVILLE. Admiral Richard, Russia and China are prioritizing investments to compete and win across the range of strategic capabilities, especially with regard to nuclear and space capabilities.

Do you believe that we are behind the curve?

Admiral RICHARD. Senator, I have what I need to do to deter, to do what the President has asked me to do, but I need it modernized, right. There is no remaining margin.

We cannot extend or delay any of the modernization programs for me to continue to say that in the future.

Senator TUBERVILLE. Do we have the technology we need?

Admiral RICHARD. Senator, yes, right now.

The one area that we are working the hardest on to make sure we are fully taking advantage of new technologies is in the nuclear command and control system. We have got the next 5 years locked in pretty tight.

Trying to make sure that we take full advantage of technological development both, from the Commercial Sector and the Government Sector, will be keys to improving that in future iterations.

Senator TUBERVILLE. Thank you very much.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Tuberville.

Gentlemen, thank you for your testimony.

We will now close the open session, adjourn, as quickly as possible to SVC–217 for the classified section.

I have a conflict with the Appropriations Committee. If the ranking member arrives first, he will begin the initiation of the questions.

With nothing [inaudible] or no other business before the Committee in the open session, I adjourn the hearing.

[Whereupon, at 11:59 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR KIRSTEN E. GILLIBRAND

NUCLEAR-TIPPED CRUISE MISSILES

1. Senator GILLIBRAND. Admiral Richard, prior to the previous President reversing course, two Democratic and two Republican administrations had agreed that we no longer needed to deploy nuclear armed cruise missiles on conventional Navy ships. Why is a new nuclear sea launched cruise missile needed now, particular in times of fiscal austerity?

Admiral RICHARD. The military requirement is driven by the increasing threat; i.e., the dramatic deterioration of the strategic environment.

Specifically:

- Russia has recapitalized roughly 80 per cent of its strategic nuclear forces, has as many as 2000 nuclear weapons not under arms control agreements, and is capable of producing hundreds of warheads per year. Further, Russian strategy, doctrine, and capabilities call for the limited use of nuclear weapons to coerce NATO, and to defeat NATO conventional forces through wider use of nuclear weapons if coercion fails.
- China continues heavy investment in nuclear capabilities; has an intercontinental ballistic missile / submarine launched ballistic missile (ICBM / SLBM) dyad which will soon become a triad and is ahead of pace to more than double its nuclear stockpile by end of the decade. China's actions in the South China Sea, Hong Kong, Taiwan, and ballistic / hypersonic missile development significantly add to the threat—and they are likewise unconstrained by treaties or agreements.

Deploying the nuclear-armed sea-launched cruise missile (SLCM–N) is intended to deny potential adversaries any mistaken confidence limited nuclear employment would provide an advantage over the U.S. and its Allies.

SLCM–N will bring a needed non-strategic regional presence and an assured response capability. It does not require host nation support and provides additional diversity in platforms, range, and survivability. It will enhance our ability to tailor deterrence and assurance while expanding the range of credible U.S. options.

Reintroduction of the SLCM–N (and other supplements) is intended to strengthen deterrence by convincing adversaries the U.S. has credible and effective options at any level of conflict, and they cannot coerce the U.S., our Allies and partners through the use of nuclear weapons.

2. Senator GILLIBRAND. Admiral Richard, how will deploying these weapons on conventional navy vessels like attack submarines change their mission?

Admiral RICHARD. Deploying such weapons on conventional Navy vessels would not fundamentally change their mission but they would augment their capabilities and provide additional options for the President.

The nuclear-armed sea-launched cruise missile (SLCM–N) is intended to deny potential adversaries any mistaken confidence limited nuclear employment would provide an advantage over the U.S., its Allies and partners.

SLCM–N will bring a needed non-strategic regional presence and an assured response capability. It does not require host nation support and provides additional diversity in platforms, range, and survivability. The SLCM–N complements the low-yield submarine launched ballistic missile (SLBM) to provide assurance to our Allies through tailored response options in vast operating areas where forward basing may not be possible. It will enhance our ability to tailor deterrence and assurance while expanding the range of credible U.S. options.

Reintroduction of the SLCM–N (and other supplements) is intended to strengthen deterrence by convincing adversaries the U.S. has credible and effective options at any level of conflict, and they cannot coerce the U.S., our Allies and partners through the use of nuclear weapons.

THE NUCLEAR TRIAD

3. Senator GILLIBRAND. Admiral Richard, Air Force Chief of Staff General C.Q. Brown, USAF, recently stated "the number [of nuclear weapons] might adjust and that may be a part of a dialogue . . . there'll be a fork in the road at some point." Do you agree with his comments?

Admiral RICHARD. General Brown was referring to a hypothetical dialogue that may occur in the future regarding the appropriate triad force structure, so I would agree and expect many such conversations as we move forward with modernization. General Brown also stated, "We can't stop our work on GBSD [Ground Based Strategic Deterrent]." In a recent visit to Minot Air Force Base, General Brown said "By updating the missile portion of the nuclear triad, we ensure a credible, capable and safe nuclear deterrent that provides our Nation and our Allies an umbrella of deterrence while discouraging others from use of nuclear weapons . . . Modernization of the ICBM [Intercontinental Ballistic Missile] program is both strategic and cost-effective." I fully agree with these statements.

4. Senator GILLIBRAND. Admiral Richard, if you agree with General Brown's recent statements, what kinds of options are you considering in terms of adjusting our nuclear arsenal?

Admiral RICHARD. USSTRATCOM will fully support ongoing strategic and nuclear policy reviews, with a goal of assessing the role of nuclear weapons in our defense strategy while adjusting to the operational implications of policy choices, as well as significant changes to the threat environment.

As such, it is premature to speculate on any potential adjustments to our nuclear arsenal. Any adjustments to our force structure or stockpile size should be informed by a comprehensive strategic review, to evaluate the global threats, followed by a policy and strategy determination.

GROUND-BASED STRATEGIC DETERRENT

5. Senator GILLIBRAND. Admiral Richard, the Air Force recently awarded a $13.3 billion contract to develop the Ground Based Strategic Deterrent to replace the existing Minuteman III intercontinental ballistic missiles (ICBM). Some critics have questioned whether ICBMs are necessary for nuclear deterrence or whether the Minuteman III could be extended for decades. Investing in other programs besides the ground-based strategic deterrent (GBSD) could save $260 billion dollars and create jobs. In a time of fiscal constraint, why should we modernize a weapon system that critics call redundant?

Admiral RICHARD. The three legs of the strategic triad—ICBMs, ballistic missile submarines (SSBNs) and heavy bombers—are complementary, not redundant. Each leg has unique attributes intended to complicate adversary planning while enhancing achievement of U.S. strategic deterrence and extended assurance objectives. The flexibility and responsiveness attributes provided by the ICBM leg are unmatched by the SSBN or bomber legs, and eliminating ICBMs would allow an adversary to concentrate resources on defeating the remaining two legs. For example, without ICBMs China becomes a strategic nuclear peer.

The Air Force's decision point to either continue GBSD or pivot to a Minuteman III life extension program passed a number of years ago, when the DOD approved the Milestone-A (approves program entry into the Technology Maturation and Risk Reduction [TMRR] phase, approval of the program acquisition strategy, and release

of the final Request for Proposal [RFP]) and initiated the GBSD development phase. GBSD is timely, cost effective, and ensures credibility of the ground leg of the U.S. strategic deterrent for decades into the future.

6. Senator GILLIBRAND. Admiral Richard, in your opinion, if we had to continue to rely on the Minuteman III, how much longer could we rely on that system?

Admiral RICHARD. We cannot rely on Minuteman III (MM III) past its currently planned retirement date. Our MM III force is 40 years beyond its designed life expectancy; relies on 20–50 year old technology; requires reverse engineering for costly, inflexible, sustainment solutions; and faces diminishing manufacturing sources, materiel shortages, and skilled labor force losses. A MM III life extension program would be prohibitively difficult, expensive, is already late to need, and will not address future threats.

Previous decisions to delay needed modernization have resulted in aging components, asset attrition, and declining infrastructure. The Ground-Based Strategic Deterrent (GBSD) is a comprehensive weapon system replacement for MM III and must begin deploying no later than 2028 to prevent negative impacts to strategic deterrence. There is no margin to delay the GBSD deployment.

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

COORDINATION WITH INDO-PACIFIC COMMAND

7. Senator HIRONO. General Dickinson, in your opening statement, you noted that Beijing actively seeks space superiority and is developing capabilities that could hold U.S. space assets at risk. How are you working with U.S. Indo-Pacific Command (INDOPACOM) to deter China from attacking our space systems?

General DICKINSON. USSPACECOM is actively working with USINDOPACOM, other Combatant Commands, and the Intelligence Community to improve our posture, strengthen our alliances, and enhance emerging partnerships across the Indo-Pacific to deter China.

Posture/Plans: Since USSPACECOM stood-up, we've been aggressive in our efforts to integrate with the other Combatant Commands, especially USINDOPACOM and USEUCOM. We have Integrated Planning Elements supporting each of the 10 other Combatant Commands. These are members of my staff that are onsite at the other Combatant Commands to integrate space into planning and operations, including Camp Smith in Hawaii. Thanks to the collaborative efforts of our Integrated Planning Elements, USSPACECOM equities are embedded in the other Combatant Commands' planning processes, just as theirs have been incorporated into ours. The understanding that space capabilities are both necessary to enable the Joint fight and are also vulnerable greatly increases emphasis on space planning among the Combatant Commands for competition and conflict. These planning efforts include Posture Plans, which address the necessary forces, footprints, and agreements for the Combatant Commands to meet their Unified Command Plan (UCP) responsibilities and our Contingency Plans to which we will transition if conflict arises.

Strengthening Alliances: USSPACECOM is leveraging our security cooperation plans to focus collaboration with key allies on space domain awareness, force support, contingency operations, and strategic messaging. We are capitalizing on opportunities to increase the frequency of combined operations, exercises, and training with Australia, Japan, Republic of Korea, and New Zealand, including leveraging Global Sentinel, Global Thunder, and Global Lightning to increase resilience and interoperability. We are contributing to collective security in the Pacific by supporting Exercise Pacific Fury, Pacific Sentry, Talisman Saber, Northern Edge, and Keen Edge with space integration experts.

Enhancing Emerging Partnerships: USSPACECOM is working with USINDOPACOM to identify opportunities for enhancing our space relationships with non-traditional space partners in the region who are beginning to show interest in space.

COLUMBIA-CLASS BALLISTIC MISSILE SUBMARINE PROCUREMENT

8. Senator HIRONO. Admiral Richard, construction of the new line of *Columbia*-class ballistic missile submarines started last fall, with the first boat scheduled to be delivered to the Navy in 2027 and then go on its first deterrence patrol in 2031 to begin replacing the Ohio-class submarines. In your discussions with the Navy, has the COVID pandemic negatively affected the procurement timeline for the Columbia-class subs?

Admiral RICHARD. Defer to the Navy regarding the ballistic missile submarine (SSBN) acquisition schedule.

The *Columbia*-class delivery timeline remains on time despite the challenges posed by COVID–19. I applaud continued and focused support essential to build the workforce required to execute construction of the *Columbia* program.

9. Senator HIRONO. Admiral Richard, how confident are you in the procurement timelines I mentioned?

Admiral RICHARD. Defer to the Navy regarding the ballistic missile submarine (SSBN) acquisition schedule.

There is no margin in the *Columbia*-class delivery schedule and any delay will result in an operational capability gap. The Navy continues to make every effort to ensure on time delivery and the program must remain fully funded to replace our aging *Ohio*-class SSBNs.

10. Senator HIRONO. Admiral Richard, why is it important to have a minimum of 12 *Columbia*-class submarines in the Fleet?

Admiral RICHARD. Section 242 of the Fiscal Year 2012 National Defense Authorization Act directed DOD to submit a report on the *Columbia*-class program that included, among other things, an assessment of various combinations of submarines and number of missile launch tubes per submarine.

The assessment concluded at least 12 *Columbia*-class submarines with 16 missile tubes each provided the best balance of performance, flexibility and cost while supporting the Nation's strategic deterrence mission and objectives. This is the absolute minimum capability needed to allow USSTRATCOM to meet our at-sea requirement during the most limiting maintenance intensive times throughout its service life.

It is important to note the assessment was completed during a period of reduced tension. Given today's challenges and anticipated future threats, an assessment completed today would likely recommend additional hulls, missiles tubes, or a combination of both.

HAWAII AIR NATIONAL GUARD SPACE SQUADRON

11. Senator HIRONO. General Dickinson, last year, it was announced that the Hawaii Air National Guard had been selected to have one of four national offensive space control squadrons. I understand that the Hawaii Air National Guard is in the process of establishing the 293rd Space Control Squad based at the Pacific Missile Range Facility on Kauai. What role would members of the National Guard play in U.S. Space Command's (SPACECOM) operations?

General DICKINSON. (Dir, Reserve Forces and Manpower, Col Lisa Johnson)

Air National Guard (ANG) Space Control Squadrons have been providing Space Electronic Warfare in support of Combatant Command requirements since 2018. There are currently three Offensive Space Control units in the California, Colorado, and Florida ANGs respectively. Once all basing actions are completed and the Secretary of the Air Force (SecAF) provides the record of decision, the ANG will stand up a fourth Offensive Space Control Squadron along with the first Defensive Space Control Squadron in the ANG. Specific to the proposed Space Control unit in Hawaii, the Environmental Assessment (EA) will be completed on 5 Aug 2021 with a SecAF Record of Decision anticipated before the end of CY21, Initial Operation Capability (IOC) is projected for fiscal year 2023. United States Space Command commands and controls these forces based on theater and global operational requirements.

IRAN JOINT COMPREHENSIVE PLAN OF ACTION

12. Senator HIRONO. Admiral Richard, before the Trump Administration decided to leave the Joint Comprehensive Plan of Action (JCPOA) agreement, head of the Central Intelligence Agency (CIA) and the Director of National Intelligence (DNI) testified that the JCPOA 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. This is why it's crucial to be a part of an agreement with Iran on the issue of nuclear weapons. The Biden Administration is seeking to rejoin the JCPOA with the condition that Iran returns to compliance under the agreement. What are your thoughts on negotiating a return to the JCPOA?

Admiral RICHARD. Defer to the State Department regarding negotiations of international agreements.

13. Senator HIRONO. Admiral Richard, would rejoining the JCPOA be a good step toward containing Iran's nuclear weapons capabilities?

Admiral RICHARD. I support any agreement that enhances the security of this nation. Defer to the State Department and the Office of the Secretary of Defense regarding whether rejoining JCPOA would enhance the security of the U.S., its Allies and partners.

NORTH KOREA

14. Senator HIRONO. Admiral Richard, in your opening statement you say that U.S. Strategic Command (STRATCOM) is committed to supporting the efforts of Department of Defense (DOD) and the State Department to work with Indo-Pacific partners to reduce military tensions and support the achievement of the fully verified denuclearization of North Korea. What do you think the next steps are to achieve full denuclearization of North Korea?

Admiral RICHARD. As diplomacy is the Nation's tool of first resort, defer to the State Department in this matter.

15. Senator HIRONO. Admiral Richard, what role will STRATCOM play in achieving the goal of full denuclearization of North Korea?

Admiral RICHARD. USSTRATCOM supports DOD and State Department efforts to coordinate with regional partners, reduce military tensions, and engage diplomatic efforts towards achieving the complete denuclearization of North Korea.

QUESTIONS SUBMITTED BY SENATOR JACKY ROSEN

CYBER MISSION AND SPACE

16. Senator ROSEN. General Dickinson, how are you utilizing technologies like machine learning and artificial intelligence to maintain our digital superiority and stay ahead of our adversaries?

General DICKINSON. Digital superiority is one of my key tasks, and we are introducing new technologies and linking current ones to increase our Space Domain Awareness and Command and Control as my top two priorities. As an example, under my Global Sensor Manager (GSM) mission, directed in the Unified Campaign Plan (UCP), I must ingest the sensor data, make the data available and transparent through transport, and curate the data before applying algorithmic machine learning models and artificially intelligent applications to aid the decision making process. The data value chain is foundational to our ability to make decisions concerning objects in space. As noted in the National Security Commission on Artificial Intelligence (NSCAI) final report, there are high-data volumes associated with the space domain that make it particularly well-suited for prioritized integration of AI-enabled applications. In support of the DOD C3I Modernization Strategy, USSPACECOM works closely with the DOD CIO, U.S. Space Force (USSF), and the Space Development Agency and U.S. Cyber Command (USCYBERCOM) to deliver SATCOM governance in support of tightly integrated, hybrid military and commercial, Enterprise SATCOM Architecture.

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH OUTREACH PROGRAMS

17. Senator ROSEN. General Dickinson, the Junior Reserve Officer Training Corps (JROTC) STEM [science, technology, engineering, and math] program is funded through the Army, Air Force, Marine Corps, and Navy. Is this a program that could help SPACECOM carry out its mission?

General DICKINSON. Any program that encourages youth participation in STEM education and follow-on career opportunities has the potential to benefit USSPACECOM. The conversion of some Air Force JROTC detachments to Space Force may be particularly helpful. The JROTC program promotes patriotism, citizenship, and appreciation for the work of the U.S. Armed Forces, yet there is no direct guarantee of a career in the DOD. However, programs which encourage STEM activities have the potential to enhance the talent base from which the Services recruit, which ultimately benefits all selective-crewed organizations such as the Combatant Commands. Moreover, these efforts enrich the talent base from which USSPACECOM can recruit for federal civilian employment opportunities following college education.

18. Senator ROSEN. General Dickinson, what are SPACECOM's other STEM outreach programs, and how do you plan to grow them to keep up with the workforce of the future?

General DICKINSON. USSPACECOM has initiated collaboration with academic institutions in order to encourage STEM careers. In the very first year of our standup

I directed the staff to assess the optimum ways to do this. Some of these avenues include leveraging students and graduates in the intern programs we are beginning this summer to increase our diversity and bring cutting edge thinking into the command. We intend to grow the opportunities for USSPACECOM internships in STEM areas where we perceive interest.

STIMULATING INNOVATION

19. Senator ROSEN. General Dickinson, what is your assessment of the report on the "State of the Space Industrial Base 2020" which concluded (among other things) that "The very long schedules of many DOD space programs limit the opportunities for short design-build-test projects that stimulate interest and innovation within the U.S. workforce."?

General DICKINSON. In the past, the capability to build, test, and iterate quickly in space eluded the DOD as the threat did not demand a better approach for providing space capabilities. Our adversaries exploited this shortcoming and rapidly developed space and counter-space capabilities that threaten our space superiority.

Given this new reality, we must regain our advantage through building capability more rapidly at lower cost. In addition, we must leverage the opportunity to partner with commercial space companies and with our Allies and partners in these efforts.

I support any effort that enables the Department and the Nation to develop and field space capabilities more rapidly.

20. Senator ROSEN. General Dickinson, how is the acquisition arm of Space Command working to decrease the timelines for DOD space programs and increase the rate of space experiments and prototypes for small launch?

General DICKINSON. In general, CCMDs do not do acquisitions, but rely on the services, especially the USSF as the primary provider of space capabilities for our mission needs. As such, while we have fostered close working relationships with all of the Services, we are especially linked with the USSF as well as Interagency space capability development partners. We interact with these stakeholders at many levels across multiple requirements, integration, and acquisition oversight and coordination councils.

USSPACECOM, USSF and the larger Space Community, are working to decrease the timelines for DOD space programs through multiple facets. For USSPACECOM, our primary acquisition support responsibility is producing accurate and clear combatant command operational requirements and focus areas based on component operations, lessons learned from exercises and gaming, and a sound analytical foundation. This enables the space enterprise to build and deliver exactly what we need, when we need it.

Additionally, USSPACECOM is aggressively engaging with industry as the innovation, speed, and competitive edge resident in the US commercial market must be woven into the fabric of our operational warfighting architectures and postures. We are engaging our Science, Technology, and Advanced Concepts with the space community and acquisition authorities to accelerate technology maturation in proofs of concept, developmental and operational prototyping, and experimentation.

Finally, in coordination with the Space Development Agency, USSPACECOM is levying space warfighter requirements in support of their payload technology capabilities for future tranche generations. These opportunities, starting in 2024, will enable capability insertion opportunities required by the warfighter, as well as support quick reaction technology upgrades, resulting in decreased timelines for DOD space programs, space experiments, and assessing prototypes.

QUESTIONS SUBMITTED BY SENATOR JAMES M. INHOFE

INTERCONTINENTAL BALLISTIC MISSILE MODERNIZATION

21. Senator INHOFE. Admiral Richard, one of the criticisms surrounding ballistic missiles is that, unlike bombers, they're not recallable should the president reconsider his or her order after launch. However, several press reports over the years have documented occasions where range safety personnel remotely destroyed a Minuteman III ICBM when anomalies were discovered during test flights. Could you explain any technical, operational, or security reasons why such a self-destruct mechanism couldn't or shouldn't be installed on deployed missiles?

Admiral RICHARD. There is no military value to installing a self-destruct mechanism on operationally deployed ICBMs. The only reason such equipment is installed on test vehicles is to ensure safety of personnel and the general public. A self-de-

struct mechanism introduces a potential vulnerability that could impact ICBM force effectiveness and reliability.

Our ICBM force is controlled through secure, reliable, positive control measures, which ensures only the President, in deliberate consultation with senior advisors, can authorize the use of nuclear weapons. We have a strategic triad so the President is never in a position where he / she must make a hasty decision to launch ICBMs or risk losing the capability to respond. The ICBM force will not launch until the President deliberately issues orders.

22. Senator INHOFE. Admiral Richard, during a recent House Armed Services Committee hearing, it came to light that certain offices within the Department of Defense may be advocating for a plan that would cut the number of operational Minuteman III intercontinental ballistic missiles from 400 to 200, develop some means of further extending the life of this system, and cancelling the planned replacement program, the Ground Based Strategic Deterrent. Could you outline the operational challenges your successors would face in deterring two nuclear peer adversaries with a 60+ year old ICBM force that will be half the size it is today?

Admiral RICHARD. Our Cold War-era systems were developed and built to counter a single, peer adversary (Soviet Union). The most compelling argument against reducing our ICBM force structure is we must now deter two peer adversaries (Russia and China) and several regional adversaries (North Korea and Iran). All pose unique threats and challenges; and must be deterred differently. If we reduce ICBM force structure in the face of growing adversary threats, USSTRATCOM cannot meet strategic guidance nor guarantee a credible nuclear deterrent.

Our legacy delivery systems, stockpile, and infrastructure are all well past their intended operational life and are not designed for, nor capable of keeping pace with evolving threats. I do not support any Minuteman III (MM III) force structure reductions (e.g. cannibalizing assets to keep MM III on alert) or pivoting from the Ground-Based Strategic Deterrent (GBSD) program to a life extension effort. While "cannibalizing" the MM III force may defer the asset attrition problem, it does not halt component aging or address identified capability gaps. In 2014, the DOD and USAF considered a MM III life extension program and determined GBSD modernization is the most cost-effective way to maintain the ICBM force. Switching to a MM III life extension now is late-to-need, will result in a capability gap, and adds operational risk to USSTRATCOM's deterrent mission.

STRATEGIC DETERRENCE

23. Senator INHOFE. Admiral Richard, those who favor reducing the size of our nuclear forces often argue that non-nuclear capabilities can be substituted for nuclear weapons without diminishing our ability to credibly hold targets at risk, deter adversaries, and assure allies. For example, some groups argue that conventional or cyber weapons can be substituted for nuclear weapons. Do you think other capabilities can be as effective as nuclear weapons in deterring the highest levels of aggression to the extent that one can be directly substituted for the other?

Admiral RICHARD. While new non-nuclear capabilities offer the opportunity for risk reduction and de-escalation during a crisis, there is little evidence to suggest a nuclear state would be deterred by anything other than nuclear weapons. However, new capability development is one of the few ways to reduce reliance on nuclear weapons, and hypersonic weapons are the best near-term capability to achieve this. The range, promptness, and survivability of hypersonic weapons could provide some effects that today require nuclear weapons.

24. Senator INHOFE. Admiral Richard, in response to a question from Senator Tom Cotton, you stated that reducing the number of intercontinental ballistic missiles or removing that leg of the triad would "solve a critical problem for China". Can you elaborate how that would be the case?

Admiral RICHARD. The triad must be considered as a whole because it functions as a whole, with each leg essential to overall effectiveness. The triad's overlapping attributes ensure the enduring survivability of our deterrence capabilities against attack and our capacity to hold a diverse range of adversary targets at risk throughout the spectrum of crisis or conflict.

The intercontinental ballistic missile (ICBM) force is the most responsive leg of the triad and ICBM geographic dispersion presents an intractable targeting problem, complicating China's (and Russia's) strategies. These missiles are capable of holding a wide range of targets, to include emergent and time sensitive targets, at risk. They are survivable to all but a massive nuclear exchange and possess the highest day-to-day readiness.

Reducing the ICBM force by half would be a unilateral reduction in the face of a deteriorating security environment along with the detrimental messaging to our Allies and adversaries, and would facilitate China's rise as a strategic peer. China's currently intractable targeting problem would be significantly eased and they would be closer to possessing a credible counter-force strategy (i.e., the ability to directly attack our nuclear forces) for the first time in their history.

For the case without any ICBMs, in addition to the above, the potential for a strategic attack on our homeland further increases. A conventional attack on our few (5) submarine and bomber bases would significantly degrade the Nation's remaining deterrent.

25. Senator INHOFE. Admiral Richard, how would going below 400 to 200, or to even zero, be solving a "big problem" that China currently has?

Admiral RICHARD. The triad must be considered as a whole because it functions as a whole, with each leg essential to overall effectiveness. The Triad's overlapping attributes ensure the enduring survivability of our deterrence capabilities against attack and our capacity to hold a diverse range of adversary targets at risk throughout the spectrum of crisis or conflict.

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26. Senator INHOFE. Admiral Richard, during your testimony, you noted that due to Russia's and China's aggressive nuclear modernization activities, the United States, "for the first time in our history . . . is facing two nuclear-capable strategic peer adversaries at the same time, both of whom have to be deterred differently." You also stated that, "China . . . cannot be considered a lesser included case in this context." Could you elaborate on what you mean by these statements?

Admiral RICHARD. Russia and China are pursuing extensive military modernization goals and present different deterrence challenges:

- Russia is constrained by the New Strategic Arms Reduction Treaty (New START, or NST), but maintains a significant stockpile of non-accountable weapons. China is not party to NST and is expected to at least double its nuclear stockpile in the next decade.
- Russia has attacked neighboring states, annexed conquered territory, interfered in foreign elections, and worked to undermine European institutions.
- China cannot be considered a lesser included case as it is on a trajectory to be a strategic peer with the United States and Russia. Specifically, China is expanding and diversifying its nuclear arsenal by rapidly increasing the numbers of land-, sea- and air-based delivery systems, adding capabilities to include multiple warheads, pursuing a launch-on-warning posture, and developing methods to defeat missile defense systems. China continues to invest significant resources in hypersonic systems and is expanding its space and counter-space capabilities.

Deterrence is influencing an adversary's decision-making such that a given adversary is induced to choose restraint over action, i.e., a strategic attack. China and Russia have unique goals, aspirations, interests, and objectives as well as distinct histories, cultures, perceptions and values. Our deterrence strategies must be tailored to each. Neither country can be deterred individually in a vacuum, given the multi-polar nature of today's world. Actions taken to deter Russia will have a measurable impact on China, and vice versa—and this must be taken into account. The threat posed by China is now additive to the threat posed by Russia. Previously, we were able to address both with a force sized for Russia.

27. Senator INHOFE. Admiral Richard, in your best military advice, could you outline what the implications of this multipolar nuclear balance could have for the capabilities you and your successors will need to meet deterrence requirements?

Admiral RICHARD. A multipolar nuclear environment requires the application of tailored and flexible strategies to effectively deter adversaries under various threats and scenarios in all domains during peacetime, crisis, and across the spectrum of conflict. This requires a fully modernized nuclear force and supporting infrastructure that is credible, flexible, adaptable, and resilient.

Our strategic nuclear deterrent underwrites U.S. military operations around the world, is the foundation and backstop of our national defense, and assures Allies and partners. As such, the Nation must remain committed to modernizing and recapitalizing our strategic forces and supporting infrastructure—and fully resource every program each year. Nothing else works as planned or envisioned without a safe, secure, effective, and credible nuclear deterrent.

CHINA'S NUCLEAR MODERNIZATION

28. Senator INHOFE. Admiral Richard, as part of during a recent House Armed Services Committee hearing, a DOD official submitted written testimony that stated that Chinese nuclear modernization is accelerating " . . . in response to perceived threats, including potentially first-strike capability from the United States." Are you aware of any intelligence that would support such a conclusion?

Admiral RICHARD. No. U.S. nuclear capabilities are essentially unchanged since the end of the Cold War, except for getting smaller in size and older. We assess the PRC strategy includes advancing a comprehensive military modernization program to "basically" complete military modernization by 2035 and transform the PLA into a "world class" military by 2049. However, it is difficult to truly know when China will be complete because, due to their opacity, we do not know where they are heading. I believe they are at an inflection point with regard to their accelerated pace of modernization and I know they can no longer be viewed as a lesser-included strategic adversary.

W93

29. Senator INHOFE. Admiral Richard, with respect to development of the W93/Mk7 warhead, an analysis of alternatives is underway, with contributions from DOD and the National Nuclear Security Administration (NNSA). In the past, both the Pentagon and representatives from the United Kingdom communicated the urgency of supporting this program, and the importance of continuing the longstanding cooperation between our countries on nuclear issues. Has anything changed with respect to the urgent need to continue progress this program?

Admiral RICHARD. No. It is neither operationally viable nor cost-effective to indefinitely sustain currently fielded 1980's submarine-launched ballistic missile (SLBM) weapons and expect them to remain militarily relevant against evolving 21st century threats. In addition to U.S. modernization requirements, the W93/Mk 7 program enables us to continue our longstanding support to the U.K. and their warhead replacement program. As an Allied, independent nuclear power contributing to NATO's nuclear deterrence posture, the U.K.'s continuous at-sea nuclear deterrent is critical to strategic security.

30. Senator INHOFE. Admiral Richard, when can the Committee expect the analysis of alternatives to be complete?

Admiral RICHARD. The scope of the W93 design will be more defined as we complete Phase 1 (a concept study to explore alternatives to meet the need), and enter Phase 2 (a feasibility study to evaluate Phase 1concepts deemed viable in Phase 1). Phase 1 is expected to be complete by the end of fiscal year 2023.

NATIONAL NUCLEAR SECURITY ADMINISTRATION MODERNIZATION PROGRAMS

31. Senator INHOFE. Admiral Richard, do you believe DOD and NNSA programs are adequately aligned to meet STRATCOM military requirements for modernizing the Nation's nuclear forces?

Admiral RICHARD. DOD's current delivery systems modernization programs and NNSA's stockpile and enterprise stewardship programs are tightly integrated and aligned to sustain our current capabilities. Across the board, NNSA's stockpile and infrastructure modernization programs required to ensure on-time delivery of weapon capabilities for an effective and credible nuclear deterrent are projected to be either just-in-time or late-to-need. This is evidenced by the recent Critical Decision—One (CD–1) on pit production which projects fielding the 80 pits per year requirement between 5 to 10 years later than the military and statutory requirement of

NLT 2030. On-time fielding of replacement capabilities depends on meeting established schedules, and as with the NNSA, DOD's replacement system capabilities are now projected to deliver just-in-time. There is no schedule margin remaining for either DOD or NNSA.

32. Senator INHOFE. Admiral Richard, if NNSA programs are not adequately funded, could you outline the potential operational impacts that could result if the two Departments' programs become misaligned?

Admiral RICHARD. The continued, chronic underfunding of the maintenance and modernization of the Nation's nuclear weapons infrastructure is the single greatest risk to strategic deterrence. This significantly degrades the U.S.'s ability to achieve strategic deterrence, extended deterrence, and non-proliferation objectives.

Not providing the needed resources to recapitalize invites the very real risk of losing the capacity to field a credible and effective nuclear deterrent, at a time when our adversaries are modernizing and expanding their own nuclear capabilities. Once these capabilities are lost it will take 15–20 years to recapitalize them. In an ever-evolving world of adversaries and Allies, we must be cognizant of the operational implications and national risks of any decision to not fund or divest any capability—and we must have a comprehensive threat-based strategy review to ensure this capability will not be needed for at least a generation.

We are already at a point where nuclear modernization programmatic risks are transferring to me, as the USSTRATCOM Commander, in the form of operational risk. This impacts my ability to meet national-level strategic guidance. If NNSA lacks fundamental infrastructure recapitalization funding, then we will reach the point in less than a decade when a future USSTRATCOM commander testifies he / she can no longer certify the effectiveness of the strategic deterrent force to meet assigned strategic deterrence and assurance mission requirements.

33. Senator INHOFE. Admiral Richard, could you outline the impact to the operational force in the 2030s if plutonium pit production does not reach the Congressionally-mandated target of 80 pits per year by 2030?

Admiral RICHARD. Pit production is a foundational capability, a leading indicator and symptomatic of larger issues in today's nuclear security enterprise. No option below 80 pits per year (ppy) by 2030 fully supports achieving assigned Presidential objectives.

Failing to achieve a pit production capability to meet 80 ppy in 2030 will result in the current stockpile of weapons with components far exceeding intended design life. We will be forced to reuse aged pits for a longer period of time, ultimately leading to deployed weapons with 100 year old pits—a situation where we have no scientific basis to ensure confidence the weapons will function as designed. This scenario may result in the inability to certify the safety, security, reliability and effectiveness of the weapons.

Because pit aging impacts are uncertain, this nation cannot afford to be without the capability to address these concerns—we cannot wait for an issue in the stockpile to occur before addressing it, and pausing work on the current program to reassess requirements is no longer viable. It is in the best interests for the U.S. and Allies to proactively make the required investments versus waiting until a potentially catastrophic safety or reliability concern in aged pits manifests itself.

QUESTIONS SUBMITTED BY SENATOR DEB FISCHER

U.S. NUCLEAR FORCE STRUCTURE

34. Senator FISCHER. Admiral Richard, the New Strategic Armed Reduction Treaty (START) limits U.S. strategic nuclear forces to 1,550 deployed warheads. Currently the U.S. deploys about 70 percent of its treaty-accountable warheads submarine-based SLBMs, no more than 400 warheads on ground-based ICBMs, with the bomber-leg of the nuclear triad making up the remainder. Do you support the current force structure's distribution of treaty-accountable warheads across the three legs of the triad?

Admiral RICHARD. Yes. The force structure's distribution of accountable weapons provides the appropriate diversity, flexibility and resilience to deter potential adversaries from conducting nuclear and non-nuclear strategic attacks, assure Allies and partners, achieve U.S. objectives if deterrence fails, and hedge against an uncertain future.

35. Senator FISCHER. Admiral Richard, would it be your best military advice to preserve the current force structure's allocation of warheads between the legs of the triad for a force limited to 1,550 deployed warheads?

Admiral RICHARD. Yes. Under the New Strategic Arms Reduction Treaty (New START) limit of 1,550 accountable warheads, U.S. nuclear forces are sized and postured to deter potential adversaries from conducting nuclear and non-nuclear strategic attacks, assure Allies and partners, achieve U.S. objectives if deterrence fails, and hedge against an uncertain future.

QUESTIONS SUBMITTED BY SENATOR M. MICHAEL ROUNDS

SPACE LAUNCH OPTIONS—INCREASED DEMAND SIGNAL

36. Senator ROUNDS. General Dickinson, in 2020 you stated, "A mixed architecture increases warfighting resilience by assuring that the loss of any single platform does not result in serious mission degradation or failure. This opens up the opportunity for more frequent refresh of technology and creates an additional demand signal for appropriately sized launch options." Can you elaborate on what you mean by "appropriately sized launch options," and what type of demand signal you envision?

General DICKINSON. "Appropriately sized launch options" means exploring a wide range of cost, schedule, scale, and supply options as well as leveraging partnering opportunities to support warfighter space capability needs. The DOD must take advantage of rapid commercial development, streamlined operational testing processes, and innovative technology advancements to deliver immediate and revolutionary space capabilities on-time.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

MISSILE DEFENSE

37. Senator SULLIVAN. Admiral Richard, the Unified Command Plan directs the Commander, STRATCOM, to be the advocate for missile defense. With that in mind, can you outline what homeland missile defense requirements are needed to meet current and predicted future threats? Please explain why these capabilities are needed and along what timeline.

Admiral RICHARD. Today's missile defense is designed to defend the homeland against a limited threat. The upward trajectory of future threats requires the delivery of enhanced missile defense capabilities as soon as technically and feasibly possible.

Specific improvements include an architecture of persistent sensors to detect, track and discriminate advanced missile threats, including hypersonics; improvements to interceptor reliability, capacity, and lethality; and development of next-generation capabilities such as directed energy, boost phase intercept, and non-kinetic effects.

38. Senator SULLIVAN. Admiral Richard, the missile capabilities possessed by rogue nations continue to rapidly evolve. For instance, as reported by the New York Times earlier this year, North Korea recently showcased the country's "largest-ever" intercontinental ballistic missile (ICBM) and revealed a new submarine-launched ballistic missile. Also, in a 2020 House Armed Services Committee hearing, former Under Secretary of Defense for Policy John Rood agreed with the U.S. Northern Command (NORTHCOM) assessment that North Korea's ICBM threat could challenge the ability of the Ground-based Midcourse Defense (GMD) system as soon as 2025. Provided the continuing advancement of these weapon systems, do you think it makes good strategic "sense" to have 20 empty silos—ready to accept missiles—at Fort Greely, Alaska?

Admiral RICHARD. Defer to the Missile Defense Agency (MDA) for specifics on their ability to maintain / accelerate Next-Generation Interceptor (NGI) capabilities and deliveries.

USSTRATCOM's role is to advocate for missile defense capabilities on behalf of combatant commands. The importance of pursuing additional missile defense capability on behalf of the warfighter must be coordinated and adjudicated with MDA and associated stakeholders. MDA is taking steps to bridge the gap for these additional 20 silos—a direct result of NDAA language for additional interim Ground-Based Interceptors—until NGI is fielded.

EXTENDED NUCLEAR DETERRENCE

39. Senator SULLIVAN. Admiral Richard, as you know, we provide extended nuclear deterrence to a number of allies in Europe, Asia, and elsewhere. In turn, this assists in preventing the proliferation of nuclear materials and weapon systems. Great power competitors and rogue nations are pursuing nuclear modernization while we continue to delay and defer our own. How will continued delay and deferral impact allies who rely on us for extended nuclear deterrence?

Admiral RICHARD. Allies and partners place enormous value on U.S. extended nuclear deterrence, which is key to nuclear non-proliferation. Effectively assuring Allies and partners depends on their confidence in the credibility of our nuclear deterrent.

Since there is no additional margin for postponing our strategic deterrent modernization programs, our Allies and partners are likely to interpret any further delay or deferral as an erosion of the U.S. extended deterrence guarantee and likewise, incur doubt regarding the credibility of our commitments.

As such, the Nation must remain committed to modernizing and recapitalizing our strategic forces and supporting infrastructure—we must maintain the current schedule with full and consistent resourcing. Nothing else works as planned or envisioned without a safe, secure, effective, and credible nuclear deterrent.

CHINESE AND RUSSIAN SPACE DEVELOPMENT

40. Senator SULLIVAN. General Dickinson, in your statement for the record you described various space capabilities China and Russia have developed that could threaten United States intelligence, surveillance, and reconnaissance (ISR), communication, and navigation capabilities in the event of a conflict. Can you explain how China and Russia are attempting to use international treaties and dual-use capabilities to militarize space and create an advantage over the United States?

General DICKINSON. International Treaties:

To counter United States space capabilities, Russia and China jointly sought international support for binding treaties or UN resolutions which they likely believe would asymmetrically constrain United States national security space activities. Generally, these proposals have no verification or enforcement mechanisms, but would tend to aid Russia and China in identifying (and acting against) national security space activities of western democracies, while they continue to develop counterspace weapons.

- The major Russia/Chinese initiative is the proposed agreement for the "Prevention of the Placement of Weapons in Outer Space" (PPWT for short). The proposed PPWT bans any "weapon" [not fully defined] in orbit or that transits a fraction of an orbit—something that in practice could, for example limit U.S. ballistic missile defense activities. The PPWT has no effective enforcement mechanism, and verification and "transparency" are voluntary. Notably lacking from the treaty's language are prohibitions on Chinese and Russian direct-ascent (ground to space) anti-satellite weapons and ground based directed-energy anti-satellite weapons.
- In addition, Russia and China have repeatedly submitted a UN resolution regarding voluntary "no first placement" (NFP) of weapons in space, again without verification mechanisms. As with the PPWT, the NFP does not define the term "space weapon". The irony is that while Russia claims to seek a ban on "first placement" of weapons in space, it already deployed space weapons, as it demonstrated with its July 15, 2020 on-orbit test of a space-based anti-satellite weapon, among other tests of counterspace capabilities.
- Ironically, considering Russia and China's public propaganda against "weaponization of space", both rejected last year's UK-sponsored UN General Assembly Resolution (75/36) "Reducing Space Threats Through Norms, Rules, and Principles of Responsible Behavior". This resolution encouraged member states to "study existing and potential threats to space systems", a proposal which could shine a light on both countries' wide-ranging counterspace efforts.

Dual Use:

China and Russia are likely integrating civilian satellites used for remote sensing, satellite communications, and navigation with counterspace capabilities to support their deterrence efforts against the United States. According to the National Air and Space Intelligence Center (NASIC), both countries are capable of employing their civil and commercial remote sensing satellites to supplement military-dedicated capabilities. China employs a "whole of nation" strategy for military-civil fusion, through which commercial or civilian assets may be required to support or assist intelligence organizations or the military, according to open source reporting. China's National Intelligence Law of 2017 requires Chinese corporations to assist in

"intelligence work", likely facilitating technology transfer to military space and weapons development. China is expanding satellite communications and navigation capabilities, which likely support PLA operations. China is probably testing dual-use technologies in space that could be applied to counter-space missions.

Russia also maintains a satellite communications and robust navigation fleet that provides resilient services Russian to civil, government, and military users locally and worldwide. According to the Defense Intelligence Agency, Russia continues to develop sophisticated on-orbit capabilities that could serve dual-use purposes. For example, "inspection" or servicing satellites are capable of closely approaching satellites to inspect or fix issues; this same technology could also be used to approach another country's satellite and conduct an attack that results in temporary or permanent damage. Russia appears to have carried out a test of an on-orbit anti-satellite weapon in July 2020.

Dual-use capabilities will challenge United States ability to provide advanced warning of nefarious intentions or discern between peaceful and potential hostile activity. Both China and Russia's militaries stand to benefit from fielding viable threats to United States satellites.

41. Senator SULLIVAN. General Dickinson, from your perspective as SPACECOM Commander, how do the Chinese and Russian threats differ operationally within your combatant command?

General DICKINSON. China and Russia each have weaponized space as a way to deter and counter a possible United States intervention during a regional conflict and as a means to reduce United States and allied military effectiveness in a conflict. Beijing aims to build a more joint, versatile, professional, and lethal force capable of power projection; space is critical to this goal. Russia's focus is on integrating space services—such as communications; precision navigation and timing (PNT); geolocation; and intelligence, surveillance, and reconnaissance (ISR)—into its weapons and command and control (C2) systems as a means of enabling strategic defense. Russia recognizes the importance of military space capabilities; however, its budget is more limited than China's due to competing priorities with broader militarization efforts. China and Russia's counterspace focus is very likely tied to perceived fears of United States military capabilities. Both countries will likely continue endeavors in the space domain to deliver electronic warfare, directed energy, and kinetic capabilities to disrupt U.S. C2 systems and use space or space denial operations as an integral component to achieve information superiority in conflict.

42. Senator SULLIVAN. General Dickinson, a recent study commissioned by the U.S. Space Force, the Defense Innovation Unit, and the Air Force Research Laboratory stated, "China's institution building and use of space are the key providers of global economic development reinforcing their . . . Belt and Road Initiative, whereby infrastructure for economic development wins over and binds new allies and partners." Fittingly during your testimony you stated, "one of our biggest deterrence opportunities is with our allies and partners . . . .we've seen a bow wave of allies and partners who want come and be part of SPACECOM and part of the space enterprise." Understanding that both the United States and China are actively competing and seeking to work with allies and partners in the space domain, in your personal opinion, how could the United States use our existing comparative advantage in space launch to further collaborate with our allies and partners on their space-based capabilities?

General DICKINSON. Space launch is a key comparative strength for the U.S., and it is a vital component of our whole-of-government approach to cooperation with our allies and partners. Beyond our space launch capabilities, we cooperate with our allies and partners in areas like Space Situational Awareness data sharing as a part of our holistic work to deepen and strengthen long-term partnerships.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

HYPERSONIC DEVELOPMENT

43. Senator BLACKBURN. Admiral Richard, are you confident that the United States' hypersonic testing facilities are sufficiently well-maintained and modern to meet the demands of hypersonic development? If not, please identify the most concerning areas of insufficiency.

Admiral RICHARD. Today, the DOD can adequately test current hypersonic prototypes. However, additional investment is needed to meet future hypersonic acquisi-

tion program and operational test requirements along with the accelerated prototyping program schedules.

The Test Resource Management Center (TRMC), responsible for assessing the readiness of the DOD's test infrastructure, anticipated the increased demand for testing hypersonic systems and programmed funding to address the most critical hypersonic test infrastructure capability and capacity needs.

44. Senator BLACKBURN. Admiral Richard, what additional investments—including in personnel—are needed to support the testing needs across the hypersonic spectrum to better compete with Beijing and Moscow? Please explain.

Admiral RICHARD. To support developmental and operational testing across the hypersonic spectrum, DOD is considering enhancements to hypersonic ground test facilities (to include the Arnold Engineering Development Complex (AEDC) in Tullahoma, TN), and establishment of additional long-range flight corridors to support increased hypersonic flight test demand.

The Joint Hypersonic Transition Office (JHTO) is executing the workforce development strategy to advance current training, and leveraging university expertise to accelerate development of the next generation hypersonic workforce.

NUCLEAR MODERNIZATION AND SUSTAINMENT

45. Senator BLACKBURN. Admiral Richard, please provide specific examples of potential consequences to STRATCOM if we do not modernize our nuclear enterprise's aging infrastructure. Would STRATCOM be able to field an effective deterrent?

Admiral RICHARD. The continued, chronic underfunding of the maintenance and modernization of the Nation's nuclear weapons infrastructure is the single greatest risk to strategic deterrence. Not providing the needed resources to recapitalize invites the very real risk of losing the capacity to field a credible and effective nuclear deterrent, at a time when our adversaries are modernizing and expanding their own nuclear capabilities. This significantly degrades the U.S.'s long-term ability to achieve strategic deterrence, extended deterrence, and non-proliferation objectives. Once these capabilities are lost it will take 15–20+ years to recapitalize them. We must be cognizant of the operational implications and national risks of any decision to not fund or divest any capability—and we must have a comprehensive threat-based strategy review to ensure this capability will not be needed for at least a generation.

GROUND-BASED STRATEGIC DETERRENT

46. Senator BLACKBURN. Admiral Richard, how—specifically—could the Air Force best capitalize on the Ground-based Strategic Deterrent's (GBSD) modularity and open-system architecture when implementing future program upgrades?

Admiral RICHARD. Defer to the Air Force regarding the GBSD program's technical details.

47. Senator BLACKBURN. Admiral Richard, in what ways could GBSD's modularity and open-system architecture inform other current and future DOD systems' approaches to cost savings and mid-life flexibility? Please explain.

Admiral RICHARD. Defer to the Air Force regarding the GBSD program's technical details

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QUESTIONS SUBMITTED BY SENATOR JOSH HAWLEY

CHINA

48. Senator HAWLEY. General Dickinson, Secretary of Defense Lloyd Austin has written that we need to maintain combat-credible forward forces in order to deter or, if necessary, deny a Chinese fait accompli against Taiwan. How do you see our forces in space contributing to deterrence by denial against China?

General DICKINSON. At Secretary Austin's direction, USSPACECOM has begun establishing the necessary posture to both deter China and prepare to support the Joint fight, regardless of where our capabilities are required. Our current and future on-orbit space capabilities will enable the Joint Force to operate in a contested environment, increase resilience in our space architecture, and enhance our on-orbit counter-space capabilities. In addition, we are working with USINDOPACOM, USCENTCOM, and USEUCOM to address gaps in our forward-deployed space control posture in their AORs. Concurrently, we're continuing our efforts to maintain and grow our regional architecture of key allies and partners, assuring access, space operations, and capability sharing when we'll need it the most. Apart from those ef-

forts, we must remember USSPACECOM's AOR is global in nature, and our warfighters will not only reside in the USINDOPACOM AOR but positioned in operations centers around the world. Our personnel provide critical space capabilities from on-orbit and terrestrial assets ready to support the Joint fight, globally, from the first moment, unencumbered by the need to deploy or relocate.

QUESTIONS SUBMITTED BY SENATOR TOMMY TUBERVILLE

U.S. SPACECOM

49. Senator TUBERVILLE. General Dickinson, once the Inspector General (IG) investigation and environmental study are completed, can SPACECOM recruit and hire civilians directly in Huntsville, Alabama and not have to relocate them from Colorado?

General DICKINSON. The Secretary of the Air Force's final basing decision, which is pending the environmental study, is the determining factor for recruiting and hiring civilians in Huntsville, Alabama. My intent is to reach full operational capability at our permanent location as expediently as practicable, without essential mission degradation, all within the guidance, direction, and authority of the Department of Defense leaders involved in the ongoing establishment of United States Space Command. Mission readiness depends on the availability of both people and equipment; therefore, I directed my staff to posture the command for transition to the permanent location as soon as practicable, without degradation to our missions, after the SECAF completes the basing decision process. We will not know what percentage of civilian employees may choose to transfer locations until after the SECAF confirms the outcome of the basing decision process, and without that information, we cannot calculate an accurate cost of relocation.

50. Senator TUBERVILLE. General Dickinson, if we, as a country, want to accelerate your readiness, save taxpayer money, and prevent having to relocate employees, would further delay to the final SPACECOM basing decision be detrimental to those goals?

General DICKINSON. The Secretary of the Air Force's (SecAF) final basing decision will enable initial design of the consolidated headquarters facility, relocation of personnel, and the hiring of human capital to the permanent headquarters location. I appreciate that the Air Force is adhering to the basing process, including compliance with NEPA, which takes time. Ensuring that we reach full operational capability is my priority. Therefore, I have directed my staff to posture the command for transition to the permanent location as soon as practicable, without degradation to our missions, after the SecAF makes the final basing decision.

51. Senator TUBERVILLE. General Dickinson, is it true that the taxpayer savings moving SPACECOM to Redstone Arsenal, AL results in a 35 percent one-time savings for the move and 25 percent annual cost savings over 20 years?

General DICKINSON. I will defer basing process questions to the SecAF, who has the authority for selecting the permanent location for USSPACECOM Headquarters. Analysis to understand the impact of a transition to Redstone Arsenal in Huntsville, AL is underway. My staff is looking hard at timelines, anticipated impacts to human capital, facilities, and mission with a goal of minimizing risk to mission while being good stewards of the taxpayers' money. Once we have a final basing decision, we will be able to provide and discuss the full analysis.

DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, APRIL 22, 2021

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 9:30 a.m., in room SD–G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Kaine, King, Warren, Peters, Manchin, Rosen, Kelly, Inhofe, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. Let me call the hearing to order.

This morning the Committee will receive testimony from General McKenzie, Commander, United States Central Command, CENTCOM, and General Townsend, Commander, United States Africa Command, or AFRICOM. Thank you both for your many decades of military service, and please extend our appreciation to the men and women serving under you, and we appreciate very much their sacrifice and the sacrifice of their families on behalf of the United States.

Last week, in one of the most challenging decisions facing President Biden, he announced the withdrawal of all forces from Afghanistan by September 11, 2021. It appears the President concluded that more troops might buy more time and casualties, but more time would not create a government that could defeat the Taliban and effectively govern Afghanistan. The President's decision, however, should be seen as a transition, not closure, and should not mean an end to our counterterrorism efforts. Most importantly, we must ensure that Afghanistan will not be a source of planning, plotting, or projection of terrorist attacks around the globe, including against the Homeland, and, General McKenzie, I would be interested in hearing your thoughts on how best to transition to a new counterterrorism architecture in the region to continue to degrade al Qaeda, ISIS [Islamic State of Iraq and Syria]

of Khorasan Province, and other terrorist groups, and prevent their ability to attack the Homeland.

Additionally, support to the Afghan forces will remain vital. The intelligence community's Annual Threat Assessment for 2021 noted, "The Afghan Government will struggle to hold the Taliban at bay if the coalition withdraws support." I would like to understand plans to continue training and assistance to the Afghan forces in light of the transition, and how we will balance that against the need to conduct robust oversight of funding that we provide to the Afghan Government and forces.

General McKenzie, you are also facing a complex challenge of deterring the threat from Iran and its proxies while the Administration seeks a diplomatic solution to contain the Iranian nuclear threat. I would be interested to hear an update on your progress in meeting these challenges, particularly against the backdrop of indirect talks in Vienna, and the recent attack on the Natanz nuclear facility, and Iran's announcement that they have begun enriching uranium up to 60 percent, which would move it closer than ever before to the 90 percent purity threshold required for weapons-grade uranium.

Turning to AFRICOM, General Townsend, you have said that Al-Shabab is the largest and most violent of al Qaeda's branches worldwide, yet the previous Administration chose, with little notice, to remove the vast majority of United States troops from Somalia. The Biden Administration is now reviewing that decision as part of a larger assessment of our strategy in Somalia. I hope you will share your views on the current security situation as well as the status of our engagement with our Somali partners, particularly in light of news this week that the Somali federal government has extended the mandates of the president and parliament by 2 years. This move directly undermines the progress made on democratic processes and institutional reforms, and may threaten international support.

As you noted in your testimony, Africa is a vast continent of opportunity and promise, but one that includes many strategic challenges, many of which are overlapping also. Population growth, food insecurity, and impacts from climate change increase instability, drive conflict, and further threaten vulnerable populations. These challenges do not lend themselves to geographic or bureaucratic boundaries. They require well-resourced and well-integrated whole-of-government solutions. I look forward to your views on the importance of investing in diplomacy and development to force long-term stability, as well as an update on AFRICOM's support to the Interagency in these efforts.

Our competitors recognize that investing in Africa and the Middle East is in their long-term interests, as evidenced by Chinese and Russian military and economic activity that continues to grow in these critical regions. General Townsend and General McKenzie, I look forward to hearing your views and how we best leverage U.S. views—U.S. engagement, rather, and investments to create attractive alternatives and ensure we maintain key partnerships and access. I want to thank you again for being here this morning, and I look forward to your testimony.

Before I turn it over to the ranking member, Senator Inhofe, I would like to remind my colleagues that there will be an informal classified briefing immediately following this session in SVC–217, the Office of Senate Security Center. Senator Inhofe?

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Thank you, Mr. Chairman. Over the past few years, this Committee's top priority has been ensuring that we implement the—there it is—this document. It has been kind of a surprise that something that was put together back in 2018 by an equal number of Democrats and Republicans has been so accurate, and we have been using that as a blueprint. If we are serious about the security of our Nation, we need resources to make the—this National Defense Authorization Act (NDAA) happen, make it a reality. The President's Budget request does not meet this standard. Instead, it represents a decline in defense spending, which will have serious implications for our national security. It also means our combatant commanders will have to do more with less, so the standard that was put forth was not met by the President. Our top military commanders have testified in unison in recent weeks that the threats to the United States are growing at an alarming rate. Cutting the defense budget sends exactly the wrong signals to our allies and our adversaries alike.

General Townsend, you highlighted China's growth in—growing use in Africa as a power projection platform for the military. They have secured their first overseas base in Djibouti. We have been there. We have witnessed that. They are aggressively pursuing a base on Africa's west coast, which would be the first time, giving China an enduring naval presence in the southern Atlantic. With less than 6,000 troops on the continent and the continued lack of Intelligence, Surveillance and Reconnaissance (ISR), I hope Department of Defense's (DOD) Global Posture Review will ensure your resource shortfalls are being addressed. In CENTCOM, we have the opposite problem. It gets significant resources to counter al Qaeda, ISIS, and the Iranian-backed terrorists.

General McKenzie, in the last year, I understand you have been able to reduce U.S. troop levels in the region, but I worry this Administration's policies in your region are driven more by politics than the national security. First, in Afghanistan, the Administration is, by its own admission, executing a calendar-based drawdown rather than a condition-based one. We know this is true, and we have talked about this for quite a period of time. General McKenzie, you recently stated that the Taliban still has to take action to meet the conditions for United States troop withdrawal of the February 2020 agreement. The arbitrary September the 11th deadline for troop drawdown risks a power vacuum that terrorists will dominate and use to threaten our Homeland again. I want to add here that I am extremely disappointed that General Miller has not yet been scheduled to testify publicly before this Committee, and I hope that you will work to fix that, General McKenzie.

Secondly, regarding Iran. The Administration is moving quickly to negotiate a quick return to the failed 2015 Iran deal granting Tehran large sanctions relief, even though the nuclear limitations will begin to expire within the next 5 years. As we saw during the

Obama Administration, Iran will use sanctions relief to fund terrorist groups, including the ones currently targeting the men and women in uniform that you command. Third, in Yemen, the Administration is pulling back from our Saudi partners, while, at the same time, the Iran-backed Houthis are escalating their attacks. We should not expect the Saudis to tolerate a perpetual Houthi ballistic missile that—an armed drone threat on our border. We would not tolerate one on our border. So the United States arms sales restrictions could very well lead the Saudis to seek support from our peer competitors. General McKenzie, I hope you will address these issues and offer your views on how to heighten risk of that and manage that in the year ahead.

So I thank both of you for your testimony and your presence here today, and also in the closed session that we will have, as the chairman mentioned. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Inhofe, and let me concur with the ranking member. We have been pressing the Department for General Miller to testify in an open hearing on Afghanistan well before the decision was made by President Biden with respect to forces in Afghanistan. Now with that decision, it is even more important that we receive direct, in-person communication from General Miller. The last time we had such an open hearing was, I believe, with General Nicholson in 2017, so we need to carry out our duties, the direct contact, and I will once again, General McKenzie, ask for your assistance and relay that message, and hopefully General Miller will be here very shortly.

With that, let me now recognize the witnesses, beginning with General McKenzie. Thank you, sir.

STATEMENT OF GENERAL KENNETH F. MCKENZIE, JR., USMC, COMMANDER, UNITED STATES CENTRAL COMMAND

General MCKENZIE. Chairman Reed, Ranking Member Inhofe, distinguished Members of the Senate Armed Services Committee, I appear before you proudly representing the 70,000 men and women of the United States Central Command. It is a great pleasure to be with you here today. It is my duty to testify, of course, but I have to say it is also a privilege to address this body, and all the greater honor to do so beside the commander of United States Africa Command, General Steve Townsend. I would also like to recognize my senior enlisted leader, Fleet Master Chief Jamie Herdel of the Navy, who is here with me today, as well as chief legislative assistant, Air Force Colonel Jen Hlavaty.

Since my last testimony, the region has continued to evolve, and it remains as dynamic as ever. With the President's announcement last week, we are focused on working closely with the Afghan Government and our National Atlantic Treaty Organization (NATO) allies to responsibly conclude our Resolute Support Mission in Afghanistan. This is my main effort at present, but it is not my only responsibility. My prepared statement addresses our other missions in some detail.

The United States and our NATO allies sent forces to Afghanistan nearly 20 years ago, and the President has judged the time is now appropriate to redeploy and reposition these forces so that they are better arrayed to deter adversaries and respond to threats

globally, including those in the CENTCOM Command region. Our singular purpose in Afghanistan has been to ensure that al Qaeda and other violent extremist organizations would never again plot, prepare, and perpetrate attacks against the United States and our allies from the refuge of that country. The campaign has evolved considerably over the years, from Active combat operations with United States and NATO forces in the lead, to advisory efforts designed to enhance the Afghan national defense and security forces' ability to conduct their own campaigns against violent extremist organizations. That there has not been another 9/11 is not an accident. It is the cumulative product of these efforts.

We will now conclude our Afghanistan-based advise and support mission. We are further planning now for continued counterterrorism operations from within the region, ensuring that the violent extremist organizations fighting for their existence in the hinterlands of Afghanistan remain under persistent surveillance and pressure. Ever since 12 September 2001 when our allies invoked Article 5 of the North Atlantic Treaty, we have done everything in Afghanistan within a partnership framework, and that will not change in the months ahead. We are planning collaboratively with our interagency and international partners and will take measures to ensure the safe and orderly withdrawal of all of our forces and those of our partners. This includes positioning significant combat power to guard against the possibility that the Taliban decides to interfere in any way with our orderly redeployment.

I would now like to briefly summarize some other challenges in the region.

While Iran has itself avoided state-on-state attacks on United States Forces since last January's strikes on the Al Asad and Erbil air bases, it continues to menace regional partners and the free flow of commerce through the use of proxies and the proliferation of armed, unmanned aerial systems and other munitions. Its pursuit of regional hegemony remains the greatest source of instability across the Middle East. In Iraq and Syria, the campaign to eliminate the threat posed by ISIS has entered a new phase. In Iraq, we are engaged in a strategic dialogue with the Iraqi Government to determine the nature of our security relationship. ISIS' physical caliphate is no more, but its toxic ideology lives on. The problem is especially acute in communities ravaged by conflict and its sprawling camps for displaced persons where ISIS preys upon vulnerable populations.

What has accelerated in the last year is the influence of China and Russia, who, each in their own way, are attempting to subvert the rules-based international order and to gain strategic influence in the Middle East. China's activity in the region takes the form of economic investment, arm sales, and other overtures. Russia has made an 18th century power play in Syria, propping up the murderous Assad regime. The Middle East remains key terrain, and I believe China and Russia will continue to expand their efforts to improve their position in the region and diminish United States standing wherever possible.

The CENTCOM area of responsibility is the most cyber-contested theater in the world. It is also the proving ground for the proliferation and employment of unmanned weaponized systems, many

emanating from Iran. This difficult and complex operational environment provides units inside CENTCOM opportunities to operate and to conduct realistic training within an environment that exists nowhere else in the world. I can state as a matter of fact that the units and ships assigned to CENTCOM are as ready as any in the Joint Force.

The weeks and months ahead will see us execute a very complicated and demanding military operation to withdraw United States and NATO forces from Afghanistan. This is presently the main effort of my command, and we have the tools necessary to accomplish this task. With that, I look forward to answering your questions.

[The prepared statement of General McKenzie follows:]

PREPARED STATEMENT BY GENERAL KENNETH F. MCKENZIE, JR.

INTRODUCTION

United States Central Command's (USCENTCOM) mission—to direct and enable military operations and activities with allies and partners to increase regional security and stability in support of U.S. enduring interests—remains as valid and vital to our Nation today as ever before. While acknowledging military force is not the principal answer to the region's challenges, our presence in the region provides advantage, opportunity and leverage for U.S. diplomats to operate from a position of strength, prevents losing ground to our global competitors, and protects the security of the American people by meeting challenges abroad from state and non-state adversaries who threaten the U.S. and our allies, attempt to destabilize the USCENTCOM area of responsibility (AOR), and inhibit access to the global commons.

USCENTCOM aligns with the President's Interim National Security Strategic Guidance (INSSG) to work with like-minded allies and partners to advance our shared interests to address the four global challenges that manifest across the USCENTCOM AOR: China, Russia, Iran, and Violent Extremist Organizations (VEOs). Maintaining an effective posture to meet these challenges requires making hard choices. While China will remain our Nation's pacing competitor for the foreseeable future, the main challenges USCENTCOM faces in its AOR occur in the present. Iran's destabilizing actions reverberate through the region daily. Iran has not indulged in idle saber rattling against the United States and our partners. Iran has launched state-on-state ballistic missile, cruise missile, and unmanned aerial system (UAS) attacks, as well as attacks through its proxies and aligned groups that have killed and injured Coalition forces and innocent civilians; those attacks are increasingly directed at key United States partners. Every day across the AOR, VEOs like al Qaeda and the Islamic State of Iraq and Syria (ISIS) operate without respect for borders or consequence, creating instability and human suffering in an attempt to destroy sovereign nations to remake them in their own twisted vision. Where gaps open, China and Russia pursue steady economic and military measures that encroach on United States presence and influence in the region.

None of these current threats to our United States national interests are approaching sunset, and they all continue to unfold with speed and unpredictability. Since the beginning of the year, Iranian-aligned militia groups (IAMGs) in Iraq and Syria likely conducted more than 50 improvised explosive device attacks against Iraqi-operated, Coalition-contracted logistical convoys, and nine indirect fire attacks against United States diplomatic facilities or Iraqi military bases hosting United States and Coalition personnel. Protracted conflicts across the AOR and the destruction of government services and infrastructure have caused large-scale humanitarian crises. More than 20 million displaced people are spread across the USCENTCOM AOR, representing one fourth of the nearly 80 million people displaced globally. Millions sought refuge in neighboring countries, many of which struggle with their own economic and social challenges, while millions more internally displaced persons (IDPs) struggle to find daily sustenance. Meanwhile, the underlying socio-economic factors that sparked the "Arab Spring" movements in 2011 persist and contribute to recurring unrest.

The way forward requires a whole-of-government approach applying all of the elements of U.S. national power to address the underlying conditions threatening stability. Alongside our U.S. interagency partners, USCENTCOM will continue to work

with allies and partners to set the conditions for diplomacy and development. By advancing our shared interests and coming together to face shared threats, USCENTCOM develops capable regional partners to act as guarantors of their own security and sovereignty, able to secure their own borders and ensure their internal stability.

STRATEGIC APPROACH

USCENTCOM's actions and activities across the AOR run the spectrum from cooperation and collaboration, to competition and conflict. To ensure synchronization throughout our ongoing missions, we align our operations, activities, and investments along three lines of effort. These lines of effort support Department of Defense (DOD) and U.S. Government priorities and are aligned with DOD guidance and the INSSG.

Recognizing the importance of enhancing stability throughout the region, USCENTCOM's first line of effort is to deter Iranian aggression against United States Forces and interests, and strengthen our partners' capabilities to defend themselves against Iranian and proxy and aligned group aggression. USCENTCOM's second line of effort is aligned against the persistent challenge of disrupting and degrading VEOs that destabilize the region and threaten the U.S Homeland, our vital interests, and our partners and allies. USCENTCOM considers this an enduring effort covering a wide range of operations and activities from active campaigns against al Qaeda, ISIS, and other VEOs in the region, to supporting whole-of-government solutions to ensure good governance and to thwart efforts by ISIS and VEOs to radicalize and make appeals to vulnerable populations, including refugees and IDPs. Success in this campaign is not defined as the absence of violence. It is militarily impossible to defeat an ideology, but when force is required, we will employ it alongside international and local partners wherever possible to bolster effectiveness and legitimacy, share burdens, and invest others in success.

Our third line of effort is long-term strategic competition with China, combined with countering Russia. Both nations leverage their proximity to the region, historical relations, and a perceived decline in United States engagement to establish and strengthen opportunistic relationships. China and Russia each seek ends in their own self-interest using different approaches. Russia plays the part of spoiler to the United States, using military means, influence operations and grey-zone activities to undermine and disrupt U.S. influence and reassert its own global influence. China uses predominantly economic means to establish regional in-roads, with a long-term goal of expanding its military presence to secure vital routes of energy and trade.

LINE OF EFFORT 1—DETERRING IRAN

Iran views the United States presence in the region as the greatest threat toward achieving its ambition of regional hegemony. The regime uses a combination of coercion and IAMG violence to bring about the removal of United States Forces from Iraq, despite United States and Coalition forces being in Iraq at the request of the Government of Iraq (GoI). Iran's political maneuverings toward this end have failed to date, while the United States and GOI continue strategic dialogue to maintain momentum in the Global Defeat ISIS (D–ISIS) campaign.

Iran currently possesses one of the most capable militaries in the Middle East, and its offensive capabilities include nearly 3,000 short- and long-range ballistic missiles as well as an array of land-attack cruise missiles (LACMs) and UASs. The Iranian regime demonstrated both the capability and willingness to employ all of these offensive weapons in complex attacks against Saudi Arabia's oil facilities in 2019, and again against United States Forces in Iraq in 2020.

Iran provides weapons, parts, and expertise to Houthi forces in Yemen for the purpose of attacking Saudi Arabia. Since January 2021, Iranian-aided Houthi forces have launched more than 150 ballistic missile, LACM, and one-way UAS attacks against military, infrastructure, and civilian targets in Saudi Arabia. These attacks have varied in scope and complexity, with UAS detection and interdiction particularly challenging not just for Saudi forces, but also for United States and Coalition forces supporting Saudi Arabia's defense. These small- and medium-sized UAS proliferating across the AOR present a new and complex threat to our forces and those of our partners and allies. For the first time since the Korean War, we are operating without complete air superiority. As a result, USCENTCOM has made the counter-UAS effort one of its top priorities, and employs a variety of systems and tactics to defeat these threats. Until we are able to develop and field a networked capability to detect and defeat UAS, the advantage will remain with the attacker.

USCENTCOM remains committed to helping defend Saudi Arabia. United States assistance to the Kingdom focuses on providing information to Saudi Arabia's armed forces to assist them in thwarting Houthi UAV, ballistic missile, and explosive boat attacks that contravene international law and undermine diplomatic efforts. USCENTCOM does not provide offensive military support to the Saudi-led Coalition. Saudi Arabia understands that the only way to end the Houthi UAV and missile attacks is to end the war in Yemen. Deputy Minister of Defense Khalid bin Salman and other senior Saudi officials have engaged consistently and constructively with United States. Special Envoy Tim Lenderking and UN Special Envoy Martin Griffiths in an effort to find a negotiated end to the conflict. Under a proposed UN agreement, which Saudi Arabia has publicly endorsed, parties would agree to a nationwide ceasefire in exchange for the opening of Hudaydah Port and Sanaa Airport, then transition to political talks. USCENTCOM supports these diplomatic efforts and remains postured to support a UN-backed ceasefire if directed.

However, international efforts to end the war have been met with political intransigence and more Houthi attacks, including a sustained ground Houthi offensive to seize Marib, an attack targeting the Republic of Yemen Government Parliament while it was deplaning in Aden, and unprecedented missile and UAS strikes against civilian targets in Saudi Arabia. The Iranian regime's provisioning of lethal aid to the Houthis to enable such attacks prolongs the conflict in Yemen, exacerbates regional tensions, threatens the security of Saudi Arabia, and extends the suffering of the Yemeni people who are subject to widespread food and water shortages, malnutrition, and insufficient healthcare services.

In addition to USCENTCOM's regular force posture, the theater benefits from Dynamic Force Employment missions (DFE); Agile Combat Employment (ACE); and a balanced, visible maritime presence. Strategic bomber task force missions flown no-notice from bases in the United States to the Gulf from the fall of 2020 to the present and two fighter-squadron deployments demonstrate DFE over-the-horizon power projection, exercise seamless and rapid operational coordination between multiple combatant commands. They also enhance integration with numerous partners and allies across the region. Developing the capability to arm and fuel Navy, Air Force, and Marine Corps aircraft from austere, expeditionary air bases in the Arabian Peninsula provides an example of how USCENTCOM generates and exercises ACE capabilities in an active combat theater. Meanwhile, U.S. carrier strike groups and other strategic maritime capabilities operating wherever international law allows provide USCENTCOM the flexibility of U.S.-sovereign deterrent options free from access, basing, or overflight restrictions.

As Iran's ballistic missile force is the most formidable in the region, USCENTCOM's missile defense assets incorporate Patriots, *Sentinel* and *Avenger* systems, and Navy cruisers/destroyers to form a layered defense, augmented by Theater High-Altitude Air Defense when ordered. Since Gulf nations field nearly 80 percent of all regional air-defense systems, USCENTCOM is working to develop a long-term, regionally-aligned effort focused on a centralized integrated air and missile defense (IAMD).

Other active and passive defense efforts to safeguard United States Forces, deter Iranian destabilizing actions, and provide regional safety and security include:

- Critical mine countermeasure capabilities provided with *Avenger*-class mine countermeasure ships and MH–53E Sea Dragon heavy-lift helicopters help maintain freedom of navigation for U.S. and merchant shipping.
- ISR (Intelligence, Surveillance, and Reconnaissance) platforms, such as our MQ–9s, are highly useful in monitoring and identifying potential threats or malign activities, providing early warning and attribution.
- Pursuing opportunities to enhance expeditionary basing in less vulnerable portions of the USCENTCOM AOR.
- Conducting analysis on bunker hardening proposals and implementing blast mitigation measures to improve protective shelters within missile range and mitigate the risk of traumatic brain injury in the event of missile and rocket attacks.
- Counter Rocket Artillery and Mortar and Patriot missile systems that provide proven, effective ground-based air-defense platforms critical for U.S. and partner self-defense.

In addition, as the U.S. footprint in the AOR evolves, legacy KC–135 and replacement KC–46 refueling capabilities will continue to play a critical role, enhancing USCENTCOM's ability to execute essential missions across a vast region with limited suitable airfields.

LINE OF EFFORT 2—COUNTERING VIOLENT EXTREMIST ORGANIZATIONS

Countering Violent Extremist Organizations—Afghanistan

The United States strategic objective in Afghanistan, as it has been since 2001, is to ensure Afghanistan does not again become a safe haven for terrorist attacks against the United States and our allies and partners. Success toward this objective and the path to lasting peace remains an Afghan-owned, Afghan-led process to achieve a political settlement and comprehensive ceasefire between the Taliban and the Government of the Islamic Republic of Afghanistan (GIRoA). USCENTCOM remains steadfast in support of ongoing interagency and diplomatic efforts to achieve a negotiated political settlement, and is committed to working with our regional partners to ensure our ability to counter a potential reemergence of terrorist threats against the Homeland.

Pursuant to President Biden's April 14 policy announcement, USCENTCOM will execute a deliberate and orderly withdrawal of remaining United States troops in Afghanistan before the 20th anniversary of September 11. We will execute this withdrawal in lockstep with our NATO allies and partners in a manner that ensures the safety of our people and security of our assets. We went in together, adjusted together, and will prepare to leave together. USCENTCOM's key focus during the withdrawal will be management of the transition and the safety of U.S., as well as NATO ally and partner personnel as they depart the country. We have told the Taliban in no uncertain terms that any attacks on United States troops as we undergo a safe and orderly withdrawal will be met with a forceful response.

The Afghanistan Security Forces Fund (ASFF) is the primary source of funds for the Afghan National Defense and Security Forces (ANDSF) and remains a critical resource to Security Force Assistance, enabling an effective, affordable, and sustainable ANDSF. As the President has said, while we will not stay involved in Afghanistan militarily, we will continue to support the government of Afghanistan and keep providing assistance to the ANDSF. Overseeing the responsible execution of ASFF has been, and will continue to be, a team effort. USCENTCOM is committed to working with interagency partners to develop mechanisms that ensure continued oversight of and accountability for ASFF.

As we finalize this mission, I must express my deepest gratitude to those Americans who served and sacrificed on behalf of our Nation. I realize that not all of our troops returned from their deployments while others returned home wounded and forever changed. My deepest admiration and respect goes out to our heroes and their families.

Countering Violent Extremist Organizations—Iraq and Syria

United States and Coalition Forces remain in Iraq at the request of the GOI for one purpose—to ensure the defeat of ISIS. In July 2020, Coalition forces under command of Combined Joint Task Force-Operation Inherent Resolve (CJTF–OIR) began Phase IV of the Global D–ISIS campaign in Iraq and Syria, transitioning from a focus on tactical-level Train, Advise, and Assist (TAA), to a focus on advising and enabling partner forces at the operational and strategic levels. This partnering model in Iraq uses a centralized advising approach toward the Iraqi Security Forces (ISF) at higher echelons of command. The Coalition established the Military Advisory Group co-located with the Iraqi Joint Operations Command to provide on-site intelligence, operations, logistics, fires, and air support from a central location.

Iraqi Security Forces continue to make great progress, due in large part to the D–ISIS Coalition's investment in training and equipping thousands of Iraqi troops. Many ISF units are now capable of independently planning large-scale operations and executing with Coalition enablers. Operation READY LION was a 14-day Counter Terrorism (CT) mission conducted in March 2021 to clear ISIS remnants from mountain strongholds in northeast Iraq. This ISF planned and led operation, aided by Coalition enablers, eliminated nearly 200 ISIS hide locations. As our recent Strategic Dialogue with Iraq made clear, the transition of the United States and other international forces to training, equipping, and assisting the ISF reflects the success of their strategic partnership and supports the ISF's continued efforts to ensure ISIS can never again threaten Iraq's stability.

USCENTCOM also established the Special Operations Advisory Group to provide similar advisory support to the Iraqi Counter-Terrorism Service, one of our most effective partners in targeting ISIS leadership. Other necessary enabling functions include ISR and air strike capabilities still in nascent development in the ISF.

USCENTCOM recognizes that efforts to stabilize Iraq must go beyond CJTF–OIR's D–ISIS campaign and address the root causes of instability. NATO's contribution, through NATO Mission Iraq (NMI) is a separate, but complementary mission of Security Sector Reform targeting the institutional capacity of Iraq's Ministry of

Defense. This mission is vital to taking advantage of the Coalition's hard-won gains in Iraq. Bolstering CJTF–OIR's efforts of advising and enabling partner forces, NMI is a non-combat mission that seeks to build the institutional governance of, and professionalize, the ISF at the senior levels. As CJTF–OIR's mission matures through Phase IV, NMI's role within Iraq will grow. The North Atlantic Council projects NMI's eventual end strength to expand considerably, contingent on the GoI's continued approval. USCENTCOM and NATO staffs collaborate frequently to ensure close coordination, and CJTF–OIR maintains two planners within the NMI staff to coordinate future efforts.

In Syria, efforts by Global Coalition partners and the Syrian Democratic Forces (SDF) were critical in the territorial defeat of ISIS, and these partners remain essential to the ongoing D–ISIS campaign. Throughout 2020, the ongoing Syrian civil war, long-term displacement of civilians, destabilizing influence of Iran, disruptive role of Russia, and COVID pandemic complicated efforts to bring about the enduring defeat of ISIS in Syria. Despite these obstacles, our SDF partners continue to make progress against ISIS as the Coalition continues to provide enabling support while developing capabilities for the SDF to operate independently. Partnered operations focus on enhancing planning, command and control capabilities, and the provision of key enablers for success to include ISR and medical support.

Notwithstanding significant attrition to its senior leadership and difficulties generating sufficient revenue, ISIS remains a learning, adaptive, and committed VEO with a dedicated core. It promotes a global cyber presence while retaining a cellular structure that allows it to carry out local attacks—with the ultimate aspiration to reestablish a physical "caliphate."

Constant surveillance and consistent pressure by the ISF in Iraq and SDF in Syria, enabled by United States and Coalition forces, have prevented ISIS from conducting or enabling external attacks against the United States and its allies. As USCENTCOM's D–ISIS campaign continues we assess attacks inspired, enabled, or conducted by ISIS will continue in the form of an insurgency. Our objective is to develop and enable the ability of the ISF in Iraq and SDF in Syria to address and contain these threats without external assistance. Throughout 2021, our partner forces will continue to benefit from a range of financial and materiel support provided through the Counter–ISIS Train and Equip Fund (CTEF) program that provided $701 million of critical assistance in 2020.

As noted in the 2020 congressionally-mandated RAND study, "Strategic Evaluation of the Counter Islamic State Train and Equip Fund," the CTEF program has proven a very effective tool in the Global D–ISIS campaign, predominantly because of the flexibility and speed with which it can be applied to dynamic conditions in Iraq and Syria. Key activities funded by CTEF include the acquisition of niche CT capacity for the ISF, support to the SDF, stipends for our Syrian and Peshmerga partners, detention facility support, and the repatriation of ISIS detainees. CTEF support for Syrian partner forces also facilitates ongoing operations to find, fix and finish SIS sleeper cells, and maintain control of key terrain and lines of communication in eastern Syria.

ISIS Detainees, their Family Members, and Refugees/Internally Displaced Persons

Two by-products of the Global D–ISIS campaign that cannot be solved by the use of military force are the repatriation of foreigners from detention centers and displaced persons camps in Northeast Syria and the pace of stabilization programs and reintegration of displaced people across both Syria and Iraq.

Presently, the SDF holds nearly 10,000 ISIS fighters, including nearly 2,000 hardcore foreign fighters, in more than two dozen makeshift detention centers across northeast Syria. Although U.S. Forces do not directly supervise these detention activities, we mitigate risk using CTEF that helps enable the security of those facilities. While the SDF remains capable of responding to external attacks and quelling internal riots, threats persist. The SDF cannot, and should not be expected to hold these detainees indefinitely. Outside of detention centers, thousands of foreign women and children, many affiliated with ISIS detainees, are living in displaced persons camps. They too need to be repatriated. While several countries have taken responsibility to repatriate their own citizens, the overwhelming majority of countries have yet to do so.

Over the last year, increased violence in the Al-Hol displaced persons camp in northeast Syria has impeded the SDF's access to, and overall safety in, the camp, having a detrimental effect on humanitarian conditions. The adverse and insecure conditions create increased risk for camp populations and camp administration, as well as humanitarian relief organizations and non-governmental organizations operating in the camp. Al-Hol, one of the largest displaced persons camps in Syria holds nearly 61,000 people. Ninety-four percent of Al-Hol's occupants are women and chil-

dren, with two-thirds under the age of 18. Besides the near-term risk of an outbreak of disease or other conditions that could cause a humanitarian catastrophe, efforts by ISIS to radicalize elements of this population pose longer-term concerns.

Stabilization programs in northeast Syria implemented by USAID and DOS have responded to the need for basic services in communities of origin to incentivize voluntary, safe, and dignified returns of displaced populations and help maintain stability. Current resources from all international donors are insufficient to meet demand, resulting in a sense of community grievance which extremist elements attempt to exploit. This presents opportunities for ISIS to re-emerge and increases the risk to the SDF.

Countering Violent Extremist Organizations—Yemen

The critical United States interest in Yemen resides in maintaining our ability to conduct counterterrorism activities against al-Qaida in the Arabian Peninsula (AQAP) and ISIS–Yemen. Without a lasting political solution and accompanying economic recovery, the conflict in Yemen will continue to threaten regional security and stability, and Yemen will remain a safe haven for VEOs aspiring to threaten United States interests and regional stability. USCENTCOM, in partnership with Saudi Arabia, the UAE, and the Republic of Yemen Government, has been effective in degrading VEO external operations capabilities in Yemen over the past several years.

STRATEGIC COMPETITION WITH CHINA AND THE DESTABILIZING INFLUENCE OF RUSSIA

The USCENTCOM AOR is, and always has been, a crossroads of global interests and a historically prime arena for foreign powers to compete for influence, resources and access. In 2020, China and Russia exploited ongoing regional crises, financial and infrastructure needs, perceptions of declining United States engagement, and the COVID–19 pandemic to advance their objectives across the Middle East and Central and South Asia (CASA) nations to gain or enhance influence in the region.

China's strategic engagement in the USCENTCOM AOR takes the long view with short and long-term objectives in mind. China's current interests and approach in the region are predominantly diplomatic and economic. China engaged with nearly every country in the AOR in 2020, using debt traps, the Belt and Road Initiative, and medical diplomacy to create dependence and expand its influence within the AOR. China's recent 25-year agreement with Iran could vastly expand Chinese influence in Iranian banking, telecommunications, ports, railways and dozens of economic projects in exchange for discounted oil. The agreement also proposes expanding military cooperation, potentially providing China an additional foothold in the Arabian Gulf while also undercutting United States efforts to negotiate with Iran. China has also emerged as an arms supplier to the region. Attempting to rival the United States as a "partner of choice," China sells military equipment at discount prices, unencumbered by United States deliberate processes, maintenance support packages, and end-use restrictions.

In 2021, China will continue to strengthen defense cooperation throughout the region through arms sales, exercises, and multilateral organizations such as the Shanghai Cooperation Organization, seeking to establish and strengthen trade relationships across the Middle East, prioritizing access to energy resources. China's long-term goals are not just to cultivate trade relationships, economic investment, and comprehensive partnerships among regional states, but to exert coercive influence and eventually establish a permanent military presence in an area from which it imports nearly 50 percent of its crude oil and roughly 40 percent of its natural gas.

Russia, in contrast, does not play a long game, yet it is equally disruptive to the region. Russia seeks to undermine and disrupt United States influence to enhance its own, and improve its position on the global stage. Russia's engagement in the USCENTCOM AOR is largely opportunistic and transactional. Fueled in part by a desire to play "spoiler" to United States interests but also by a set of economic factors, Russia maintains oil production agreements and works to expand nuclear energy markets, trade, and arms sales. Russia increased its activities in Syria by establishing an enduring military presence where it regularly interferes with the Global Coalition's D–ISIS campaign, and obtaining a warm-water base for its navy in Tartus. Russian military expansion in Syria provides it with a proving ground to test emerging capabilities, technologies, and fifth-generation equipment used for electronic warfare, air defense, UAS, and information operations—all in proximity to United States Forces. In September 2020, USCENTCOM deployed Sentinel radar and Bradley Fighting Vehicles to the Eastern Syria Security Area, and increased fighter patrols over United States Forces in response to a dangerous increase in unauthorized, unsafe Russian interactions threatening Coalition forces. Russia will

seek ways to challenge United States presence as opportunities present themselves, in an effort to position itself as an alternative to the West by offering to mediate regional conflicts, selling arms without end-use restrictions, offering military expertise, and participating in regional and multilateral organizations and military exercises. In Central Asia, where proximity to China and Russia is great and United States presence is comparatively small, every interaction holds significance. Opportunities to compete with China and Russia in this region manifest themselves through border security, counternarcotics, counterterrorism, and defense institution building.

As China and Russia compete militarily with the United States below the level of combat, USCENTCOM develops capabilities to address and mitigate gray-zone actions, safeguarding our technology from rivals operating in the region. USCENTCOM represents the world's most active electromagnetic battlespace and requires a robust interoperability and information sharing capability in order to protect U.S., allied, and partner critical capabilities as we move forward with collective defense initiatives. Adversary jamming of our commercial satellite communications allows state and non-state actors to asymmetrically contest and complicate U.S. Force projection. The increasing computational power and improvements in rival powers' cryptographic analysis capabilities makes it imperative that USCENTCOM and our partners plan, execute, and implement a cryptographic modernization plan to ensure maximum interoperability, mitigate potential cyber-attacks, and maintain a secure information exchange environment.

REGIONAL COOPERATION AND PARTNERSHIPS

As encapsulated in its overall mission, USCENTCOM will continue to focus on regional partnerships and cooperation. Two examples of maritime partnerships that promote regional collective security and demonstrate U.S. commitment to broad relationships and partners in the region are the Combined Maritime Force (CMF) and the International Maritime Security Construct (IMSC). The 33 nation CMF conducts maritime security operations to ensure the free flow of commerce, actively deny the use of the high seas to terrorist and illicit networks, and curtail illegal shipments of narcotics and lethal aid. The IMSC is a cooperation-based framework ensuring safety of maritime shipping and the free flow of seaborne commerce through presence, surveillance, and attribution of malign activities in international waters in and around the Arabian Gulf and the Bab al Mandeb.

The normalization of relations between Israel and a number of Muslim-majority Arab states in 2020 and the realignment of the Unified Command Plan (UCP) moving Israel from United States European Command to USCENTCOM provide new opportunities for enhancing regional stability and security cooperation. The UCP change better aligns the combatant command areas of responsibility with the organizational boundaries of other federal agencies, creating coordination efficiencies for whole-of-government efforts in the AOR. USCENTCOM plans to achieve initial operating capability and the shift of combatant command authority and responsibility by September of 2021. The normalization of relations between Israel and other key USCENTCOM partners, manifested initially in diplomatic and economic cooperation, reduces tensions and holds potential for eventual expansion of military cooperation and alignment toward shared threats.

USCENTCOM's senior defense officials and defense attachés (SDO/DATT) live, work, and develop close relationships with host nation officials in every country in the USCENTCOM AOR except Iran and Syria. Our partners place great weight on these relationships, and the military rank of our SDO/DATTs conveys respect and importance as to how the U.S. views the partnership we have with each nation.

COVID–19 IMPACTS

Prior to the COVID–19 pandemic, several governments in the USCENTCOM AOR faced growing economic challenges. Most governments incurred significant expenditures and revenue losses during the pandemic that exacerbated pre-existing socioeconomic conditions contributing to deepening popular unrest. Government officials largely prioritized efforts to mitigate the spread of the virus over implementing needed economic policy reforms. Impacts to regional economies will further fuel issues fomenting unrest to include provision and equitable distribution of services, medical care, and employment.

Across the AOR, USCENTCOM rapidly responded to the COVID–19 threat, implementing non-pharmaceutical interventions, obtaining and disseminating personal protective equipment, and adapting newly-developed treatment guidelines to an austere deployed environment. Despite the pandemic, military operations and medical support for combat and non-combat casualties remain fully mission capable. Exten-

sive public health measures and medical support across the AOR resulted in zero COVID–19-related service member deaths.

In fall 2020, USCENTCOM worked closely with the Joint Staff, Defense Health Agency, and Defense Logistics Agency to identify requirements for emerging COVID–19 vaccines released under Food and Drug Administration Emergency Use Authorization in December 2020. USCENTCOM prioritized forward-deployed forces in Afghanistan, Iraq, and Syria for early vaccine delivery and voluntary inoculation efforts.

As of 14 April 2021, over 7,114 cases of COVID–19 were identified resulting in 276 personnel medically evacuated from theater. Since March 2020, constraints associated with COVID–19 resulted in cancellation of 20 Joint or Combined exercises within the USCENTCOM AOR, impacting mission readiness and partner-nation collaboration. While many events were cancelled due to COVID–19, partners remain committed to continuing larger, multinational exercises like Bright Star and Eager Lion.

Refinement of theater deployment physical standards for all personnel helped reduce the impact to U.S., Coalition, and partner-nation civilians. Vaccinations for forward-deployed personnel in Afghanistan and the Gulf region began in late January 2021. Continued entry of COVID–19 infected personnel, finite quantities of on-hand testing consumables, limited quarantine and hospital capacity in theater, and irregular resupply remain significant obstacles to outbreak prevention and containment. In March, USCENTCOM significantly expanded vaccine distribution throughout the AOR with the intent to provide COVID–19 vaccines for all DOD personnel, dependents, and contractors willing to receive it to provide maximal force health protection. We have received a substantial portion of the required vaccines to meet that objective. Furthermore, USCENTCOM advocates providing COVID–19 vaccines for Coalition and partner forces working alongside U.S. Forces. Continuing an aggressive vaccination program for forward-deployed units, combined with further emphasis on effective pre-deployment restriction of movement and testing, clean transit routes into theater, and prioritization of deploying personnel for a CONUS-based, Service-led COVID–19 vaccination program will ensure continued mission effectiveness forward.

At USCENTCOM headquarters, restrictions on travel and movement in both the AOR and the U.S. impacted face-to-face key leader engagements and regular personnel rotations throughout much of 2020. USCENTCOM instituted robust teleworking procedures, with on-site staffing reduced to 25 percent in March 2020. This percentage increased to 50 percent in September 2020. USCENTCOM remains a warfighting headquarters, postured to support multiple active campaigns across the AOR. Partial staffing, teleworking, and effective uses of technology since March 2020 provided short-term solutions to enable safe operations in the headquarters and continuous support to forward-deployed formations.

TAKING CARE OF OUR PEOPLE

The USCENTCOM workforce operates at a warfighting tempo, whether deployed or working in the Tampa headquarters. The mental and physical stressors associated with the demands of our operational environment, exacerbated by COVID–19, present significant challenges to our workforce. Meeting the mental health and spiritual needs of our people regardless of religious affiliation remains a high priority at USCENTCOM. Our chaplains provide professional, confidential counseling across the USCENTCOM workforce addressing essential matters of the heart and soul to include sexual harassment, extremism, personal relationships, stress, and suicide prevention.

Sexual assault and sexual harassment, extremism, and discrimination break down the trust and cohesion necessary for the USCENTCOM workforce to execute its missions effectively and efficiently. To combat these challenges, USCENTCOM places command emphasis on programs that build resilience, readiness, and cohesion. It is a leadership responsibility to provide a safe work environment, and to hold accountable those who seek to disrupt it. USCENTCOM leaders understand it is not just what our people hear their leaders say, but what they see their leaders do that makes an impact.

Improving diversity and inclusion across the force is an operational imperative to meet the demands of strategic competition. USCENTCOM takes deliberate actions to build a diverse workforce promoting equality and innovation. USCENTCOM established a Diversity and Inclusion position, singularly focused on advising the command on all matters relating to discrimination and institutional biases, as well as barriers to diversity and inclusion across the organization.

USCENTCOM remains fully committed to the prevention of sexual assault and sexual harassment, improving our command climate and prevention efforts in both of these areas. We constantly work to ensure both our military and civilian workforce feel comfortable coming forward and reporting any concerns, and ensure that leaders at all levels take appropriate action to build positive workplace climates.

USCENTCOM recently completed a command-wide stand down to address extremism. These stand downs were led by general/flag rank officers or senior civilians, and included virtual training modules featuring subject matter experts and facilitated small-group discussions to build awareness and help prevent actions associated with extremist behaviors. USCENTCOM's leaders are charged with the responsibility to continue this dialogue beyond the DOD mandate to make clear that operating in a command free of discrimination, hate, and harassment while accomplishing our mission is paramount to our success.

Taking care of our people is a very high priority for me personally as the USCENTCOM commander. I speak frequently to my subordinate commanders on these matters because this is commander's business. It requires the full attention of the chain of command, and in USCENTCOM, these critical matters have that full attention.

CONCLUSION

The USCENTCOM AOR remains challenging and dynamic. One constant in USCENTCOM remains the strength of our people. As nearly two decades and two of the longest conflicts in U.S. history begin to wind down, our soldiers, sailors, airmen, marines, coastguardsmen, guardians, civilians, and their families remain steadfast in their commitment to our mission and the vital roles they serve in U.S. national security. Their service and sacrifice over many long years of conflict is humbling and inspirational, benefiting the lives of millions across the U.S. and the AOR. We honor those who have sacrificed by ensuring the mission continues, and their sacrifices were not in vain.

USCENTCOM fulfills its missions, appreciative of the efforts and support of our civilian leadership at the Department of Defense on our behalf. We acknowledge the teamwork of the interagency and thank the members of Congress, the Defense Committees, and their staffs, without whose consistent and timely support we would be unable to accomplish our missions in support of U.S. national security interests and the will of the American people.

Chairman REED. Thank you very much, General McKenzie. General Townsend, please.

STATEMENT OF GENERAL STEPHEN J. TOWNSEND, USA, COMMANDER, UNITED STATES AFRICA COMMAND

General TOWNSEND. Can you hear me?

Chairman REED. Yes, sir.

General TOWNSEND. Chairman Reed, Ranking Member Inhofe, and Members of the Committee, good morning, and thank you for the opportunity to appear today. It is a privilege to represent America's exceptional men and women at United States Africa Command, who are dedicated to securing United States interests and preserving our strategic options on the African continent. This morning I am accompanied by AFRICOM's senior enlisted leader, Marine Corps Sergeant Major Richard Thresher, and one of my key staff advisors, Air Force Colonel Jacqueline Breeden. I am also here this morning with my colleague and friend, General Frank McKenzie, the CENTCOM commander, to discuss shared challenges and opportunities in our areas of responsibility and the high return the American people give of their defense investments around the globe.

Historically, America has not been penalized for underestimating the importance of Africa. Today, we can no longer afford to underestimate the economic opportunity and the strategic consequence that Africa embodies, and which competitors, like China and Rus-

sia, fully recognize. Africa is a crossroads of the globe. The recent blockage of the Suez Canal not only demonstrated the importance of critical sea lines of communication flowing through the Mediterranean and Red Seas, but also around the Cape of Good Hope. Violent extremist organizations, competitor activities, and fragile states are among some of the threats to U.S. interests.

Beyond geography, global population growth is largely African. By 2050, 1 in 4 people on the planet will live in Africa. Rapidly-growing markets, 60 percent of the world's arable land, and vast untapped resources, including strategic rare earth minerals, provide tremendous economic potential. Thirteen of the world's 25 fastest-growing economies are in Africa. Africa's tremendous opportunities are offset by significant challenges, including climate change, food shortages, poverty, ungoverned spaces, historic grievances, and other factors, that make the continent also home to 14 of the world's 20 most fragile countries.

Our strategic competitors are very active in Africa. China has invested heavily in their second continent, where some think tanks call it China's fifth island chain. Russia seeks to exploit instability and fragility for their own gain and at United States expense. Iran is increasingly active on the continent. At the same time, African-based violent extremists, like al Qaeda affiliates, Al-Shabab and ISIS, thrive in the government's—in the continent's ungoverned spaces. They provide the greatest threat to many of our African partners and aspire to kill Americans in Africa, as well as here at home.

Across the diverse continent, United States AFRICOM operates with .3 percent of DOD's budget and .3 percent of DOD's manpower. This tiny investment pays enormous dividends as just under 6,000 servicemembers, civilians, and contractors work with our partners, both interagency and foreign, to counter malign actors and transnational threats, respond to crises, and strengthen security forces to advance U.S. interests and promote regional security, stability, and prosperity. AFRICOM works every day to protect America's security and advance our access and influence. We do this arm in arm with the U.S. Interagency and through coordinated action with our allies and partners. What AFRICOM accomplishes with a few people and a few dollars on a continent three-and-a-half the size of the continental United States is a bargain for the American taxpayer and a low-cost insurance policy for America's security.

Mr. Chairman and Members of the Committee, thanks for your continued support to our armed forces, and I look forward to your questions.

[The prepared statement of General Townsend follows:]

PREPARED STATEMENT BY GENERAL STEPHEN J. TOWNSEND

INTRODUCTION: *STRONG RETURN ON OUR MODEST INVESTMENT IN THIS DYNAMIC THEATER.*

Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee, it is an honor to come before you again to represent the dedicated and professional service members and civilians of United States Africa Command (USAFRICOM). Since the last time I briefed you, USAFRICOM participated in a Command review and has developed a new campaign plan to ensure our alignment with the National Defense Strategy (NDS). USAFRICOM's Campaign Plan (ACP)

aligns with our Nation's strategic objectives to protect our people and our Homeland, assure our allies and partners, and counter malign actors. Our national interests guide our campaign plan and our mission: *United States Africa Command, with partners, counters malign actors and transnational threats, responds to crises, and strengthens security forces in order to advance United States interests and promote regional security, stability, and prosperity.* I am confident the American people are getting a good value for our very modest investment of defense resources in Africa.

The African Continent is important to the United States politically, economically, and militarily. It is home to the fastest growing economies and populations in the world, sits at crossroads of international commerce, trade and global force flow, and watches over important sea lines of communication. Our future security, prosperity, and ability to project power globally rest on free, open, and secure access in and around Africa. Activities of competitor states, violent extremist organizations, instability and fragility all challenge our access. Despite these challenges, this dynamic continent presents a number of opportunities for the United States to advance our interests.

The COVID–19 pandemic illustrates the coupling of challenges and opportunities in Africa. Our forces remained in place and continued to operate within the limits of our force health protection measures. Our nation's values and long-term whole-of-government commitment to support and build partner capacity has been our strongest assets over the last year. To combat and contain the pandemic, African partners have mobilized medical capabilities built over decades of United States-led efforts to combat infectious diseases. USAFRICOM supported United States efforts to provide COVID–19 assistance in 43 countries, including the delivery of nearly $500 million in medical supplies. While force health protective measures required us to re-scope many of our activities, we have stayed connected with our African partners during their time of need.

STRATEGIC ENVIRONMENT: *INCREDIBLE POTENTIAL CHECKED BY INCREDIBLE OBSTACLES*

A Vast Continent of Opportunity and Challenge

The land mass of Africa is larger than the United States, China, India, Japan, and most of Europe combined. Over half of the world's arable land is on the continent, along with much of the planet's untapped mineral resources,[1] including strategic minerals. Africa is home to 11 of the world's 25 fastest growing economies, as measured by gross domestic product data for 2020.[2] Africa's population is young, growing fast, and expected to top two billion in 2050, when more than a quarter of the world's inhabitants will live on the continent. By 2100, Africa's population could nearly double again. Not only is the continent's growth rate the highest in the world, but the population is the youngest, with 41 percent under the age of 15.[3] The growing size of the population, illustrates the rising global importance of the African continent and the momentum of Africa's expanding markets.

Africa's rapid population growth also amplifies several challenges. Over two-thirds of Africans live in poverty.[4] Natural resource exploitation, impacts of climate change, and infectious disease outbreaks all fuel instability and conflict. Desertification, particularly in the Lake Chad Basin where the Sahara Desert is expanding into the Sahel, has dramatically reduced arable land, threatened food security, and created conditions for instability and insecurity. Lack of economic opportunities and a search for a better life lead to migration, which creates compounding challenges. An increase in migration across Africa, as well as into Europe and North America, feeds a lucrative market for extremist organizations and criminal networks. The Fund for Peace "Fragile State Index" captures the aggregation of these challenges. Fourteen of the world's top twenty most fragile states are in the USAFRICOM Area of Responsibility (AOR).[5] Despite these challenges, Africa's po-

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[1] Grow Africa: "60 percent of Arable Land is in Africa and it has Billions in Investment Potential," 2020.

[2] International Monetary Fund, 2020 GDP growth (annual percent) https://www.imf.org/ (South Sudan, Egypt, Rwanda, Benin, Tanzania, Ethiopia, Côte d'Ivoire, Guinea, Kenya, Ghana, Malawi, and Niger), 2021

[3] United Nations Department of Economic and Social Affairs/Population Division World Population Prospects, 2019

[4] 85 percent of Africans live off less than 5.50 USD per day, World Bank, 2019

[5] The Fund for Peace, "Fragile State Index" https://fragilestateindex.org/data/ (Yemen, Somalia, South Sudan, Syria, Democratic Republic of Congo, Central African Republic, Chad, Sudan, Afghanistan, Zimbabwe, Cameroon, Burundi, Haiti, Nigeria, Guinea, Mali, Iraq, Ethiopia, Myanmar, Libya). Three of the top 20 (Afghanistan, Syria, and Iraq) represent $1.5 trillion in "war-related" expenses from fiscal year 2001 to fiscal year 2019 according to the DOD Comptroller., 2021

tential and strategic location continue to attract investment and engagement by geo-strategic competitors.

Strategic Geography

Africa has global strategic importance relative to NATO's Southern Flank, the flow of commerce through the Red Sea, and protecting access to the Middle East, Indian Ocean, and South-East Asia. Located at the crossroads of the world, Africa watches over strategic choke points including the Strait of Gibraltar, the Strait of Sicily, the Red Sea, the Bab al Mandeb, and the Mozambique Channel. The sea line of communication (SLOC) running through the Mediterranean and Red Seas, and a second, dipping around the Cape of Good Hope, connect the East Coast of the United States to East Africa, the Middle East, India, and South East Asia. These pathways are essential to global trade, ongoing operations and contingency plans of seven other Combatant Commands. These corridors facilitate one-third of the shipping between North America and Asia, and one-third of global oil shipping. United States and global security depend on unhindered access to these waters.

Strategic Competition

The NDS prioritizes geo-political competition due to the "magnitude of the threats [China and Russia] pose to United States security and prosperity, and the potential for those threats to increase in the future."[6] Both Beijing and Moscow have long recognized the political, military, and economic importance of Africa and each continues to seize opportunities to expand their influence across the continent. Unencumbered by international norms and standards of transparency, our competitors are able to combine both government and private resources to gain influence. Exploitative practices for trade, resource extraction, weapons sales, and debt manipulation ultimately weakens governance, slows economic growth, and fosters instability.

The People's Republic of China leads the international community in head of state and senior leadership visits to Africa over the last decade—investing heavily, pledging $60 billion in infrastructure and development, and increasing arms sales to African countries. Beijing's activities in Africa are outpacing those of the United States and our allies as they seek resources and markets to feed economic growth in China and leverage economic tools to increase their global reach and influence. The People's Republic of China has 52 embassies in Africa, three more than the United States, and they continue to expand their base in Djibouti into a platform to project power across the continent and its waters—completing a large naval pier this year. The base is only 12 kilometers from our 3,400 DOD personnel at Camp Lemonnier, the Department's primary forward operating location in the USAFRICOM AOR. Beijing seeks to open additional bases, tying their commercial seaport investments in East, West and Southern Africa closely with involvement by Chinese military forces in order to further their geo-strategic interests.

Russian strategy in Africa has long centered on building influence to facilitate economic opportunity, obtain political support for Russian initiatives, and increase military presence on NATO's southern flank. Russian private military companies (PMCs) are a destabilizing influence in Africa, frequently securing Russian investments at the expense of African interests. Russian PMCs almost certainly downed an unarmed, unmanned United States aircraft in Libya in November 2019 using a sophisticated Russian air defense system. This past year, USAFRICOM exposed the extent of the Kremlin's malign involvement, despite its continued denial, by identifying and publicizing their deployment of high performance fighter aircraft to Libya.

Iranian military capabilities threaten sea-lanes through the Red Sea and our posture locations in the Horn of Africa. Iranian support to Yemen's Houthis further jeopardizes freedom of navigation in the Red Sea and increases tensions and instability in East Africa. Camp Lemonnier's geostrategic location makes it a critical posture location to support USCENTCOM plans and operations. To mitigate this risk to our people, this year USAFRICOM requested funding for improving force protection. I am thankful that Congress has authorized and appropriated these funds. With the inclusion of the Iranian threat, East Africa is a nexus of four of the five major threats identified in the National Defense Strategy: The People's Republic of China, Russia, Iran, and violent extremist organizations (VEOs).

VEOs are a Primary Threat to Many African Partners

When I meet with African leaders, their primary concern is often VEOs killing their soldiers, kidnapping their civilians, and challenging their authority to rule.

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[6] 2018 National Defense Strategy: Sharpening the American Military Competitive Edge, 2018, p 7.

Transnational VEOs, like al Qaeda and ISIS, are expanding in Africa at a rapid pace, taking advantage of weak governance and disenfranchised populations. They threaten our partners' capacity to govern effectively, protect their populations, and improve their economies. Their terror attacks on the continent exacerbate the challenges of vulnerable populations, and some of them remain committed to strike at U.S. interests in both the region and the U.S. Homeland.

East Africa is home to Al-Shabaab, the largest, wealthiest, and most violent Al Qaeda-associated group in the world. In 2019, Al-Shabaab's leadership publicly identified Americans and United States interests worldwide as priority targets, mirroring Usama bin Laden's declaration of war on the United States in 1996. In January 2020, Al-Shabaab followed through on this threat, attacking our forces at the Kenyan Naval Base at Manda Bay. This complex and well-resourced attack killed three Americans and clearly demonstrated Al-Shabaab's willingness and capability to attack the United States outside of Somalia. In February 2021, Al-Shabaab emir Ahmed Diriye repeated his call for violent attacks against Americans. Today, Al-Shabaab is the primary African VEO threat to American interests.

The Islamic State is rapidly franchising across Africa, becoming increasingly more capable, violent, and difficult for our African partners to defeat without international support. In West Africa, the primary VEO threats are ISIS networks in the Sahel and Lake Chad Basin, Boko Haram, and al Qaeda's Jama'at Nusrat al-Islam wal-Muslimin (JNIM). Kidnapping for ransom, targeting Westerners, remains a common tactic for VEOs and criminal organizations. USAFRICOM's continued engagement in the Counter-VEO (C–VEO) fight in West Africa has developed the situational awareness and regional partnerships that sustain United States access and influence. These relationships enabled USAFRICOM to rescue Mr. Philipe Walton within days of his abduction in Niger last October. To conduct this rescue mission, USAFRICOM requested, and within hours received approval for, armed access, basing, and overflight from seven countries and permission to conduct a raid in Nigeria. Continued collaboration with, and support to, our French African partners as well as our European allies, is imperative to counter growing extremism with limited United States resources in the West. Bottom line: Our relationships and our counter-VEO efforts build U.S. influence over strategic competitors.

STRATEGIC APPROACH: *AN OUNCE OF PREVENTION AND CHEAP INSURANCE FOR AMERICA*

A secure, stable, and prosperous Africa—aligned with the United States—is an enduring American interest. The U.S. must continue to work with our allies and partners to advance our mutual interests within the rules-based international system. Our campaign plan is focused on achieving four campaign objectives, developed and refined over the last year: 1) Gain and Maintain Strategic Access and Influence, 2) Disrupt VEO Threats to U.S. Interests, 3) Respond to Crises to Protect U.S. Interests, 4) Coordinate Action with Allies and Partners to Achieve Shared Security Objectives.

USAFRICOM resources offer cheap insurance and an ounce of prevention for America. Funds to support contracted ISR capabilities as well as personnel and recovery and casualty evacuation dramatically improve our ability to help our troops accomplish their missions and protect them with less impact on high demand military capabilities. Similarly, modest but sustained funding levels for exercises, professional education and Section 333and 332 activities are critical to our ability to build partner capacity to do more for themselves and to compete effectively with competitors.

Gain and Maintain Strategic Access and Influence

Strategic access to exert influence and project power enables a broad range of U.S. Government activities. USAFRICOM competes and acts to maintain or expand U.S. influence and access. Our influence in Africa provides an advantage over competitors, deters conflict, assures partners of our commitment, and postures the United States to transition effectively to crisis or conflict if necessary. In cooperation with our allies, USAFRICOM builds trust and strengthens military relationships to allow for the rapid flow of forces and enable warplans when needed. As competition is increasingly global, Africa is rich with opportunities to counter, disrupt, tax, and win against strategic competitors.

USAFRICOM prioritizes access in key geostrategic locations to disrupt competitor efforts that threaten United States freedom of action and to check malign activities which exploit our African partners. While we focus our military activities in key locations, we stay engaged across the continent to maintain situational awareness, support partners and allies, and respond to emerging crises.

Disrupt VEO Threats to U.S. Interests

Persistent state fragility in Africa drives instability and violent extremism, but also invites competitor exploitation. VEOs remain a significant threat to the shared interests of the United States, our allies, and our African partners. Many of these VEOs explicitly aspire to kill Americans. USAFRICOM, working with African and European partners, monitors these VEOs for indicators and warnings of attacks against the Homeland, our embassies, and our citizens. Monitoring VEO capabilities and intentions can be resource intensive but is a vital first step in preventing successful terrorist attacks.

Regional VEOs are the number one security concern for many of our partners. Access and influence stem from helping our partners with the problems they face. Shared efforts against VEOs provide the best opportunity to strengthen partnerships and to ensure the U.S. is the security partner of choice in priority countries. In Africa, counter VEO efforts are strategic competition.

USAFRICOM contributes to multi-national efforts to disrupt VEOs while also conducting direct actions to degrade VEOs who threaten the Homeland. In the East, USAFRICOM capabilities support and enable the African Union Mission in Somalia (AMISOM) and the multi-national effort to defeat Al Shabaab, an arm of al Qaeda, and build sustainable security in Somalia as outlined in the 2017 London Security Pact. In the West, USAFRICOM supports the French-led multi-national coalition, United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA), and the African-led G5 Sahel forces against Al Qaeda and ISIS affiliates. This sustainable, partner-centric approach protects the Homeland, builds relationships, creates access, and thwarts competitor advances.

Respond to Crises to Protect U.S. Interests

The DOD often helps set the conditions necessary for subsequent whole-of-government efforts across Africa. The tremendous work of the Department of State (DOS), U.S. Agency for International Development (USAID), and other organizations has dramatically reduced the impact of diseases like HIV/AIDS, Ebola, and COVID–19, strengthened educational systems, supported democratic elections, and encouraged economic growth. Whole-of-American Government efforts are contingent upon the ability of USAFRICOM and the DOD to protect our embassies, our investments, and our people working in Africa to advance United States interests.

The DOS has designated 30 diplomatic facilities worldwide as High Threat, High Risk posts, 15 of them are in Africa. USAFRICOM shares many of our crisis response forces with USEUCOM to maximize savings and readiness to the department. In the last year, the attack on Manda Bay in Kenya, diplomatic engagements in Libya, the coup in Mali, recovery of an American Citizen, the order to reposition from Somalia and ongoing violence in Ethiopia have all tested our response capabilities across the spectrum of operations and across tens of thousands of miles.

As our service members operate in small groups in remote locations throughout the continent, USAFRICOM is continuously adjusting our limited collection, medical, transportation, and response assets to protect our troops. I would like to thank Congress for authorizing and appropriating funds to dramatically improve force protection, personnel recovery, and casualty evacuation efforts to provide our troops the medical care where and when they need it.

Coordinate Action with Allies and Partners to Achieve Shared Security Objectives

USAFRICOM maintains a well-developed constellation of allies, multi-national organizations (European Union, African Union, NATO, and the United Nations), and African partners.[7] These relationships enable USAFRICOM to coordinate action, enhance interoperability, and share costs and risks to achieve mutual security goals.

USAFRICOM's active participation in multi-national efforts reinforces cooperation for mutual benefit, assures partners of U.S. commitment, and denies competitors opportunities to erode U.S. influence. Enhanced relationships and military activities enable USAFRICOM to help create time and space for our African partners to build the governance and economic growth necessary to gain the capacity to repel malign actors and VEO influences. Building partner capability is also an important tool in strategic competition, reinforcing the United States role as Africa's security partner of choice while furthering American values and influence. A great example of building relationships and trust is Exercise African Lion. Since 2002, African Lion has brought together partners and allies to enhance interoperability, build readiness and strengthen relationships. Trust is built over time—the relationships made while

[7] USAFRICOM maintains Foreign Liaison Officers representing 19 countries and multinational organizations.

we develop partner capabilities provide America with long-term strategic alliances needed to address future challenges and ensure regional security and prosperity.

REGIONAL ASSESSMENTS: *A LARGE, COMPLEX, AND DYNAMIC THEATER*

East Africa

The strategic geography of East Africa remains vital to United States National Security. Despite a determined Chinese effort to assert influence in Djibouti and the region, our relationship with the Djiboutian Government remains strong. The strength of the relationship built between the United States and Djibouti was evident in the opening months of the COVID–19 pandemic. As global travel became more difficult, senior Djiboutian leaders approved every one of our flight requests into and out of our three facilities that comprise the Djibouti Base Cluster. This vitally important base houses approximately half of the U.S. military personnel in the USAFRICOM AOR and enables the U.S. to protect the SLOC through the Red Sea and project power across East, Central, and Southern Africa as well as into the USCENTCOM and USINDOPACOM AORs. The base cluster supports global force flow, sustains forward staged response forces, supports strategic competition, and enables C–VEO activities in both USAFRICOM and USCENTCOM's AORs.

The recent Operation Octave Quartz demonstrated the agility and flexibility of the Joint Force. In just over 60 days, USAFRICOM received the order to reposition from Somalia, planned the operation, assembled a Joint Task Force of 13,400 service members from around the globe, and executed this high-risk mission ahead of schedule and without major incident. Once again, our strong partnerships with Djibouti and Kenya played a vital role in our successful repositioning. Our mission in Somalia has not changed, but our posture has. Ultimately, achieving our shared objectives in Somalia is tied to reconciliation between the Federal Government in Mogadishu and the Federal Member States, building institutional capacity across various sectors, and enhancing support to the troop contributing countries of AMISOM.

The collective efforts of the United States Government, international community, and regional partners, has created tangible progress in Somalia, albeit far slower, far smaller, and far more fragile than we would like. AMISOM and the Somali National Army (SNA) have made slow gains in Al-Shabaab strongholds in the south, holding territory and establishing outposts. However, pre-election political friction between the Federal Government of Somalia and Somali Federal Member States has distracted Mogadishu from our common fight against Al-Shabaab. United States-trained and supported "Danab" SNA units, a result of the USG's commitment at the 2017 London Security Pact, most often spearhead security operations but it is critical that AMISOM remain in the fight until the SNA is able to counter Al-Shabaab themselves. As this is written, USAFRICOM is working with the Joint Staff and OSD to review our mission, resources and authorities in East Africa as part of the Global Posture Review.

West Africa

USAFRICOM employs a small footprint in West Africa as part of our African-led, allied-assisted, and United States-enabled framework to counter the expansion of VEOs in the Sahel and the Lake Chad Basin and to monitor increased strategic competitor activities. We coordinate our efforts with the larger multi-national security activities in West Africa (G5–Sahel and Multi-National Joint Task Force) and provide bilateral support to partner nations. However, progress is slow because in much of West Africa governance remains weak and populations disenfranchised. VEOs remain a significant threat and their violence continues to grow and spread.

Extreme poverty, more frequent and intense weather events, vulnerable and marginalized populations, separatist movements, and illicit transnational networks overlap in the Sahel, creating opportunities for VEOs to establish safe haven, increasingly control the local populace and grow in strength. JNIM and ISIS associates have expanded in the region and now threaten the littoral states from the north—a development of increasing concern. ISIS–Core promotes ISIS–West Africa as a flagship network, while Al Qaeda supports their global network using revenue generated in the Sahel, mostly through kidnapping for ransom. Faced with these growing VEO threats, African countries seek United States support, making C–VEO efforts one of our most effective tools to counter competitor influence.

The People's Republic of China's "Belt and Road Initiative" is one competitor initiative that seeks to increase Chinese access and influence along the Atlantic Coast of Africa. Today, the People's Republic of China has invested heavily in large-scale industrial fishing infrastructure in the Gulf of Guinea (GoG), making the People's Republic of China the primary contributor to a growing food crisis that will further

drive instability in West Africa. This exploitation—much of it illegal, unregulated, or under-reported illegal, unreported, and unregulated (IUU)—is not only counterproductive to our shared security objectives with West African countries, but also provides the economic pretense the People's Republic of China has previously used to justify increased military access. The way forward requires continued efforts with African partners and allies to build capacity to enforce their own maritime sovereignty. For example, Exercise Obangame Express is one way we seek to improve regional maritime domain awareness, capacity and cooperation. But, this annual event is insufficient by itself. A multinational maritime task force is a good option to address the plague of piracy in the Gulf of Guinea. Additionally, piratical attacks in Gulf of Guinea have become more frequent and violent, causing risk to international commerce and threatening maritime security.

USAFRICOM will continue to work with Gulf of Guinea nations and other international partners to help strengthen regional cooperation and responses to piracy. Our European allies play critical roles in C–VEO operations in West Africa. France, who leads C–VEO multilateral efforts in the Sahel, is committed to security in the region with approximately 5,500 troops conducting security force assistance and direct action with support from a number of European allies. We mourn the loss, in recent months, of five French Soldiers killed fighting to secure our mutual security interests in West Africa. Our mutual support and cooperation with the French has had the effect of multiplying the resources available to advance our shared interests. The European Union and United Nations maintain multi-national missions in West Africa and the continued effort of the United States Government help keep these international partners engaged in this fight and sustain France's leadership of this effort.

North Africa

The Kingdom of Morocco, first to recognize our Nation in 1777, remains our strongest partner through exercises, training programs, foreign military sales, and counterterrorism cooperation. The Tunisians are also strong partners in the fight against ISIS–Libya and reinforce our security assistance with national funds. Our military relationship with Algeria significantly improved in the last year. Once looking almost exclusively to Russia, senior officials in the Algerian Government have recently expressed their desire to continue improving relations with the United States.

In Libya, the election of a new Prime Minister and an Interim Unity Government mark continued progress. In the last 12 months, USAFRICOM supported our State Department in formally establishing a diplomatic link and we appreciate our excellent cooperation with AMB Norland and his team. Libya has provided Russia access and influence along NATO's southern flank. The Kremlin has publically denied direct involvement in the Libyan conflict, while thinly masking their governmental activities under the banner of the Wagner Group PMC. Continued progress on the political front is the best chance for long-term stability in Libya.

Central and Southern Africa

The potential exists for stronger partnerships and opportunities in central and southern Africa. Botswana is a bright spot with its enduring democracy, continued stability, professional military, and good relations with the United States. South Africa, the second-largest economy and our largest trading partner on the continent, has been the hardest hit by the global pandemic. USAFRICOM provided COVID–19 aid with the help of the OSD, DOS, and USAID. In northern Mozambique, where United States and European energy partners have planned an approximately $50 billion investment in liquid natural gas, we have seen a rapid increase in sophistication and violence from local groups that have evolved into the newest African affiliate of corporate ISIS. [8]

Despite emerging opportunities, the People's Republic of China and Russia currently have the inside track in much of central and southern Africa. Russia is testing its playbook for malign activity in the Central African Republic, where they are employing PMCs, extracting minerals, and buying influence. Likewise, the People's Republic of China provided welcome COVID–19 aid diplomacy in South Africa. Without significant forces in Central and Southern Africa outside of our embassies, USAFRICOM maintains a limited supporting role to our United States diplomatic and development efforts in this region.

CONCLUSION: *A SECURE AND STABLE AFRICA IS AN ENDURING AMERICAN INTEREST.*

Economy of Force

A small investment in Africa goes a long, long way. What USAFRICOM accomplishes with a few troops and a few dollars, on a continent 3.5 times the size of the

continental United States, is a bargain for the American taxpayer. Honest assessments and prudent investments ensure the U.S. maximizes the impact of every taxpayer dollar spent to secure American interests and support allies and partners. The locations where USAFRICOM resources and activities are concentrated represent the overlapping points where small teams of dedicated Americans can have outsized impacts on geo-strategic competition, protecting our personnel and Homeland, and reassuring our partners and allies. Providing our service members with the support we expect and they deserve, while operating across a vast continent with limited infrastructure, requires that power projection platforms, force protection, ISR, response forces, communications equipment, and medical care be forward deployed and ready to respond. Our partners and allies already bear much of this burden through reciprocal support and the relationships developed in exercises, intelligence sharing, coordination, and engagements. We could not complete our mission and advance our national interests in Africa without operating by, with, and through our allies and partners.

An Ounce of Prevention

USAFRICOM remains ready to protect United States citizens, advance our interests and strategic access, and to respond to crises in Africa. The men and women of USAFRICOM, our partners on the continent, and our broad collection of stakeholders understand how important Africa is to the global economy and security environment. Strategic access to Africa and its surrounding waters will be even more vital to United States national security in the future than it has been in the past.

Africa is key terrain for strategic competition with the People's Republic of China and Russia and our support to C–VEO operations is necessary to protect the Homeland as well as America's citizens and interests abroad. Today, we are reviewing our very modest resources to maximize our ability to protect and advance our national security interests. Persistent engagement by the United States military, in areas where our objectives are shared with our African and European partners, allows the United States to remain the security partner of choice across much of the continent. Furthermore, the United States has the opportunity to apply our asymmetric advantages in C–VEO experience, intelligence collection, and military professionalism in furthering international norms, good governance, economic development, and security cooperation against the challenges facing our African partners. Our investments to improve the security environment in Africa will pay ever-larger dividends in the future as African states are increasingly able to harness opportunities of the African continent.

It remains my honor to lead the service members, civilians, and families of United States Africa Command. Our efforts have made the U.S. safer, secured United States interests, and preserved America's strategic options in the region, while helping Africans do more for themselves. I hope you are as convinced as I am that USAFRICOM is a good investment in the future—for America, for Africa, and for the world. Thank you.

Chairman REED. Thank you very much, General Townsend, and let me remind my colleagues, because this is a hybrid hearing, of our procedures. Rather than using the early bird rule, we will recognize individuals by seniority. We will do the standard 5-minute rounds of questioning, and I ask my colleagues to keep track of the clock. Finally, for everyone to be heard effectively, I would ask all colleagues to please mute your microphones when not speaking. Thank you very much.

General McKenzie, the intelligence community in the 2021 Estimate indicated that al Qaeda and ISIS remain among the greatest threats to the United States overseas, and also continue to have the intent to project power into the United States. In addition, the Afghan Study Group, led by General Dunford and Senator Ayotte, concluded that United States withdrawal—a complete withdrawal, which is—I do not think you are contemplating—a complete withdrawal would allow al-Qaeda and other elements to restore themselves within 18 to 36 months. Do you agree with these assessments, one, that al-Qaeda and ISIS are probably among the greatest threats, and, two, if unchecked they will revitalize themselves?

General MCKENZIE. Chairman, I do agree that al Qaeda and ISIS remain—have aspirational goals of continuing to attack us, so I completely agree with the intelligence community's estimate.

Chairman REED. Director Burns of the Central Intelligence Agency (CIA) indicated in testimony that the very nature of the withdrawal will diminish, to a degree, our ability to collect intelligence. Do you concur with that assessment, too?

General MCKENZIE. Sir, I do concur with that assessment. We will lose the abilities to see completely into Afghanistan.

Chairman REED. So the issue before us, very practically, is how do we compensate for those facts on the ground and here. Perhaps you might reserve some more comments to the classified section. How do you intend to compensate so that we can effectively disrupt al Qaeda and ISIS?

General MCKENZIE. Chairman, I will have more pointed comments in our closed session, but briefly, I would tell you it will be difficult. It is not impossible to accomplish this task. A couple of things have changed since 2001 when were last attacked from Afghanistan. First of all, the United States itself is a far harder target than we were in September of 2001. It is more difficult to operate in the United States. It is more difficult to gain access to the United States. So a variety of things have changed inside the United States, and we should always keep that in mind. Additionally, although we are going, in fact, to pull out of Afghanistan, and I am operating under the concept that for United States military presence, zero is going to be zero, and we can talk a little bit more about that in the closed session. We will have an architecture in the theater that will allow us to look into Afghanistan. It will not give us the same picture that we have got now. It will allow us to see in. The ranges will be greater, the resources will be greater, the risks will all be greater, but it will be possible to do those things. It is certainly not impossible, but we will not have the vision that we have now.

Chairman REED. Thank you very much, General McKenzie. General Townsend, again, thank you gentlemen for your leadership and your advice to the Committee. We have withdrawn, effectively, our forces from Somalia. Can you assess what is the operational effect? One of the factors that I think you both recognize is that the terrorist threat once was—seemed to be solely located in the mountains of Afghanistan, but now it is dispersed throughout the entire CENTCOM region. Syria has the capability of generating forces, and Somalia also, with Al-Shabab, has that capability. So can you give us a sense of the effect of the withdrawal on your operations?

General TOWNSEND. Thank you, Chairman. So in the last 60 to 90 days of the previous Administration, we were directed, as you stated, to reposition our forces out of Somalia. We left a small footprint behind in Mogadishu tied into the embassy there of less than 100. Since that time, we have been commuting to work. We work virtually with our partners from bases in the region, and then we fly in to conduct training and to advise and assist our partners. We have done four such operations in the last roughly 90 days. One of them is ongoing right now, and we are continually revising and improving the way that we do that to make it as effective as we can.

There is no denying that repositioning forces out of Somalia has introduced new layers of complexity and risk, and, as General McKenzie said, our understanding of what is happening in Somalia is less now than it was when we were there on the ground physically located with our partners, so we are working to make this new mode of operation work. At the same time, we are participating in the Global Posture Review with the Department of Defense, and we will be presenting options to the Secretary of Defense on the way ahead. And, of course, I do not want to get ahead of my civilian leadership to address that, but we are working to make it work.

I would say that probably, though, the biggest impact to security in Somalia right now is less Al-Shabab and more so the political dysfunction that exists between the federal government of Somalia and the federal member states, and, as you mentioned in your opening remarks, the extra-constitutional extension of the president's term in office. That is our biggest challenge, I think, right now.

Chairman REED. Thank you. Ironically or coincidentally, what you are anticipating and actually experience at this moment is very much the same situation that General McKenzie might face, having withdrawn forces from the target country, for want of a better word. You have to operate on the periphery. You are doing that, and you face political/cultural issues, and General McKenzie will face political/cultural issues. So, again, we look forward to the classified session to get more into detail of these questions. Thank you. Senator Inhofe, please.

Senator INHOFE. Yeah, thank you, Mr. Chairman. You hit it right on there. The term that is being used, "over the horizon," which merely means that you are taking troops out of the area and conducting your activity from another country, and that is something that I disagreed with in the previous Administration. The last Administration pulled nearly all of the 200 troops that we had in Somalia out, and that was the previous Administration. I disagreed with that at that time, and I really think that we were right in disagreeing with that. History has shown that it does not work as well from an adjoining country as it does from the country where the activity is. So I would say—I would ask them the—General Townsend, I know you are going to be able to do this and will continue to do it, but does an over-the-horizon counterterrorism strategy in Somalia not make your job harder? General Townsend.

General TOWNSEND. Ranking Member, I would agree with the General McKenzie's characterization. It makes it more difficult. It does not make it impossible.

Senator INHOFE. Yeah, well, I understand that, and I would say the same thing. I know that General McKenzie has already expressed, yeah, it makes it more difficult, but it does not make it impossible. You guys are soldiers and you have a duty to do it, and you will do it. Now, General McKenzie, are you concerned that we will not be able to secure and maintain the U.S. embassy? Tell me what—if all this happens as it is designed to happen in Afghanistan, what will be our situation with the embassy?

General MCKENZIE. Sir, I believe it is our desire to retain an embassy presence in Afghanistan.

Senator INHOFE. You got to protect it, right?

General MCKENZIE. So we do, and of course.

Senator INHOFE. You got to secure it.

General MCKENZIE. Sir, we do. Of course, protection of an embassy is the responsibility of the host nation. Most of our embassies around the world have very little military presence there because the host nation lives up to their obligations. It is a matter of very much great concern to me, and I think everyone, whether or not the future Government of Afghanistan is going to be able to do that after we leave. That will be determined here over the next few weeks as we begin our drawdown and we evaluate the security platform that is there.

Senator INHOFE. Will you be able to make that determination as the drawdown is occurring? My concern is, if we get to the point where we do not have that help, we would be depending on another country to do what we always do on our own, and that is defend and secure the embassies. That concerns you?

General MCKENZIE. Ranking Member, it does concern me, but I would say if we have concerns about the physical security of the embassy, the United States will take whatever measures are necessary to ensure the safety of our diplomats. So we will do that based on the security situation as it exists on the ground in Kabul.

Senator INHOFE. I would hope that you would anticipate that if there are going to be problems or signs of problems as the drawdown continues, that you would be on top of that, and I am sure you will be. In AFRICOM, General Townsend, the Administration is conducting a global force posture review. Now, that actually started in the previous Administration, and I can remember at that time cautioning the then Secretary of Defense that we do not have a lot of assets there, and we do not have a lot of protection there, and that is something that has concerned me before, and the same concern is out there right now. We have less than, what, 6,000, I guess, personnel? We face the shortfalls and ISR capability. These things are there. What would you say, General Townsend, is your biggest resource gap that would impact your ability to do your job?

General TOWNSEND. Thanks, Ranking Member. As you pointed out, we underwent the blank slate review, or a COCOM review, in the previous Administration, and by the time we got to the end of that, AFRICOM was still largely intact. I think we removed about 365 troops from the continent. As you pointed out, there is just no fat to cut there, and we did lose some funding in the various programs. Again, I do not want to get ahead of my civilian leaders on the Global Posture Review, so I will defer discussing options about forces and posture.

But I would say that wherever we have forces in Africa, there are three things that we will need there. First would be the proper amount of personnel recovery and casualty evacuation of medical treatment to make sure our troops are properly protected. Second, as you mentioned, is ISR, and with the loss of the Overseas Contingency Operation (OCO) and the ISR Transfer Fund, that puts at risk one of our primary sources of ISR, which is contracted ISR in Africa. Then the third thing I would say would be funding for building partner capacity and exercises with our partners. We do everything in Africa through partners. There is no activity that

America conducts unilaterally in the lead for, so building partner capacity is how we help the Africans and our international partners the most. So I would say those are the three things we will need regardless of what our future posture might be.

Senator INHOFE. I agree wholeheartedly with that, and I am glad that you are coming out forcefully in making those statements. When you point out that we are in a continent, they are 3-and-a-half times the size of our country. I had not heard that before, and we have got to be aware of that. This is a problem. We need to have resources in there to do the job. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Inhofe. Senator Shaheen, please.

Senator SHAHEEN. Thank you, and thank you, General McKenzie and General Townsend, for your service and for being here this morning. I especially appreciate whoever at DOD heard us when we said please give us a map that shows not just Russia and Chinese activity, but also shows United States activity, and it is pretty dramatic. It does not take much to take a look at those pictures and see China's influence all in red in Africa and our influence, and that picture says it all. So I very much appreciate that and have used the map that we got from United States Southern Command (SOUTHCOM) to make the argument that we need more investment in Latin America in the Foreign Relations Committee. Can I just ask for whoever is listening, if there are acronyms on the maps, that you give us a key to tell us what those acronyms mean for those of us who are not dealing with them on a daily basis? I would appreciate it.

General McKenzie, I want to begin with you because in your testimony before this Committee last year, you indicated that there had been an increase in Iranian activity in Afghanistan, and that posed a potential risk to United States Forces. Obviously, the decision to withdraw American troops, which I have expressed concern about, has an impact not just on what happens with Afghan forces and the Afghan people, but it also creates a vacuum that allows regional actors, like Iran, and Pakistan, Russia, and China, to fill that vacuum. Can you talk about what you see happening after the U.S. withdraws and what the potential is for those regional actors to come in and influence what happens?

General MCKENZIE. Certainly. After we complete our withdrawal, I think the country that is probably going to be most affected is Pakistan because of their long contiguous border with Afghanistan, the fact that the Taliban, largely centered in eastern Afghanistan, nonetheless maintains some presents in Pakistan as well. So I think Pakistan is interested in stability in Afghanistan, and I think it is going to be very difficult for that stability to remain after we leave, so I think Pakistan will be very concerned by that. I would say, frankly, that it is a situation they have not been terribly helpful on over the last 20 years, so that is unfortunate for them that some of this is now going to come back home in a way that they perhaps did not anticipate.

As for Iran, you know, Iran does not wish us well, has always wanted to have the ability in Afghanistan to attack us or to have others attack us should they choose to do so. That capability remains, is as extant now as it was last year. Their interest in Af-

ghanistan is the same as Pakistan's. They want stability in that region. I think everyone is concerned that, should we leave, should a civil war ensue, there is the possibility of a mass refugee movement that could affect all of the nations around Afghanistan. So I think they are very concerned by that because they do not see a clear way forward after we reduce our presence.

Senator SHAHEEN. You mentioned ISIS camps in your opening remarks. One of the concerns, having visited Syria, that I have, given our withdrawal—precipitous withdrawal from Syria, has been the failure to address those camps from family and former ISIS members that continue to have thousands of people in them. Is there any international effort to address those camps and to try and resolve how the international community is going to deal with them before they become another threat?

General MCKENZIE. I wish I could tell you a better news story there, Senator, but I cannot. It is one of my very highest concerns. Al-Hol camp, which you are very familiar with, is probably the poster child for 62,000 people, principally women, principally young children—and they are at an immediate risk from disease, cholera or coronavirus. But the long-term threat is ISIS radicalization which goes on in that camp, and unless we find a way to pull these children out of that camp, get them back to the nations that they came from, find a way to reintegrate them into civil society, and de-radicalize them, we are giving ourselves a very significant military problem 10 years down the road.

I know that our diplomats and our people in United States Agency for International Development (USAID) are working on this very hard. Nations need to step up, claim their people, repatriate those that they can bring home. Unfortunately, there is not a lot of progress on this front. It is one of my very highest concerns in the region.

Senator SHAHEEN. We actually created a coordinator through the defense authorization bill—not last year, I think the year before—to try and address that. I am not aware that anybody has been appointed to that position yet, so hopefully the Administration will move on that. Before I am out of time, General Townsend, I wanted to ask you about what is happening in Ethiopia in the Tigray region, and to what extent the instability there has the potential to create instability in the surrounding countries, and how concerned you are about that.

General TOWNSEND. Ma'am, that probably takes longer than the 10 or 15 seconds I have to give the answer. Ethiopia is in the midst of several challenges, three or four significant challenges on multiple fronts. It definitely will affect security and stability in the region, and I can answer that more in another venue.

Senator SHAHEEN. Thank you very much. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Shaheen, and now let me recognize via Webex, Senator Fischer.

Senator FISCHER. Thank you, Mr. Chairman, and thank you, gentlemen, for being here today. General McKenzie, what is your understanding of the assistance that we will be providing to the Afghan security forces after we withdraw? Secretary Austin, he discussed some of this last week at the joint press conference at

NATO. He spoke about training, securing their borders, and saying we will continue to support them in those efforts, also about funding capabilities, to continue paying salaries for the Afghan security forces. So what types of assistance are you seeing that we are still going to be providing and be responsible for?

General MCKENZIE. Ma'am, let me just begin by saying we are going to go to zero solution in Afghanistan, so whatever we do, it will largely not be done by people on the ground in Afghanistan. We can still do some things from remote locations. We can work the administration of the Afghan security force funding, which is sort of the bedrock programmatic weapon or tool that we use to support the Afghan military and other things. We will not be able to do it as efficiently as we do now where we have people in the country that can really follow the money all the way to its destination, but we can still follow it into the country at least, and we will work tools to mentor from remote locations that will allow us to work with—work with the Afghans themselves.

Some of this will be contingent on how big the embassy is that remains, and that is still something that is going to be worked out over the next few weeks. So we could have a—we could have a security cooperation office in the embassy. We may not have a security cooperation office in the embassy. That will be ultimately a Department of State decision informed by our assessment of the security situation that is there. It will be far more difficult than the way we do business now. Again, it is certainly not impossible. We will not have the oversight that we have now just because we will not have the people on the ground to actually perform those functions.

Senator FISCHER. Now, as look at these force posture options over the horizon, I hope you will certainly keep this Committee informed about that as plans are finalized. So I would appreciate that from you.

General MCKENZIE. Yes, ma'am.

Senator FISCHER. For both of you, we talk a lot about ISR shortfalls, and I understand that demand always exceeds supply, but can you share with us what percentage of your ISR needs are being met? Also talk a little bit about the operational impact that this has.

General MCKENZIE. Sure. I will begin. The majority of my operational ISR requirements are being met, not all of them. They are being—and I will give you a little bit more in the closed session. You know, we use a variety of manned and unmanned resources to look at our problems, and we are most particularly concerned with ISR in areas where we have U.S. and coalition forces in combat. Of course, that is in Afghanistan and in Iraq and Syria, and occasionally in Yemen. So there, we very—we work very hard to make sure we have got the ISR needed to do those things. We take risks sometimes in the ISR that we apply to the Iran problem, simply because I place a higher priority on ensuring that Americans—where we have Americans on the ground, we want to make sure we have got the resources there that we need to take a look at in order to protect them.

Senator FISCHER. Thank you. General Townsend?

General TOWNSEND. Senator, the joint staff has a formula by which they validate our ISR requests. By that formula, we are resourced to about 30 percent, a little less than one-third of our requirement. If I take a hard look at that formula, I could probably get by with less than that. If I take that into account, our resourcing levels approach 40 or 80 percent. Every day in Africa, we have to make decisions about what we will do and what we will not do based on how much ISR we can apply to the day. We do not need a tremendous amount of gray tail or military ISR platforms. We need some of that to protect our troops, but we can do a lot of our work with contracted solutions, which are a good bargain for the taxpayer.

Senator FISCHER. But do you—I guess, do you both believe that having that presence of ISR used against hostile nations or their proxy forces, that that does act as a deterrent? General McKenzie, would you say that has happened with Iran?

General MCKENZIE. I can say unequivocally that the maneuver of ISR assets in the summer of 2019 deflected imminent Iranian attack planning.

Senator FISCHER. Thank you. General Townsend, do you have any instances of that?

General TOWNSEND. Yes, Senator. So we know that Al-Shabab looks over their shoulder every day at our—looking for our ISR, and so we know that they limit their activity because of the presence of our ISR.

Senator FISCHER. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator. Now let me recognize via Webex, Senator Gillibrand.

Senator GILLIBRAND. Thank you, Mr. Chairman. General McKenzie, I have several questions for you related to Israel. What is the status of Israel being moved to CENTCOM, and what do you see as the benefits for Israeli inclusion in CENTCOM? Also, Israel and United States European Command (EUCOM) coordinated very closely on ballistic missile defense, including Aegis support from the Mediterranean. How will you ensure continuity of ballistic missile defense with Israel, and will this continue through EUCOM or move to a different direction with CENTCOM?

General MCKENZIE. Senator, we are in a planning phase right now to move Israel into United States Central Command. We are on about a 6-month planning timeline for that. There are—as you have noted, a number of things have to happen in order to make sure that that move goes seamlessly, and I will address those here in just a moment. But we work closely with European Command and the joint staff based on guidance we have gotten from the Secretary to make sure that that move is—that move is proceed—that move proceeds very smoothly and nothing falls through the cracks, particularly those things related to the defense of Israel.

The principal benefit of Israel coming into the Central Command Area of Responsibility (AOR) is the fact that most of Israel's threats—all of Israel's threats really—emanate from the East, which is in the CENTCOM area of responsibility. Today, I talk a lot to the Israeli chief of defense. I talk a lot all throughout my command at all levels of the Israeli military about the threats that emanate against them because the threats to Israel have morphed

from being, at one time, a purely ballistic missile threat, now to a Unmanned Aircraft System (UAS) and a land attack cruise missile threat. So now the threat is far more diffuse and actually dangerous, so we need to make sure that we are coordinating fully on all those matters.

We work with European Command to make sure that we transition the defense of Israel to CENTCOM when we are ready to do it. That does involve questions of water space management in the eastern Mediterranean, questions of what ships are going to be available and when. I am in close contact with General Walters actually as we work through those problems, and we will present a plan to the Secretary a little bit later this year for an initial date when combatant command authority will shift for Israel.

The last point I would just like to make is, the other benefit of bringing Israel into the Central Command AOR is it allows further normalization of relations between Israel and various Arab states in the CENTCOM area of responsibility, and this just recognizes that by placing them all under one combatant command. We were not able to do that in the past, particularly because of strains between Egypt and Israel. We are now well past that. Egypt and Israel function very well together at a variety of levels, including joint operations against threats in the Sinai.

Senator GILLIBRAND. Thank you. General Townsend, in the last decade, China has made significant investments in Africa, and it has been in the form of infrastructure and military installations, as well as significant investment from private firms. I am concerned with perceptions of the United States presence when we are conducting major air operations with significant collateral damage while China builds roads and bridges. What is AFRICOM's strategy for breaking this dynamic? Is this a problem that has a military solution?

General TOWNSEND. Senator, you are right. China has been aggressively investing in the continent with infrastructure, bases, arm sales, training, et cetera. We do not have to compete with China head-to-head, dollar-for-dollar. We can target where our investments are best made. I would not characterize it the way you did about our strikes with significant collateral damage. We do not do very many strikes in Africa. They are limited to Al-Shabab areas in Somalia, and we have very low collateral damage when we do those strikes. I agree with your point, though. There is not a military solution to any of these challenges on the African continent.

Senator GILLIBRAND. Right.

General TOWNSEND. It is a whole-of-government approach that will be necessary to solve these challenges.

Senator GILLIBRAND. I was encouraged by your commitment to working with African Union security forces and other nations' militaries, and I do appreciate the fact that we can fight terrorism, but we have to actually stop the social problems at the source. In your opinion, how can we increase cooperation with the African standby force and the African Union Peace and Security Council? Just to note, in your written statement, you listed extreme poverty, more frequent and intense weather events, and vulnerable and marginalized populations as issues that are contributing to insta-

bility in the region and, as a result, terrorism. These obviously sound like political problems and potentially a vacuum that China will be happy to fill with their own investments. So what are your thoughts on this issue, and how do we confront China and make the territory less fertile for Violent Extremist Organizations (VEOs)?

General TOWNSEND. Regarding the—confronting China here, I think we can do that in a targeted way in certain selected countries, and that way we can make our investments count for more. You mentioned several partners—African partners. We work with all of those partners to advance what we are doing. The United States does not lead any activity. We work through African partners first and international partners second, and then you mentioned several political problems. I think our administration strategy is the right one: lead with diplomacy, follow with development, secure with defense.

Senator GILLIBRAND. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Gillibrand. Let me know recognize via Webex, Senator Rounds.

Senator ROUNDS. Thank you, Mr. Chairman. Gentlemen, thank you both for your service to our country. Let me begin with a question for General Townsend.

General, the last time that I had an opportunity to visit Djibouti, I noted that at that time, we had a chance to observe the operations that the Chinese were doing with regard to the creation of a naval base, or at least a port there at Djibouti. Can you share with us the current status of the Chinese operations in Djibouti right now with regard to their port and what they are capable of doing with it?

General TOWNSEND. Thank you, Senator. The Chinese base in Djibouti is named Doraleh Port, or Doraleh Base. What they have done in the last 2 years is completed a very large and capable naval pier that has joined their base. This pier has the capability to dock their largest ships to include the Chinese aircraft carrier as well as nuclear submarines. Now, they are finishing that pier now. They are applying the final coats of paint to this thing. I expect that we will see increased Chinese naval presence there. Their presence at Doraleh Base in the past has been largely to secure and sustain their small naval task force that operates in the Red Sea and the Gulf of Aden. I anticipate now with this pier being recently completed, they will increase their naval activity into Djibouti soon.

Senator ROUNDS. Thank you, General. General McKenzie, I would like to visit with you with regard to the difference between a conditions-based withdrawal and a withdrawal with a date certain, and I recognize that your role here is to follow the directions of the Commander-in-Chief. I respect that, and I know that the President has made the decision to move from a conditions-based withdrawal to a date-certain withdrawal. There is a reason why I think many of us had talked about, and I believe a number of the military officials in the past have discussed the validity of a conditions-based withdrawal, while at the same time recognizing that there is no real good answer to the Afghanistan questions.

Respecting the President's ability to make and having to make this decision, can you share with us a little bit about some of the concerns that you have expressed with regard to the ability of the existing Afghan national forces to be able to respond to aggression by the Taliban, and what the impacts could be in those areas that are not currently under Taliban control with regard to the stability in those villages, those communities, and the impact that could occur for women and children in those regions?

General MCKENZIE. Senator, thank you. First of all, the decision-making process was very inclusive. I had multiple opportunities to make my views known, and I appreciate the opportunity to have had those views known. I cannot share those views with you in this forum, but I would just tell you that the inclusion and the deliberate and methodical way that this decision was approached was heartening for me, at least. I would tell you that my concern about leaving with a date certain is that after we withdraw, and we have talked about we are going to go to zero means zero, that there will be no real United States enablers in Afghanistan. My concern is the ability of the Afghan military to hold the ground that they are on now without the support that they have been used to for many years, which we have weaned them off direct support—U.S. and coalition soldiers being present with them on the ground to a point where now it is intelligence, it is fire support. It is the enabling things that actually give them an edge over the Taliban. Now all that will be gone, so I am concerned about the ability of the Afghan military to hold on after we leave, the ability of the Afghan air force to fly, in particular, after we remove the support for those aircraft. All of those things are factors that will be worked out here in the next few months, and we will get an opportunity to see how the Afghans do.

Your last point on conditions for women and children, and women, in particular, and the strides—the great strides that have been made in education and human rights in Afghanistan, the levers that we have now will be reduced, but I believe there will still be levers that we can apply, and those levers will be principally diplomatic and economic because if the Taliban or whatever future hybrid government exists in Afghanistan wants to gain global recognition and receive some form of international support, they are going to have to take some actions that would tend to protect those groups. Again, those are things we just cannot know right now.

Senator ROUNDS. Thank you, General. I most certainly appreciate your responsible comments, and I understand that you did have the ability to give input. I just simply think that it is important for the American people to understand that the repercussions of this are not going to be pretty, and that we will see reports of atrocities in those areas as committed by the Taliban if these Afghan national forces are not able to hold their own without those United States supports that they have become very dependent on. Thank you.

Chairman REED. Thank you very much, Senator. Now, let me recognize Senator Blumenthal.

Senator BLUMENTHAL. Thanks, Mr. Chairman. Thank you both for your service and to the men and women under your command. I do not need to tell either of you that the definition of success in

Afghanistan has changed over the 20 years that we have been fighting wars in that part of the world. In October 2001, President Bush set the terms for victory in Afghanistan as bringing al Qaeda to justice and ensuring that they could no longer use Afghanistan as a base to launch terrorist attacks on the United States. Coming right to the point, General Townsend, public press reporting states that after a withdrawal from Afghanistan, it would be a 4-hour flight for an MQ–9 to be on station in Afghanistan to do a counterterrorism mission. My question is, how does that compare to the flight to be on station in Somalia, or Libya, or other places under your command where countering terrorism is a similar mission?

General TOWNSEND. Senator, we also have some pretty long legs to get our ISR on station, although I do not believe 4 hours. Our transit times are more in the realm of 1 to 2 hours one way. We spend 4 hours probably, on average, back and forth, but not as long as you just described.

Senator BLUMENTHAL. General McKenzie, would that length of time enable effective counterterrorism in Afghanistan using the kind of air resources that we have in General Townsend's command?

General MCKENZIE. Senator, right now in Afghanistan, we principally use MQ–9s and MQ–1s, and the newspaper story may have said 4 hours. If we get out of Afghanistan, most likely the transit time will be considerably longer than 4 hours to get in, and I can talk about this in a closed session in a little bit more detail. So I can, in fact, give the persistent overhead coverage that is required. It will simply require far more platforms operating at greater range in order to accomplish that same mission that you can do with fewer platforms because, as you know, the airplane has so long to fly. You are either going to use that flight time either getting to the objective or what you do on the objective. We want to maximize what you can do on the objective. It will be difficult.

Senator BLUMENTHAL. I would like to hear, and probably it should be in a closed setting with the chairman's and senator's support, what specifically by way of counterterrorism can be done, what the plans are to do it, because I think that is an essential feature of our withdrawal. You said "if," but it is right now planned for September 11th, and I would like to know what our preparations are.

General MCKENZIE. Sure, I will be happy to discuss that in closed session.

Senator BLUMENTHAL. Thank you. I think Senator Inhofe alluded to this topic, but, as you know, there have been various reports about attacks on American personnel, diplomats, members of the intelligence community, perhaps even military, some of it referred to as the Havana Syndrome, referring only to those public reports. If there is any truth to those reports about attacks on American personnel, don't you think the American people deserve to know about it?

General MCKENZIE. Sir, I do, and I track that very—and I can only speak, of course, to the U.S. Central Command area of responsibility, and I can give you a little bit more information in a closed session, but I have found no evidence of those attacks in U.S. Cen-

tral Command. But I can talk a little bit more about it, and I would like to do so in a closed session.

Senator BLUMENTHAL. I would like to hear about it in closed session, but I would also like for the American people to know about it because I think they need and deserve to know about it. General Townsend, do you have any comment?

General TOWNSEND. Senator, we have not seen that phenomenon in AFRICOM in any significant number; in fact, any number that I am aware of.

Senator BLUMENTHAL. Thank you. General McKenzie, what have you seen by way of the Iranian support for proxies and their attacks on United States personnel under your command, the malign influence of Iran and their support for those kinds of attacks on our personnel or our allies and partners?

General MCKENZIE. So I think, first of all, Iran is not seeking state-on-state conflict with the United States right now. I think they would like to see how the Biden Administration's approach on Joint Comprehensive Plan of Action (JCPOA) works out for them. At the same time, and this just reflects the contradiction inherent in the way the Iranians think about many of these problems, they want us out of places like Iraq, and they are prepared to take kinetic activity, which they believe they can disavow by their actors, their proxies, acting on the ground to conduct low-level attacks against us. Over last year, in 2020, the Iranians believed they had a political solution to eject us from Iraq. That no longer appears to be a viable way ahead for them, so we are seeing a return to a more kinetic approach, and that has been manifested here over the last few weeks as low-level attacks have begun to crop up in Iraq, attacks that the Iranians would disavow themselves from. We carefully look for attribution in these attacks, and national leadership will eventually make a decision on how to respond.

Senator BLUMENTHAL. Thank you. Thank you both. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Blumenthal. Now let me recognize Senator Ernst, please.

Senate ERNST. Thank you, Mr. Chair, and, gentlemen, thank you very much for your testimony today. I do want to take time to thank you, your senior enlisted members, and all of the men and women within your commands for their continued service to our Nation. I will move into my questions, but what we are doing today, we are obviously discussing the significant challenges that both of you have within your commands. Our national defense strategy is still targeted towards five very real threats—China, Russia, Iran, North Korea, and then, of course, violent extremist groups—and four of those five challenges operate in both of your AORs, and, of course, the way that we operate and resource your AORs is very different. But, General Townsend, I would like to start with you.

Within AFRICOM, we do have various pockets of activity, and we do engage our special operations forces in those areas. The Lake Chad Basin is a very volatile region, and there are a number of those violent extremist organizations there, such as ISIS, Boko Haram. They are operating within the region, and they are exploiting, of course, the economy, the terrain, and the vulnerable popu-

lation there. What is the assessment of the risk these various organizations pose to the U.S., and have we allocated the proper resources necessary to defeat their threats?

General TOWNSEND. Thanks, Senator. You specifically addressed the Lake Chad Basin, and there we see operations by Boko Haram and ISIS West Africa. A couple of years ago, those two organizations had joined in league with one another. They have split in the last year or two, again, apart. My assessment is that neither—although they caused tremendous problems there for the countries that all adjoin in the Lake Chad Basin, which is Niger, Nigeria, Chad, Cameroon—all come together right there—they caused tremendous problems for them. It is my assessment that neither Boko Haram nor ISIS–West Africa today pose a significant threat to United States interests. That is not true of other violent extremist organizations in Africa.

Senate ERNST. Mm-hmm. Thank you very much, General. How can we help those countries in that area, be it military or other resources available, through our Federal Government? There are a few of those countries that do have significant resources that could be exploited by China or Russia. What ways can we further support that region, not just military, but other types of supports?

General TOWNSEND. Well, just exactly what you said along the lines of not just military. So there—a whole-of-government approach in that region would help. We have that now to some degree. I think we can make that more robust. There is a partnership between our Department of State and Department of Defense to provide security assistance to those countries there. We do that on a bilateral basis directly with those countries. There is a Multinational Joint Task Force that operates in the Lake Chad Basin region. It would not be hard to increase some of our efforts there. I think what we see, particularly with Nigeria, is they are struggling with that particular threat in the Lake Chad Basin and northeast part of their country.

Senate ERNST. All right. Thank you, General. General McKenzie, it was my great honor just several days ago to spend some time in the company of some truly extraordinary women, and these women are Gold Star Wives, and many of them came from our Special Operations Forces. We had an Air Guard member as well as an Army Guard member, and part of the conversation obviously flowed towards the close down of Afghanistan, the withdrawal of troops, and, of course, what we would hope to see as the end to the Global War on Terror. I have concerns about it. I have concerns that we are conceding territory at a great loss of lives, and so if you could indulge me, sir, and address these extraordinary women and their families all across the United States, and just let them know your thoughts and how we can recognize the ultimate sacrifice that their husbands made, and to please let them know that those sacrifices were not in vain.

General MCKENZIE. Senator, thank you, and certainly the sacrifices have not been in vain, and particularly the family members of those people who have gone forward to defend this Nation and have died in so doing, are going to carry those memories with them for the rest of their lives, and there is nothing I can do to really make that better. But what I can tell them is I believe we went

to Afghanistan in a good cause, and I believe we have, in fact, prevented attacks on the United States from being generated from Afghanistan for over the last 20 years, and that was ultimately our base mission for being there.

The long-term view for the War on Terror is this: it is not going to be bloodless. The War on Terror is probably not going to end. What we actually seek is the creation of local security where the threats, as they arise, can be dealt with indigenously by those countries themselves without a significant U.S. presence there. We will see a test of that hypothesis in Afghanistan and in the months ahead. We also tested it in Iraq where it is moving towards success. We also tested in Syria and in other places. Nothing will ever compensate for the loss of a loved one, and I would not attempt with any words I can say here to try to do that.

Senate ERNST. God bless you. Thank you so much.

Chairman REED. Thank you, Senator Ernst. Senator Kaine, please.

Senator KAINE. Thank you, Mr. Chair and Ranking Member Inhofe, and thank you, Senator Ernst, for asking that question to the witnesses who are before us today. We appreciate your service. Just a comment. I think we have had a good discussion about the big issue that is, you know, dominating our attention right now—Afghanistan—and every concern that anyone I know that has expressed about it is a very legitimate one. There are a lot of concerns. I do support the President's decision, but believe it was a decision made with no particularly wonderful options out there on the table. I honor the 20 years of service, 10 years to find and kill Bin Laden, and then 10 years to train hundreds of thousands of Afghan security forces. General McKenzie, as you mentioned, there will be a test of that security apparatus to determine its efficiency to counter the threat that the Taliban poses, and we will all be paying attention in a significant way.

One thing I would like to just caution against is sometimes, particularly in a military hearing, we will talk about the state beginning on September 11th as a zero solution, and it is true that the President's announced intention is a zero solution with respect to military presence in Afghanistan, except for that necessary to protect our embassy and, if needed, for counterterrorism operations as they arise. But I think it is important for the American public to know that it is not a zero solution if you look at it from the whole-of-government standpoint, because I think it is very likely that the United States is going to continue to provide significant security assistance to Afghanistan. It is highly likely that we are going to provide significant assistance in the humanitarian, economic, trade, development, and diplomacy space.

So it is not a zero solution in terms of America's partnership with Afghanistan. I would imagine that when we get to a new status quo in terms of the relationship, the support that we provide for our partner, Afghanistan, will be significant and may be significantly greater than sort of the support we provide to other nations. That remains to be seen, and obviously the effect of that support is being tested, as General McKenzie mentioned.

General McKenzie, you mentioned something about Afghans' neighbors, and I wanted to just dig into that a little bit. You indi-

cated that while they have not all been helpful to the United States, not by a long shot, and they have not necessarily even done what we would hope they might do to assist in Afghanistan, they do help with stability in Afghanistan. They do not see instability there as furthering their interests, and just quickly, I was looking at who Afghanistan—the Afghan neighbors are. Afghanistan is bordered by six countries: Pakistan, Turkmenistan, Uzbekistan, Tajikistan, China, and Iran. Very different nations, those six, but can I just dig in a little bit with you, General McKenzie, on that? As different as these nations are from each other, and as different as they are in their relationships with the United States, would you say that they all, for their own reasons, would desire stability in Afghanistan and would feel threatened by instability in Afghanistan?

General MCKENZIE. Senator, I would agree with you completely. I think all, for their own reasons, and, as you noted, those reasons are very different, they all want stability in Afghanistan. The other thing some of them want, too, is they recognize the vast natural resources that are inherent in Afghanistan, and they seek access to that.

Senator KAINE. In terms of wanting stability, I would imagine that they want stability, again, for their own reasons, but some of the common reasons would be instability could lead to unacceptable refugee flows into neighboring nations if that is not managed, and instability could also lead to the possibility of terrorist or other attacks in their own nations if that is not managed correctly. Are those two of the reasons that they want stability, and are there others why they would want stability?

General MCKENZIE. Senator, I think those are the two principal reasons, the movement of refugees across national borders, and also the threat of exportation of ISIS or al Qaeda's ideology, you know, from inside Afghanistan. I think those are the two principal reasons.

Senator KAINE. In terms of those threats, the threat of refugee flows and the threat of terrorist attacks, in many ways, they have more of an existential connection to stability in Afghanistan than the United States does, just because of their proximity to Afghanistan. Is that not correct?

General MCKENZIE. Senator, I would agree.

Senator KAINE. All right. Thank you. Mr. Chair, I do not have other questions.

Chairman REED. Thank you, Senator Kaine. Let me now recognize via Webex, Senator Tillis.

Senator TILLIS. Thank you, Mr. Chairman. Thank you for holding the hearing, and, gentlemen, thank you for being here and for your years of service. General Townsend, I want to talk a little bit about China. In your opening comments, you talked about China's move, I think, in Djibouti as a power projection platform. We know that there is even talk about an Atlantic Coast naval base. How does this play out over the next several years if they continue at their current pace, and what are the real threats to our own national security as a result?

General TOWNSEND. Thanks, Senator Tillis. So we know that the Chinese desire a network of bases around the globe. How that

plays out in Africa is, first, with their base at Doraleh in Djibouti. They have been working on a number of options to get a base elsewhere in Africa, Tanzania—primarily on the east coast—the Indian Ocean, and then they have placed a number of bets down along the Atlantic coast. My concern is the greatest along the Atlantic coast of Africa. This is probably—this is the most significant threat, I think, from China would be to gain a militarily useful naval facility on the Atlantic coast of Africa, and by "militarily useful," I mean something more than a place that they can make port calls and get gas and groceries. I am talking about a port where they can rearm with munitions and repair naval vessels. They are working aggressively to get that, but we have not seen any of that come to fruition yet, and it is my number one global power competition concern.

Senator TILLIS. Thank you, General Townsend. General McKenzie, with the withdrawal of troops in Afghanistan, we have received, you know, various estimates of how that is going to play out over the next year or so. I, for one, think that we are going to run into—that Afghanistan is going to run into serious problems after we completely withdraw our troops, but I am primarily concerned with force protection as we withdraw from the forward-operating bases and, ultimately, Kabul. What are we doing? Are we just going exploit the resources we have on the ground for force protection? Are we going to surge a bit as we withdraw? Can you give me some sense and some confidence that we are going to be able to do this with the full expectation that the Taliban may take some shots at us on our way out the door?

General MCKENZIE. Senator, first of all, we are prepared if the Taliban want to take shots at us, today, or after 1 May, or at any point during the withdrawal. The plan that we have designed and that General Miller will begin execution of is designed to come out with or without pressure from the Taliban, and, yes, we will bring additional resources in in order to protect the force as it comes out. That is normal in any kind of disengagement operation. I do not want to go into the details of those operations right now, but we will bring—we will have additional capabilities, and I am confident that we will be able and our coalition partners will be able, to extract ourselves. We look every day, every hour at force protection in Afghanistan. It has the complete, undivided attention of General Miller and myself.

Senator TILLIS. Well, I hope that any malign activities on the part of the Taliban are met, and that you have the authority to exact a cost for any of those. Hopefully there will not be any, but I am afraid that we will probably see some. General McKenzie, I also wanted to talk about the Abraham Accords. Do you think the other countries that have come to the Accords already, that it has been a positive thing, and what other additional cooperation or participants in the Accords do you think would be helpful as a check against Iran?

General MCKENZIE. Sir, I think the normalization of relationships between Israel and her Arab neighbors is a profound step forward. It represents really a new era in the Middle East, and I think that is one of the things that Israel coming into United States Central Command as part of a unified command plan shift will also help. So I think, you know, we have got to be patient. It

will take time for this to happen, but I would look over time for further nations to join in normalization of relations with Israel, and I think that is a net positive thing for the region.

Senator TILLIS. The last question is, with the missile attack or rocket attack out of Syria against Israel just this week, is that potentially a part of a trend, or do you think that maybe it was just a one-off activity?

General MCKENZIE. I think it reflects actually incompetence in Syrian air defense where they were responding to Israeli strikes on targets in Syria. They fired their missiles. The missiles went ballistic, literally, and followed the parabolic trajectory into Israel where they were intercepted. I do not believe it was an intentional attack, but just rather lack of capability on the part of the Syrian air defenders.

Senator TILLIS. Okay. Thank you both. Thank you both, gentlemen. Thank you for your service and your leadership. Thank you, Mr. Chair.

Chairman REED. Thank you, Senator Tillis. Now let me recognize Senator King via Webex.

Senator KING. Thank you, Mr. Chairman. There has been a lot of discussion today about the September 11th date and the calendar-based withdrawal. I think it is important to recall that the prior Administration initiated a calendar-based leaving—withdrawal from Afghanistan, and, in fact, that calendar date is 1 week from tomorrow. So the current Administration was, in a sense, boxed in by those negotiations with the Taliban that took place last year, and which, by the way, excluded the Afghan Government. General McKenzie, you used a term earlier in your testimony, "if a civil war ensues." Is there not a civil war going on right at this very moment? There is no doubt that a civil war is going on now and will continue. Is there?

General MCKENZIE. Sorry. I am probably not the best person to give you an answer to this. I would defer to the diplomats. But we have a constituted-elected government in place in Afghanistan, and so that we have a legal authority in place. So I am not sure that I would refer to what is going on right now as a civil war. Others might take a different view of that, but I am not certain that I would refer to it in that way.

Senator KING. It would not—you do not think the Taliban is a viable insurgency that is fighting against the government and the government's reach into the provinces?

General MCKENZIE. I think the Taliban certainly are militarily very capable. I do not know how much of the actual Afghan population they represent. Polling data would tell you it is a very low percent if you subjected it to an honest election, which I know would be very difficult to accomplish in Afghanistan. But I would not confuse an insurgency, however capable and lethal, with a civil war.

Senator KING. Well, I will turn the question around. We have been there 20 years. We have spent over $1 trillion, lost lives, tens of thousands of injuries, incredible support to the Afghan Government. Why has the Afghan Government not been able to take hold? My understanding is, General, that the Taliban controls more land today than they did last year, and more last year than they did the

year before. They are, in fact, winning. Why can the Afghan Government not defend itself successfully?

General MCKENZIE. Sir, our principal objective in Afghanistan has been, and will remain, to prevent al Qaeda and ISIS from developing attacks against our Homeland and those are of our allies.

Senator KING. No, I understand that, General. That is not my question. My question is, in your military judgment, why has the Afghan Government not, with all the support that it has had from us, been more successful in beating back the Taliban, when, in fact, over the last dozen years or so, the Taliban has been making steady gains?

General MCKENZIE. I believe that right now, a rough stasis exists between the Taliban and the Government of Afghanistan forces. The Taliban has access to offshore havens where they are able to reconstitute where the Government of Afghanistan cannot reach, and it is always very difficult in a counterinsurgency to fight when your opponent has the ability to do those things.

Senator KING. Well, I understand that, but it just seems like with all the advantages of the Afghan Government, I am just puzzled as to why they have not—and you testified that you thought they had the support of the majority of the people—why they have not been able to be more successful. General Townsend, we have talked a lot about the Chinese activity in Africa. You talked about the purpose appears to be both economic and military. My question is, do you discern any backlash in these African countries where the Chinese have made these big loans and big investments and now the bills are coming due? Are the Africans having any second thoughts about their engagement with the Chinese?

General TOWNSEND. Thank you, Senator. Actually, we do see some backlash. You know, you have heard of the famous debt trap diplomacy that the Chinese have used. That has actually worked against their efforts in a lot of African countries. Our embassies have a very successful program where we now will review any contracts. We have a standing offer to review any contracts that these countries are going to undertake with China to point out the inconsistencies, the potential pitfalls, and the differences often we find between the host nation language translation and the Chinese translation. I think this is a great effort by our Department of State to help these countries make informed decisions on their own.

We see backlash, and we see it in the military sphere. Their equipment frequently breaks within a year or two. It is sitting rusting at the—on the side of the airfield or the port, and their training has been described to me by one African leader as not much more useful than a Hollywood demonstration. So we are starting to see some pushback by African leaders on the Chinese.

Senator KING. Well, I think one way to look at it, and I have talked to leaders throughout Asia, is that we have allies; China has customers. I think to the extent we can maintain those relationships with those African countries in the long run, I think they are going to prefer our model and our air support. Thank you very much, gentlemen, for your service. Thank you, Mr. Chairman. I yield back.

Chairman REED. Thank you, Senator King. Senator Scott, please.

Senator SCOTT. Thank you, Chairman. Thank both of you for your service and all the men and women under your command. Just to follow up with General Townsend with what Senator King was saying. What are you hearing from these leaders in these African countries about how they are going to deal with the debt that the Chinese have done or their relationship? Is there much opposition to what China is doing right now?

General TOWNSEND. I had an African leader tell me a drowning man will reach for any hand, and so I think they are faced with very difficult choices, many of these countries. They have got extreme poverty. They have climate challenges, food shortages. They want to advance their country for their people. Many of them have challenges with violent extremist organizations, and they need to secure their country, so they will reach out to any offer. Frequently those offers are fastest from China and Russia. We are slower to deliver, in their estimation, and it is true, and we are more deliberate in that way, and we have more strings attached than the Chinese and the Russians. You know, our strings are related to good behavior and things like that, democratic values, and the Chinese and the Russians attach no such strings other than loans—loan shark type of lending.

So they reach for whatever assistance they can get. They constantly tell us we would prefer you to be our partner, and many of them do that when they have the ability to do that. But they also will take help from any source, and they will take help from us and help from the Chinese and the Russians all at the same time, and they will reassure us they can manage those relationships, and we try to help them with that.

Senator SCOTT. So take the Chinese. Are they going to be able to enforce the deals they have entered into in these countries?

General TOWNSEND. That is a great question, Senator, and I do not know the answer to that. Probably best for the Department of State.

Senator SCOTT. Okay. General Townsend, you know, Israel—it seems like Israel's reputation and presence in Africa is growing, and with the Abraham Accord, you would think it would be a positive. So are you seeing Israel's involvement in Africa growing at all?

General TOWNSEND. We do see Israel. Israel has always been involved in parts of Africa, mostly the northeast and along the Red Sea. We are seeing Israel reach out across Africa in a fairly positive way in most cases, and they are doing some arms sales there. Quite frankly, I would rather see our African partners buy Israeli drones than Chinese drones.

Senator SCOTT. Thank you. General McKenzie, how concerned are you about the relationship that Iran is building with China?

General MCKENZIE. I am very concerned about it. It is too soon to tell, though, if this latest agreement is going to mount into something or nothing at all. I think Iran is always seeking opportunities to buy weapons, you know, and so I think it is interesting, but I am not yet prepared to pass a judgment on it.

Senator SCOTT. Are you seeing China's involvement grow—continuing to grow militarily all across the area you are responsible for?

General MCKENZIE. In Central Command, China's involvement engagement is principally economic with the debt trap diplomacy that General Townsend discussed in Africa. We see the same thing across our region. You know, we should not forget that China actually imports a significant fraction of their hydrocarbons from the region, and through the Strait of Hormuz, and from the Arabian Gulf, so they are going to be very interested in the region. So I think right now what we are seeing is the leading edge of a long-term Chinese plan to firmly establish themselves in the region.

Senator SCOTT. Thank you. Thank you, Chairman.

Chairman REED. Thank you, Senator Scott. Now let me recognize via Webex, Senator Warren.

Senator WARREN. Thank you, Mr. Chairman, and thank you, General McKenzie and General Townsend, for being here. So, General McKenzie, President Biden recently announced his plans to withdraw all United States Forces from Afghanistan no later than September 11th, 2021. That is going to mark our longest war ever, so I just want to review what has happened just over the past decade and where we stand right now. General McKenzie, is it true that the Taliban has more members today than it did 10 years ago?

General MCKENZIE. The Taliban has 50,000 or so members today. I would have to come back to you on where that stands compared to 10 years ago, Senator.

[The information referred to follows:]

Currently, the estimated strength of the Taliban is 60,000 to 80,000 full-time fighters. In 2011, the number of Taliban fighters was estimated at 20,000 to 25,000. Taliban strength has continued to increase from as low as 20,000 in 2011 to 60,000 in 2018, to as high as 85,000 as of March 2021.

Senator WARREN. Well, actually, I think the number could be as high as 85,000, according to the special inspector general for Afghanistan reconstruction, and that is almost triple what it was in 2011. You might want to go back and look at those numbers. Does the Taliban control more of Afghanistan than it did 10 years ago?

General MCKENZIE. Yes, it does, Senator.

Senator WARREN. Yes, and does Pakistan or elements of the Pakistani Government still provide support and sanctuary to the Taliban?

General MCKENZIE. We believe that elements of the Taliban are in Pakistan. Yes, Senator, we do.

Senator WARREN. Is corruption in the Afghan Government still endemic?

General MCKENZIE. The Afghan Government has corruption, significant corruption.

Senator WARREN. Yes, and after all this time and all this work to prop up and support the Afghan Government, is it fair to say that Afghans still have little trust in their government and elections just as they did 10 years ago?

General MCKENZIE. Senator, I would defer to the Department of State for a better commentary on that.

Senator WARREN. All right. I think if you check their commentary, they will say yes. The situation in Afghanistan has not improved in the last 10 years, even with our troops present, and it is clear there is little for us to be gained by a continued United States presence there. I strongly support President Biden's decision

to withdraw U.S. troops. We should have learned by now that a conditions-based withdrawal is just a recipe for staying in Afghanistan forever. Defense officials have come before this committee year after year to proclaim that the United States has turned the corner in Afghanistan, but all I see is a vicious cycle that damages our Nation's reputation abroad and keeps our troops in harm's way, while producing little tangible benefit for our security.

Thank you very much, Mr. Chairman. I yield the remainder of my time.

Chairman REED. Thank you very much, Senator Warren. Now let me recognize Senator Sullivan.

Senator SULLIVAN. Thank you, Mr. Chairman. Gentlemen, thank you for your service. General McKenzie, I appreciate our discussion yesterday. Let me start with a big kind of picture issue. You are in the Middle East, a lot of energy there. Does it help or hurt the United States of America from a national security and foreign policy perspective that we are now the world's energy superpower, producing more natural gas than Russia, more oil than Saudi Arabia? Does that help our national security posture in the Middle East and other places in the world?

General MCKENZIE. I would say—I would think that it helps globally. It certainly helps in the CENTCOM region.

Senator SULLIVAN. So do you think it makes sense from a perspective to just unilaterally start reducing the production of American energy? It kills jobs, but I am talking about from the national security perspective, to enable Saudi Arabia and Russia to be bigger energy producers than us. Does that makes sense, from your perspective, national security, your personal opinion?

General MCKENZIE. Sir, I would—first, I would defer to Commerce for a more informed opinion.

Senator SULLIVAN. I am asking as a——

General MCKENZIE.——I would say that it is not helpful to the United States.

Senator SULLIVAN. Thank you. You know, General, this is a very difficult decision, controversial decision. Certainly I wish the President would not have picked September 11th as some kind of date to celebrate. It is not a good date in American history. I think the Taliban is going to have a great propaganda victory by saying 20 years ago there was a victory, now there is a victory. I do not believe that it is a victory, but I hope in the future that the President, Secretary of Defense, even you do not use September 11th as some kind of date we are celebrating here for 2021 on the withdrawal of troops. You do not need to comment on that. I just think it is baffling that somehow somebody in the White House thought that was a good day to choose.

One thing that we are hearing, many of our bravest men and women fought. Many died, sacrificed. You know, you start to hear this mantra that, well, they—if we are pulling out, the Taliban takeover, which is a distinct possibility, that these sacrifices, particularly those who died, died in vain. You know, I had the honor of serving as a staff officer to General Abizaid for 1-and-a-half years when he was CENTCOM commander many years ago. He said something once that really struck me. He said, no American who has ever fought for freedom or the defense of the national se-

curity of the United States has ever died in vain. What would you say to the men and women who fought in Afghanistan, wounded families who lost loved ones, about their sacrifice, even though we are leaving?

General MCKENZIE. Senator, first of all, there is really nothing I can say to replace the empty chair at the table, the loss of a loved one, and I am very much humbled by recognizing that. I cannot improve on what General Abizaid said. In many ways, you know, to fight for freedom is not to give something up in vain. I think it is—but I think it is a very—it is still very hard on those people. As you know, I have been to Afghanistan multiple times, as has General Townsend seated beside me. My son has been to Afghanistan twice, so I am well aware of the burden that has been placed on families of this Nation to support our fight there.

Senator SULLIVAN. I just want to make sure our message to these families, to the men and women who served, sacrificed, some gave their lives, that it is not going to be your sacrifice did not mean anything. I would agree with General Abizaid. I hope that can be the statement from our military leaders. No American who has ever fought for freedom in the security of this Nation has died in vain, regardless of what happens in Afghanistan in the next 2 to 3 years. Would you agree with that?

General MCKENZIE. Senator, I would, certainly.

Senator SULLIVAN. Would you agree with that, General?

General TOWNSEND. Senator, I would. Absolutely.

Senator SULLIVAN. Let me ask one final question. General, you are a Marine. You know honor, courage, and commitment is a cornerstone of our ethos. Semper Fidelis. Do you believe nations have honor?

General MCKENZIE. I do believe nations have honor.

Senator SULLIVAN. So one thing that I worry about, given this decision, is that a lot of people who worked with our military, their lives are going to be at risk. The women who are now parliamentarian, their lives are going to be at risk if the Taliban takes over, which I think is a distinct possibility. I think we should be doing much more and planning much more to try to protect those lives, maybe get them out of Afghanistan if needed. Would you agree with that and if there is a plan to do that? Well, what is the plan to do that right now, and if there is not a plan, would you be able to execute a plan if we were able to keep our word to people who sacrificed and worked with us, who, now their lives are clearly going to be at risk, to help them? Would that not help the honor of America despite leaving?

General MCKENZIE. Senator, I know the Department of State is looking at a variety of venues, the Special Immigrant Visa Program, among others, you know, to potentially get people out. We have the capability to do that if so directed.

Senator SULLIVAN. I certainly hope we look at doing that in a big way. I think the idea of a year from now or a year-and-a-half from now if the Taliban takes over, which I think is a distinct possibility, and you have people who worked with our troops who are lined up and shot or killed because they worked with Americans, I think that would be a stain on our honor as a Nation, and I hope that we are making plans to avoid that. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator. Now let me recognize Senator Rosen via Webex.

Senator ROSEN. Thank you, Chairman Reed, Ranking Member Inhofe for holding this hearing, of course, and I would like to thank Generals Townsend and McKenzie for testifying today, and, of course, for their service to our country. I would like to speak a little bit about maintaining Israel's Qualitative Military Edge (QME) because for decades, maintaining Israel's qualitative military edge has been a bipartisan American foreign policy priority. It has been codified in law since 2008.

In recent years, the combination of Iran acquiring advanced Russian and Chinese systems, transfers of arms to terrorist groups, and an escalating weapons race in the region undermine Israel's QME, and they pose a significant conventional threat to the United States personnel. Just last night, a Syrian surface-to-air missile exploded in Israel, demonstrating the danger of advanced missiles proliferating through the region. So, General McKenzie, what is your assessment of Israel's current QME, and what must be done to maintain it? Do you view the escalating arms race in the region as having a negative impact on Israel's QME?

General MCKENZIE. Senator, you know, I am newly energized to study the Israeli question because of the movement of Israel into the Central Command under the recent Unified Command (UCP) decision, although I have looked at it for several years at United States Central Command. I am confident that we will be able to preserve Israel's QME going forward, even considering arms sales to various countries across the region. We should also reflect that the arm sales to those countries across the region at least partially reflects the increasing normalization of ties between Israel and those nations. Nonetheless, I am absolutely confident that we will be able to retain Israel's military advantage.

Senator ROSEN. Thank you. I look forward to revisiting that with you as you move forward. I would like to move next to the MQ–9 production because the MQ–9 is remotely piloted aircraft. It plays a critical role in supporting our current intelligence surveillance and reconnaissance requirements. A key part of the MQ–9's architecture is the mission at Nevada's Creech Air Force Base. As force drawdowns in CENTCOM's area of responsibility have reduced human intelligence availability, signals intelligence capabilities become even more important. Despite this, the prior Administration tried to cut MQ–9 production. So, again, General McKenzie, last year you included additional MQ–9 funding at the top of CENTCOM's unfunded priorities. So how would additional MQ–9 aircraft support your ISR mission, and what would be the impacts or the gaps in your ISR capabilities if that production were to be suspended without a follow-up plan?

General MCKENZIE. Senator, the MQ–9, MQ–1, and various other platforms are critical platforms for us in Central Command, particularly for use in the VEO fight. They give us the persistent overhead coverage that we need to go through the find, fix, and finish part of the equation. So we continue to use them, particularly in Afghanistan, but also in Iraq and Syria, and we have also found the MQ–9 to be valuable in use against Iran. In the summer of 2019, the manipulation of ISR assets in and around the Strait of

Hormuz directly deflected Iranian attack planning, so it is useful in a variety of venues for us.

Senator, I also recognize there is a global demand for these resources. Other combatant commands need them. My partner here, General Townsend, needs them in Africa as well. It remains an invaluable platform for us. I also recognize the platform is not viable in a high-end fight, and there are parts of CENTCOM that could become a high-end fight. There are parts of CENTCOM that are not a high-end fight. The platform is going to remain vital to us as we go forward, particularly as we pull out of Afghanistan, and our ability to maintain persistent overhead coverage will maybe possibly require additional MQ–9s in order—because of the range of—range from the base to the place where we will actually be looking. We may even need more of them in Central Command dedicated to that particular task.

Senator ROSEN. Well, thank you. I appreciate that, and glad to do our part in signals and reconnaissance intelligence, and the MQ–9s certainly helps us meet those goals. Thank you. I notice my time has just about expired. Thank you, Mr. Chairman.

Chairman REED. Well, thank you very much, Senator Rosen, and there are several members that are endeavoring to get here, and in order to allow them a fair opportunity, let me ask an additional question or two, and Senator Inhofe joins us. In fact, this is perfect timing because I can now introduce and recognize Senator Kelly. Are you prepared, Senator?

Senator KELLY. I am always ready.

Chairman REED. Always ready.

Senator KELLY. Well, thank you, Mr. Chairman, and, General McKenzie, General Townsend, thank you for your testimony today. So we have seen a range of Gray Zone engagement activities by near peer competitors throughout Africa and the Middle East, from China's pursuit of strategic partnerships with the Iranians and attempts to use infrastructure loans of medical supplies to gain favor on the African continent, to Russia's efforts to establish a foothold in critical mineral extraction and a presence on NATO's southern edge. The national defense strategy speaks of the need to expand the competitive space. With that in mind, I would like to get both of your thoughts on how the U.S. should be engaging in this environment to build relationships in each of these areas of responsibility with an eye towards countering the opportunistic influence-seeking behaviors by our competitors and discouraging any further escalation. General Townsend?

General TOWNSEND. Thanks, Senator. So you have correctly pointed out that Russia and China are competing deliberately and hard in Africa with the United States. I believe that they are determined to win. China is determined to win that competition. I am a little less concerned about Russia's competition, although it is not helpful. I think they are exploitative. They are self-interested. I think in many ways the Russians can be their own worst enemies. I think they are less of a longer-term concern to me than China is. China is a concern today and longer term. They are a learning organization. They are spending a lot of money in Africa. We do not have to outspend them. What we have to do is figure out where we

need to out-compete them and how to do that, and how to do that is a whole-of-government solution.

In my view, the first thing I am concerned about with China, number one, is an Atlantic Coast naval base. Number two, it is their activities in North Africa, and I can discuss that more in a closed session. My third concern would be the influence of Russia in Libya. As the Libyan national government—there is a sort of forming up now. Maybe there is a path forward there that is better. My fourth concern would be a Libyan naval—or a Russian naval base in Sudan on the Red Sea. So those are my top four global power competition concerns with those competitors, and it is a whole-of-government approach I think that will get us there. Most African partners want to partner with us.

Senator KELLY. When you are thinking about China's desire to have an Atlantic Coast naval base, where do you think the most likely place is that they are exploring right now?

General TOWNSEND. Senator, let me say this. They have placed bets from Mauritania in the north to Namibia in the south, and many countries in between. I would really rather dig into those details in closed session.

Senator KELLY. Okay. Thank you. General McKenzie?

General MCKENZIE. Senator, when we talk about competition against Russia and China in the gray space, clearly we need to think globally, not just in the western Pacific and not just in Europe. The principal tools that we use in Central Command range from exercises with our partners. Everybody wants to exercise with the United States, so we work those very hard with all these partners. The other is International Military Education and Training (IMET), bringing their officers and Non-Commissioned Officers (NCOs) to the United States for educational opportunities, extremely low-cost, extremely high payoff. Everybody wants to go to a U.S. school if they can have—a military school if they have—if they can have the opportunity to do that.

Additionally, security cooperation. As Steve noted, everybody wants our weapons. They would prefer to buy from us. They accept the restrictions that we will place on those weapons, but we have a variety of tools that we can employ, and that is just in the military domain. On the whole-of-government side, I would just call out, too, the economic aid that we can offer and the work of USAID. All of those working in concert with us give us significant advantages that we can apply against Russia and China, particularly in the Central Command AOR.

Senator KELLY. If we were able to expand those educational opportunities for foreign, often, officers, but just military personnel, is the demand—I mean, how significant is the demand right now?

General MCKENZIE. The demand is—the demand far outpaces supply. Far outpaces supply.

Senator KELLY. So we could double the——

General MCKENZIE. You could double, triple. You could quadruple. You could do a lot of things. The problem really is on our end. I mean, our institutions are good because they are scoped in size, and we recognize that, but nonetheless, there is enormous demand for these.

Senator KELLY. Thank you. I yield back.

Chairman REED. Thank you, Senator Kelly. Senator Tuberville, please.

Senator TUBERVILLE. Well, thank you very much. Very quickly, thanks for being here today. General McKenzie, what is the most important thing we can do to prevent a resurgence of ISIS in Syria and Iraq, and are we doing enough?

General MCKENZIE. I think we are on track to do that. I think the Iraqis are a lot better at fighting ISIS. We have pulled back from accompanying them in the fight to high-level advising. They can generally master the battlefield and protect their own country, so I think we are in a good place. I think we are in a good place in Iraq. In Syria, we work with our Syrian Democratic Forces (SDF) partners to continue the fight against ISIS remnants. They do not hold any ground. You know, there are small, isolated groups of them that operate up and down the Euphrates River, and we go after them pretty hard. Because of that, they are unable to generate effective attack plans against the United States or our allies.

Senator TUBERVILLE. General Townsend, how will China's growing influence in the region disrupt the United States' abilities to impact long-term strategic goals?

General TOWNSEND. Senator, I think our number one strategic goal for Africa is to ensure that the United States has the access and the strategic influence that we need in the future. That is, I think, the number one concern I have for China's activity in Africa is that they will try to maneuver us or box us out of access and influence. I would say that we have an edge still. As much money as they have invested and as many activities that they are doing, we still have an edge in access and influence.

An example I use is our rescue of an American citizen that was held hostage in Nigeria just last October. In an hour's notice, we asked seven countries for access to their country for our armed forces to enter their country and do some military activity. In many of these countries, this was done over the phone with literally hours to give us an answer. All seven said yes, and that is an example of the access and influence the United States has today, and we need to work to ensure we have that access and influence in the future, and not all seven of those countries are what we would consider strong and close partners, but they all said yes to that request.

Senator TUBERVILLE. Excellent. Thank you. General McKenzie, are there effective measures being taken today by CENTCOM to address the individual displaced persons crisis along the Syrian and Iraqi border? If so, how?

General MCKENZIE. Senator, I remain very concerned about displaced persons in northeast Syria. It is not a military problem. It is really a whole-of-government, and more than that, it is actually an international problem. We have trained the people that were in those camps—that is our responsibility—and we prevent external actors from getting in there and causing harm. Nonetheless, those camps are incubators for radical ideology. We need to find a way to return, particularly the children, but also the other members, back to the countries that they came from, and that requires an international effort, and I know the Department of State is working very hard to make that—to make that happen. It is a tough—it is

an uphill sled, though, trying to make—trying to achieve that. This is one of my most significant concerns, sir.

Senator TUBERVILLE. Thank you. General Townsend, as we build relationships with African nations, such as Morocco and Algeria, how does this strengthen our national security?

General TOWNSEND. Both of those countries sit in a geostrategically important part of Africa. They both have—Morocco directly watches over the Strait of Gibraltar, and Algeria is close enough to influence the Strait of Gibraltar in the western Med. So from a geostrategic standpoint, we absolutely need good working relations with those two countries. Morocco is a very strong partner of the United States, probably our number one African partner as far as relationships go. They take great pride in their military being equipped primarily with United States equipment and operating at a standard that is equivalent to a NATO standard, so they are very strong partner. Algeria has been—has had close ties with Russia for decades. However, they have recently been expressing a desire to increase their ties with the United States, and we do have a good working relationship with Algeria on issues of mutual concern.

Senator TUBERVILLE. Do we sell Morocco a lot of arms and equipment?

General TOWNSEND. I am sorry?

Senator TUBERVILLE. Do we sell Morocco a lot of arms and equipment?

General TOWNSEND. We do, and unlike a lot of African partners, they purchase it all with their own money.

Senator TUBERVILLE. Excellent. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Tuberville, and now I would like to recognize via Webex, Senator Hawley, please.

[No response.]

Chairman REED. I know Senator Hawley is trying very quickly to get either to Webex——

Senator HAWLEY. There we go. Can you hear me now, Mr. Chairman?

Chairman REED. I can, Senator. Please proceed.

Senator HAWLEY. Okay. Thank you. Thank you so much. Sorry. I could not hear you there. Thank you, gentlemen, for being here, and thank you, Mr. Chairman, for being patient with me.

General McKenzie, let me start with you, if I could. Secretary Austin said recently that the United States will be able to maintain counterterrorism capabilities in the region sufficient to ensure Afghanistan cannot become a safe haven for terrorists who threaten our security. Again, that was Secretary Austin. Can you just give me a sense, do you agree with the Secretary's assessment that we can achieve our counterterrorism objectives in Afghanistan even once we complete the drawdown that President Biden has directed?

General MCKENZIE. Senator, I do agree with that assessment. You know, we will rely on our defense in depth. The changes that have been made to security here in the United States make our Homeland a much harder target than it was in 2001. Additionally, the re-basing that we will do across the theater as we pull out of Afghanistan will give us the capability to go back in as necessary to strike targets when they need to be struck. I do not want to

make it sound too easy. It is going to be extremely difficult to do that. It is certainly possible to do that, and we will have the forces that will allow us to accomplish those tasks.

Senator HAWLEY. Thank you for that answer. I am glad to hear that. What are some of the options, can you give us a sense, that CENTCOM is evaluating for finding and neutralizing targets in Afghanistan once we withdraw our forces?

General MCKENZIE. Sure. I would prefer to cover it in detail perhaps in the closed session.

Senator HAWLEY. Sure.

General MCKENZIE. But just very broadly, I would tell you that you always need a combination of—you want—the formula is you have got to—you got to find them, you got to fix the target, then you have to finish the target. So we tend to think in those terms when we talk about the resources that we will need. What you will need is the ability to bring persistent overhead coverage in, probably from extended ranges, to still loiter and take a look at areas that you want to further examine. The reason you are going to need persistent coverage is, if you plan to strike something, we are going to strike it in full compliance with the law of armed conflict: low collateral damage and the American way of war. So we are going to make sure if we go after something, it is really what we want to hit, and we are not going to kill innocent people should that be necessary.

So we will do all that from extremely long range and it will be a challenge, but we do have the capability to do it. We have a number of ways to get to a fixed solution, ranging from a precision strike at very long range to on-the-ground options should those prove necessary. I would really prefer to talk a little bit more about those in a closed session, sir.

Senator HAWLEY. Absolutely. Give me a sense, General, if CENTCOM has done a similar analysis to identify ways that we can achieve our counterterrorism objectives in Iraq, should we withdraw our forces there.

General MCKENZIE. The logic is the same. We would certainly be able to do that, and the logic would be the same.

Senator HAWLEY. Would you be willing in the appropriate setting to share your findings with the Committee in terms of the analysis you have done about how we might achieve that in Iraq?

General MCKENZIE. Certainly. Of course, right now we do not anticipate withdrawing from Iraq. In fact, we believe, as a result of the strategic dialogue that was just completed in the last 2 weeks, we will maintain a footprint in Iraq going forward. But certainly, pending approval of the Secretary and further—you know, and further approval by the Department, we would be willing to do that.

Senator HAWLEY. Yeah, let me perhaps rephrase my question. Has CENTCOM done a similar—you are doing this analysis now for Afghanistan because of the President's order in terms of how we can reposition there to achieve our counterterrorism objectives. Has CENTCOM done a similar analysis for Iraq in the event that our force posture there might change significantly?

General MCKENZIE. Senator, not vis-á-vis Iraq particularly, although the logic of the argument, the logic of the capability would be the same where there is a target against Afghanistan or Iraq.

So the work that we are doing right now would be useful should that prove necessary at some contingent time in the future as yet unplanned.

Senator HAWLEY. Do you anticipate doing an analysis for the Iraq situation? The reason I am asking, General, it seems that if we are going to have a meaningful discussion about our continued military presence there, we are going to need to know the options, what we can realistically hope to achieve should we draw down or leave entirely.

General MCKENZIE. Sure. So right now we are not planning for that in Iraq, is probably the best way to answer your question. We could plan for it very rapidly if so directed, but, again, I note that right now we do plan on maintaining a presence in Iraq into the future, subject to agreements and further discussions with the Government of Iraq.

Senator HAWLEY. Let me just ask you in the few seconds I have remaining, General, DOD budgeted about $4 billion last year for the Afghan Security Forces Fund. That is just short of the amount that United States Indo-Pacific Command (PACOM) needs for this year's installment of the Pacific Deterrence Initiative. At the same time, there is strong reason to believe that the Afghan security forces will be significantly reduced, harmed, or just collapse when United States troops depart. Here is my question. From a military standpoint, under what conditions would you say that it is no longer advisable for DOD to be investing this amount—these billions of dollars each year in the Afghan security forces?

General MCKENZIE. Senator, that is a sort of a future hypothetical question which I try to avoid answering, but I can tell you this. If we do not provide them some support, they certainly will collapse, and I think that is not in our best interests.

Senator HAWLEY. Yeah. The reason—as you can probably anticipate, the reason I am asking is I am concerned that we will continue to pour resources into the security forces without much return on investment when we need them. We need those resources very badly in other theaters, particularly in our pacing theater. I have had just about used up my time here, I think. In fact, I am over my time. Thank you, General, for being here. Thank you, General Townsend, as well. I will have some additional questions for you in a written setting. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hawley. This concludes the open session. Let me yield to Senator Inhofe for any comments he might have.

Senator INHOFE. Yeah, I do. I want to make sure the staff, anyone who is here, understands that we have a lot of questions we want to ask in a closed session. That is going to take place in 217. We have four votes coming up, so it is going to be very convenient to be down there, run up and get our votes and come back, so I would invite all of our members to come to that closed session immediately.

Chairman REED. Let me echo what Senator Inhofe said. In fact, I was going to say that, but he——

Senator INHOFE.——Oh.

[Laughter.]

Chairman REED. This is sort of ESP, I think. I do not know what is going on. But, yes, we are going to adjourn immediately to SVC–217. We will have a closed session. It will be people coming in and out to vote, but there are many issues we want to cover there. Gentleman, thank you for your testimony, thank you for your service, and for those who serve in your commands.

The open hearing is adjourned.

[Whereupon, at 11:32 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

IRAN AND REENTERING THE JOINT COMPREHENSIVE PLAN OF ACTION

1. Senator HIRONO. General McKenzie, would rejoining the Joint Comprehensive Plan of Action (JCPOA) be a positive step in containing Iran's nuclear ambitions?

General MCKENZIE. Our diplomats at the Department of State have the lead for the nuclear talks currently underway in Vienna, working with our Allies to prevent Iran from acquiring a nuclear weapon. The JCPOA effectively constrained Iran's nuclear program by blocking all of Tehran's potential pathways to a nuclear weapon and enabled robust international monitoring of all aspects of Iran's nuclear program. An agreement that verifiably restrains Iranian return to full nuclear activities and strict compliance with its commitments under the deal extends breakout timelines preventing an Iranian weapons in the U.S national security interest.

2. Senator HIRONO. General McKenzie, how does extending the nuclear weapon production timeline support the United States' strategic interests in the region?

General MCKENZIE. Iran's behavior remains the greatest, single threat to security and stability in the region. Our diplomats are hard at work with Allies to prevent Iran from acquiring a nuclear weapon. If they are able to make progress in curtailing Iran's nuclear program, particularly by extending Iran's breakout timeline, this would depressurize the region by reducing the likelihood of the development of a weapon of mass destruction and the chances for increased regional conflict as a result of that acquisition.

3. Senator HIRONO. General McKenzie, how does extending the nuclear weapon production timeline support your ability to plan for contingencies if Iran does attempt to build nuclear weapons?

General MCKENZIE. [Deleted.]

WITHDRAWAL OF FORCES FROM AFGHANISTAN

4. Senator HIRONO. General McKenzie, are you preparing contingency plans to react if United States Forces are attacked by the Taliban during the withdrawal?

General MCKENZIE. USCENTCOM has a plan in place, to include carrier-based airpower, bombers, and other crisis response forces to protect United States and coalition troops as we withdraw from Afghanistan. We are confident we have the right capabilities in place to defend our troops and respond to any attacks. We will maintain a regional counterterrorism capacity, with a military and intelligence assets in the region, that can counter the re-emergence of a terrorist threat and deal with it if it does emerge. We will also hold the Taliban accountable if they are not doing what they have committed to do. Conducting counter-terrorism surveillance and suppression without a "platform" in Afghanistan is a lot harder, but it is not impossible.

5. Senator HIRONO. General McKenzie, what role will United States Central Command (CENTCOM) play in preventing violent extremist organizations like al Qaeda and ISIS [Islamic State of Iraq and Syria] from regaining a foothold in Afghanistan after the withdrawal?

General MCKENZIE. The United States will conserve and sustain regional counterterrorism capabilities with our international and Afghan partners to prevent the emergence of terrorist networks that could threaten the United States homeland. Furthermore, through diplomatic efforts with Government of the Islamic Republic of Afghanistan, the United States Government will hold the Taliban to its commit-

ments to ensure that al Qaeda or any other group never again can use Afghanistan as a base of operations against the United States.

IRAN'S PRESENCE IN SYRIA

6. Senator HIRONO. General McKenzie, over the last several years Iran has become increasingly involved in the conflict in Syria. What is the current status of United States Forces in Syria?

General MCKENZIE. In Syria, approximately 900 United States military personnel support the Counter Islamic State of Iraq and Syria (ISIS) mission from bases in northeastern Syria and At-Tanf Garrison, a desert garrison located in southeastern Syria near the border with Iraq and Jordan. We provide training and enabling support to vetted Syrian groups and individuals, including the Syrian Democratic Forces (SDF) in the Eastern Syria Security Area. We have provided training to the SDF on operational and tactical skills such as marksmanship, heavy weapon employment, and mounted maneuver (vehicle operations). We also provide intelligence and other enabling support to the SDF. We continue to provide training and equipment to help increase SDF's capacity to manage their detention facilities, holding approximately 10,000 ISIS detainees.

7. Senator HIRONO. General McKenzie, how are United States Forces managing Iranian involvement in this conflict?

General MCKENZIE. [Deleted.]

8. Senator HIRONO. General McKenzie, what conditions do you believe need to be satisfied before the United States withdraws our remaining forces from Syria?

General MCKENZIE. First, I would like to say that the United States leaving Syria is a policy decision. For USCENTCOM, our mission is to defeat Islamic State of Iraq and Syria (ISIS). Although ISIS no longer holds territory, remnants of ISIS remain a threat and given the opportunity, ISIS will reconstitute its capability to plan and attack the homeland, our interest, and our Allies and partners. Our forces in Syria provide vetted Syrian groups and individuals with the equipment, training, and intelligence that they need to continue to counter the ISIS threat. When our vetted partner forces, including the Syrian Democratic Forces, are capable of dealing with this threat without our support, then I would be satisfied that the military conditions have been met for a withdrawal of our remaining forces.

POPULATION GROWTH IN AFRICA

9. Senator HIRONO. General Townsend, as noted in your posture statement, the population of the African continent is growing rapidly and has the potential to exacerbate the extreme poverty already present on the continent, especially among younger generations who both make up the majority of the population and are most vulnerable to recruitment by violent extremist organizations. What steps is United States Africa Command (AFRICOM) taking, in coordination with our interagency partners and allies, to address recruitment efforts by violent extremist organizations on the continent?

General TOWNSEND. Africa's increasing youth population can be a positive force for prosperity, innovation, and growth. Future generations of young men and women should be viewed as our shared responsibility to protect from the cruelties of al Shabaab, Boko Haram, and ISIS. If left defenseless in unstable environments, African youth are vulnerable to a wide range of malign actors, including criminal networks, militias, and in some cases, violent extremist organizations (VEOs). In many cases, VEOs specifically target young people and forcibly kidnap or coerce them into their ranks.

To help African partners protect their youth, USAFRICOM works closely with the interagency to improve security, stop the spread of extremist ideologies, and stabilize regions affected by VEOs. USAFRICOM, in conjunction with Allies and partners, degrades VEO networks to create the environment for the Department of State and USAID's stabilization and development activities to take root. USAFRICOM, in close collaboration with USAID, conducts humanitarian assistance to address underlying drivers of instability, working with host governments to provide essential services and relieve acute conditions. We share the premise with our interagency partners that young people are more likely to work with security forces to stand up to VEOs when they trust those security forces to protect them and have hope for a brighter future. This is one of the key reasons why the United States is often the security partner of choice in Africa, in recognition of our core values versus malign alternatives.

10. Senator HIRONO. General Townsend, are there any additional authorities or initiatives that require Congress' help in this area?

General TOWNSEND. USAFRICOM has supported officers from eleven African partners to attend courses on countering VEO recruitment taught by the Joint Special Operations University (JSOU). Increased funding for such courses and other IMET funds would help address underlying drivers of radicalization, USAFRICOM works to strengthen citizen security by professionalizing partner forces through the Institutional Capacity Building (ICB) §332 Authority in support of the Building Partner Capacity §333 Authority. The Ministerial and Service level ICB Lines of Effort strengthen the institutions shaping African security sectors, and by extension, African security broadly. Congress's continued support for these efforts would go far to ensure African youth are free from the spectre of VEO recruitment. I would also submit that addressing the risks of climate change in Africa can further insulate fledging institutions from the strain of climate-induced crises and VEO alternatives. The resumption and expansion of the Defense Environmental International Cooperation Program, which lost funding in 2020, would provide USAFRICOM with critical tools to reduce the risk for Africa youth and citizens. When African youth are safe from irregular threats attempting to recruit or coerce them into service, they are free to pursue productive futures.

ISLAMIC STATE OF IRAQ AND SYRIA IN UNITED STATES AFRICA COMMAND

11. Senator HIRONO. General Townsend, ISIS continues to develop a foothold in North and East Africa and based on the recent attack in Palma, Mozambique last month, it seems that ISIS is gaining ground in southern Africa and across the continent. Can you provide an overview of your assessment of ISIS in the AFRICOM area of operations?

General TOWNSEND. ISIS branches and aspirants in Africa are mostly on an upward trajectory. The two exceptions are in North Africa where most of ISIS's affiliates have been largely degraded and are focused on survival and in Horn of Africa where their presence is small and competes with Al Shabaab. However, in West, East, and Central Africa, ISIS branches are growing and expanding in under-governed areas, exploiting poor economic conditions, ethnic competition, and weak security forces. Mozambique is a prime example of this, where ISIS–Mozambique, since its inception in 2017, has exponentially grown the frequency and complexity of its attacks, and expanded its geographic areas of operations into neighboring Tanzania and to the western LNG sites in northern Mozambique. In West Africa, ISIS–West Africa is ISIS's largest and most active province outside of Iraq and Syria, and has consolidated control over its Lake Chad Basin safehaven. The group has expelled Nigerian military and security forces and attacked Boko Haram in these safehavens and has provided rudimentary governance and social service to the local populace since at least early 2018. ISIS in the Greater Sahara maintains a presence in Sahelien West Africa and continues low-level attacks, but is still recovering from losses sustained from French CT operations and conflict with al-Qaida affiliates in the area. In the Democratic Republic of the Congo, a previously anti-Uganda insurgent group rebranded itself and pledged allegiance to ISIS in 2017, and attacks local security forces, UN peacekeepers, NGOs, and local towns and villages. Along with the ISIS Branch in Somalia, these groups are increasingly interconnected and are fueling the growth and expansion of ISIS supporters in many sub-Saharan Africa countries. Although all of these groups are focused locally in their areas of operation, their attacks and ability to control territory offer ISIS core fodder for their media releases and propaganda, which allows ISIS to portray a successful and expanding caliphate to its global support base despite setbacks in other areas of the world.

12. Senator HIRONO. General Townsend, how are you partnering with nations across the continent to counter ISIS attacks and recruitment?

General TOWNSEND. Senator, the bottom line up front is USAFRICOM is not resourced to do very much to help partners to counter growing ISIS attacks, and recruitment. Where we do try to help, USAFRICOM follows a partner-centric approach to countering ISIS attacks and recruitment across the continent. This is done primarily through a myriad of Title 10 and Title 22 capacity-building activities conducted in coordination with the inter-agency. Specifically, force modernization and training efforts with key African partners provide them with the tools and knowledge necessary to confront ISIS on the battlefield. Military intelligence capacity building also plays an important role helping partners to understand how to obtain, verify, and analyze intelligence and then appropriately use it in operational decision

cycles. In doing so, USAFRICOM and its components create sustainable entities, which do not only anticipate and respond to security threats but aid in more professional operations, grounded in doctrine.

USAFRICOM capacity building activities are important, but the long-term fight with ISIS will not be won on the battlefield alone. Good governance, economic opportunity, and human development in African societies are antidotes to ISIS recruitment. To that end, USAFRICOM plays a supporting role to USAID and Department of State "3D" Diplomacy, Development, and Defense activities. USAFRICOM also supports many Department of State programs, such as the Global Peace Operations Initiative (GPOI), the Partnership for Regional East Africa Counterterrorism (PREACT), Trans-Sahara Counterterrorism Partnership (TSCTP), Africa Military Education Program (AMEP), and coordinates with the Department of State to advance Women, Peace, and Security (WPS) on the continent. These programs, among others, strengthen the ability of our African partners to counter ISIS recruitment activities by providing training on human rights and the rule of law.

QUESTIONS SUBMITTED BY SENATOR JACKY ROSEN

MQ–9 PRODUCTION

13. Senator ROSEN. General Townsend, how would additional MQ–9 aircraft support AFRICOM's intelligence, surveillance, and reconnaissance (ISR) mission?

General TOWNSEND. Additional ISR, manned or unmanned and preferably SIGINT enabled and armed, is AFRICOM's number one unresourced unfunded priority. Additional aircraft would meaningfully bolster USAFRICOM's counter-violent extremist organization and strategic competition missions by providing additional coverage in both space and time – increasing our situational awareness of adversarial activities on the continent. With vast distances between basing locations and operating areas, MQ1/9s provide the essential range and long-endurance ISR capability we require. Additional MQ1/9s would also fill a force protection role, enabling increased DOD and DOS engagement opportunities on the continent.

14. Senator ROSEN. General Townsend, what would be the impacts of a gap in ISR capabilities if MQ–9 production were to be suspended without a follow-on plan?

General TOWNSEND. Additional ISR, manned or unmanned and preferably SIGINT enabled and armed, is AFRICOM's number one unresourced unfunded priority. I don't know how suspending MQ–9 production would affect USAFRICOM's allocation of ISR assets. The United States Air Force would be better equipped to answer how a change in production would impact their force offering to the Joint Force. If suspended production resulted in reduced capacity, Joint Staff could potentially make adjustments to the global allocation to USAFRICOM and other combatant commands. A reduction in allocation to USAFRICOM would impact our ability to address security concerns and provide force protection to United States and partner forces during operations, engagements and crisis response.

TRANSFER OF ISRAEL TO UNITED STATES CENTRAL COMMAND

15. Senator ROSEN. General McKenzie, how have Arab states under CENTCOM's area of responsibilities that don't have diplomatic relations with Israel responded to the transfer?

General MCKENZIE. USCENTCOM has noted no reactions from AOR states to the Unified Command Plan change.

IRANIAN AGGRESSION

16. Senator ROSEN. General McKenzie, what are the impacts on regional stability of this new agreement between China and Iran? Is this merely a piece of paper or is it the beginning of significant strategic relations between Beijing and Tehran?

General MCKENZIE. The China-Iran 25-year agreement provides a non-binding framework for Chinese investment in Iranian infrastructure in return for guaranteed Iranian oil sales at a discount and increased military cooperation. High-level Chinese diplomatic visits to key Gulf partners, including Saudi Arabia, the United Arab Emirates, Oman, and Bahrain suggest Beijing will seek to continue balancing its regional relationships while avoiding potentially destabilizing actions such as certain arms sales to Iran. While the agreement signals China's intent to continue strengthening ties with Iran, China has publicly downplayed its significance. This agreement signifies a significant change for Iran, in light of the potential for increased oil sales and closer Iranian-Chinese relations across a broad spectrum.

Tehran likely believes the deal will ensure reliable revenue and set the stage for future additional trade agreements.

17. Senator ROSEN. General McKenzie, how is CENTCOM proactively protecting our Forces and diplomats from the threat to United States and coalition forces posed by Iranian-aligned militia groups?

General MCKENZIE. We continually conduct cross-discipline terrorism threat assessments, strategic threat analysis, and planning and integration to mitigate threats. This detailed assessment and planning process enables commanders to deploy and employ various methods of active defense such as counter rocket, artillery, and mortar (C–RAM) systems and counter unmanned aircraft systems (CUAS) systems. We also employ passive defense methods such as structured hardening and camouflaging. These active and passive defense measures protect United States & coalition forces and diplomats from potential attacks by Iranian-aligned militia groups.

18. Senator ROSEN. General McKenzie, how is CENTCOM working with our regional partners to deter Iranian aggression, including by stopping transfers of conventional arms to terrorist groups like Hamas and Hezbollah and ensuring freedom of navigation in the region's waterways?

General MCKENZIE. Starting in 2019, after several incidents in which freedom of navigation was threatened by Iran and Iran backed militia groups, USCENTCOM partnered with regional and extra-regional Allies and partners to establish the International Maritime Security Construct. This construct allows nations to provide maritime forces to patrol and stand watch to ensure freedom of navigation in the Strait of Hormuz, the Arabian Gulf, the Gulf of Oman, and in the vicinity of the Bab al-Mandeb Strait. To counter transfers of conventional arms to terrorist groups and militias, we are working with the interagency, Allies, and partners, to conduct operations to stop the transfer of lethal aid to Iranian proxies and partners. Specific actions include intelligence gathering and subsequent interdiction of weapons shipments. The recent seizure of a large weapons cache by the USS *Monterey* is a recent example of these types of operations.

POLITICAL STABILITY OF JORDAN

19. Senator ROSEN. General McKenzie, what military risk do we assume with Jordan if political instability in the country escalates?

General MCKENZIE. Escalation of political instability in Jordan could impede the Department's efforts to strengthen the Jordan Armed Forces (JAF) while imposing risk to operations to defeat Islamic State of Iraq and Syria (ISIS) and counter violent extremist organizations (VEO). USCENTCOM requires a balanced, tailored force presence and basing network across the Middle East. Jordan is a key partner, providing access to several bases, ports, and airspace while facilitating the Department's operational reach. The JAF remains committed to the defeat ISIS Coalition, providing air, ground, and special operations force capabilities. Any degradation to the Department's access to Jordan or to the JAF's capacity and will would therefore have a lasting effect on regional stability.

20. Senator ROSEN. General McKenzie, what are the implications for our national security interests?

General MCKENZIE. President Biden, in his April 7 call with King Abdullah II, emphasized the importance of the King's leadership to the United States and the region. If Jordan were to become politically unstable it could effectively threaten a key partner of our defeat Islamic State of Iraq and Syria campaign. Political instability in Jordan could therefore result in the Jordan Armed Forces directing their attention away from their efforts to defeat ISIS.

21. Senator ROSEN. General McKenzie, can you explain how the recent defense agreement with Jordan, which was made public last month, benefits our military posture?

General MCKENZIE. The Defense Cooperation Agreement (DCA) supplements the 1996 Status of Forces Agreement (SOFA), and codifies additional rights, privileges and immunities for United States Forces, such as access to and use of facilities, tax exemptions, and freedom of movement, that greatly benefit our military posture in Jordan. The DCA also enables the United States to make investments in military construction projects to support joint military efforts to defeat ISIS and to pursue mutual goals of regional stability and counterterrorism.

IRON UNION

22. Senator ROSEN. General McKenzie, can you provide an update on the Iron Union exercise between the United States and the United Arab Emirates?

General MCKENZIE. Field Training Exercise (FTX) IRON UNION 14 was held in the United Arab Emirates 28 Jan–5 Feb 2021 with one United States mechanized infantry company and one United Arab Emirates Land Forces Company. All exercise objectives were met, strengthening the relationship between the two nations, enhancing interoperability, improving partner capacities and promoting regional security. Despite the great results from this event, it is the last FTX to be planned, with future iterations shifting instead to a computer-based Command Post Exercise due to reduction in forces and funding provided to USCENTCOM.

23. Senator ROSEN. General McKenzie, the Emirati ambassador has suggested that the United Arab Emirates (UAE) might invite the Israel Defense Forces (IDF) to a future iteration of the Iron Union exercise. Do you believe it would be a good thing to begin to build a more unified and capable American, Arab, and Israeli coalition to push back on aggression from Tehran?

General MCKENZIE. The participation of Israel Defense Forces in future exercises with other regional partners in the USCENTCOM Area of Responsibility would certainly be a positive step towards regional stability. While there are benefits to keeping some exercises as bilateral events only, efforts to further normalize relationships among all USCENTCOM partners would benefit everyone involved, enhance regional stability, and send a strong signal to potential adversaries. Increasing the number, scope or scale of any exercise events will not be achievable without a corresponding increase in funding and resources available.

24. Senator ROSEN. General McKenzie, would you welcome an Emirati invitation to the IDF to join the next Iron Union Exercise?

General MCKENZIE. USCENTCOM welcomes any effort to enhance regional relationships and expand U.S. interoperability with our partners in the area of responsibility, and to increase bilateral cooperation between each of those partners. While including Israel in Exercise IRON UNION is one option, there are also benefits to maintaining some exercises as bilateral events. I am looking at all options to try to include Israel in events like this and will discuss with our regional partners their objectives and desires as well.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

GREAT POWER COMPETITION

25. Senator BLACKBURN. General Townsend, and General McKenzie, are you aware of the Chinese and/or Russian disinformation operations being propagated within your area of responsibility, and if so is this a pervasive issue?

General TOWNSEND. Chinese disinformation is all over Africa, and Beijing is spreading it via both official and unofficial channels. We've seen Chinese ambassadors try to obscure the origins of COVID–19, for instance, saying in interviews it didn't actually originate in China. China also operates more than 60 Confucius Centers across the continent. You might go to one to learn Mandarin, but it comes with a helping of propaganda. Finally, Chinese media companies, like Star Times, which broadcasts in more than 30 countries, will make pro-China content, dub it into a local African language, distribute it for free, present it as factual journalism, and frequently, fund its publication.

As for Russia, its influence operations are also pervasive across the USAFRICOM AOR, most prominently through the organization of Russian oligarch Yevginy Prigozhin. Prigozhin's network has interfered with African elections in Zimbabwe, Madagascar, and South Africa. A Prigozhin-linked influence operation based in Ghana and Nigeria targeted the 2020 United States election. In Libya, Prigozhin's network took over television studios and a newspaper to push Russian-approved narratives. Influence efforts in Mali, Cameroon, Equatorial Guinea, and Mozambique have criticized French foreign policy, made claims of a fictitious coup attempt, and promoted Russian COVID–19 vaccines. These influence campaigns also targeted African diaspora populations in Europe.

General MCKENZIE. Yes. Russian and Chinese disinformation is pervasive throughout the USCENTCOM area of responsibility (AOR). Both Russian and Chinese operatives seek to shape the information environment to undermine United States relations in all 21 AOR states, using diplomatic engagements and social/traditional media to question United States reliability. Moscow and Beijing tend to

prioritize efforts in countries in which they have military and economic strategic interests and deem to be in their respective spheres of influence (such as Central and South Asia). While the efficacy of these efforts varies, disinformation is a key component of Russian and Chinese strategic competition strategy.

26. Senator BLACKBURN. General Townsend, compared to what we spend in Iraq, for example, how do the modest expenditures we make for AFRICOM counter the influences of China and Russia in ways that impact the average American?

General TOWNSEND. There are approximately 232,000 Americans living and working in Africa every single day. These Americans represent a significant counterbalance to the 1.1 million Chinese in Africa advancing China's ambitious agenda for the continent. Given the vast natural resources and incredible growth potential in the population of Africa, 1.7 billion by 2030, the United States can ill-afford to ignore the economic opportunity in Africa.

USAFRICOM's modest expenditures are focused on exposing China and Russia's malign efforts to undermine sovereignty, forcing African countries into disadvantageous agreements, and extracting resources from Africa with little benefit for Africans.

Countries free of Russian and Chinese malign influence create opportunities for United States businesses to compete in a rules-based system, as part of a free international order. By extension, businesses bound by legal regulations, including the many United States companies doing business in Africa, have a chance to offer their services in a fair and open process. The current efforts underway in Africa are the barest minimum that the United States can do to preserve the option to play in the economic future of Africa.

27. Senator BLACKBURN. General Townsend, what would be the impact if Moscow does establish a port in northern Africa?

General TOWNSEND. Establishing a military port facility in North Africa is one of Russia's long-term strategic goals. A dual-use civilian/military port or exclusive naval facility would represent a significant leap in Russia's level of access and influence in the region. It would also be a major advancement in Russia's strategic effort to be seen as a global power with NATO as their primary opponent. A Russian port increases the Russian Navy's logistical support in the Mediterranean, improves intelligence collection of United States and NATO forces in Europe and Africa, and reduces their reliance on port calls. This is vital to Russia as a means to avoid sanctions on access to European ports following their annexation of Crimea. Guaranteed access to naval facilities simplifies the logistics of Russia's routine naval deployments through the Mediterranean.

A Russian port facility and consequent increase in Russian Naval Assets poses a direct threat to United States and NATO forces by improving Russia's ability to monitor and threaten the Mediterranean, especially maritime approaches to Syria, the Black Sea and the Suez Canal, as well as the Straits of Gibraltar and Straits of Sicily. A Russian port in Libya complicates both United States military support to diplomatic relations in that country and personnel recovery and crisis response across the continent. Direct Russian access to Libyan oil complicates United States economic diplomacy and disrupts critical access and influence in North Africa. While a base in North Africa would be exposed and isolated in a conflict with Russia, it widens the problems of potential contested logistics in any war plan dependent on the Suez Canal as a strategic line of communication. Finally, USAFRICOM is as concerned, or more concerned, about a Chinese naval facility in North or West Africa as we are a Russian facility.

IRAN

28. Senator BLACKBURN. General McKenzie, with respect to Iran and competition within this proxy force grey zone environment, where could we be more effective and what enabling capabilities or authorities do you require?

General MCKENZIE. [Deleted.]

29. Senator BLACKBURN. General McKenzie, Israel has accused Iran of providing the Hezbollah militia with precision-guided missile production facilities. Is this true, and if so what can the Lebanese Armed Forces (LAF) do to prevent Iran from providing Hezbollah with this capability?

General MCKENZIE. [Deleted.]

SOMALIA

30. Senator BLACKBURN. General Townsend, how important to the counter-ISIS and counter-al-Shabaab fight is maintaining our political influence in Somalia?

General TOWNSEND. Maintaining political influence in Somalia is decisive to the CVEO fight against al-Shabaab and ISIS–Somalia. Political influence enables United States interagency efforts that ensure the Somalia Security Forces remain an apolitical, professional force. If the Somali National Army becomes politicized or devolves into militias, the fight against VEO adversaries fails. Regional instability provides the fertile ground for terrorist activity with U.S. Homeland aspirations. If security forces are distracted with internal political conflicts, VEOs will fill the void. Additionally, CVEO strategies that rely solely on kinetic targeting are unable to address underlying drivers of violent extremism in Somalia. USAFRICOM builds United States political influence in Somalia through its contribution to a whole-of-government approach to CVEO. Maintaining this influence is necessary to ensure the Federal Government of Somalia can move forward. As stated in President Biden's inaugural address and within the Interim National Security Strategic Guidance, "we will only succeed in advancing American interests and upholding our universal values by working in common cause with our closest allies and partners."

31. Senator BLACKBURN. General Townsend, how have your counterterror operations been impacted by the reduction in United States troops on the ground in Mogadishu and has al-Shabaab's activity changed as a result?

General TOWNSEND. Al-Shabaab operations were already on an upward trajectory as the United States began its repositioning in December 2020 and continues on that trend according to academic database data and high profile incidents in Mogadishu. Al-Shabaab assassinations of government and security force officials in 2021 are at the highest levels ever, and as of May, the group has conducted 6 VBIED attacks in Mogadishu equaling last year's total number of VBIEDs. Al-Shabaab publically celebrated the departure of United States troops from Somalia and is using the opportunity to enhance their global reputation, increase recruitment, and extend control into new regions in central Somalia, all of which may have long-term impacts.

DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, JUNE 10, 2021

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

THE DEPARTMENT OF DEFENSE BUDGET POSTURE

The Committee met, pursuant to notice, at 9:30 a.m. in room SD–G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Warren, Peters, Manchin, Duckworth, Rosen, Kelly, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Cramer, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. I would like to call this hearing to order. The Committee meets today to receive testimony on the President's Defense Budget Request for fiscal year 2022.

Witnesses this morning are Secretary Lloyd Austin, Secretary of Defense; Mr. Michael McCord, Under Secretary of Defense (Comptroller); and General Mark Milley, Chairman of the Joint Chiefs of Staff. I welcome each of you and thank you for your service and willingness to appear before us today.

Two weeks ago, President Biden released his Defense Budget Request for fiscal year 2022, with a top line of $715 billion. The request focuses on several key areas: defeating COVID–19, prioritizing China as the pacing challenge, addressing advanced and persistent threats, innovating and modernizing the Department of Defense (DOD), and tackling the climate crisis.

The President's Defense Budget Request is a starting point for Congress, and must always be viewed in the broader context of the national security and fiscal challenges we face. It is important that we ensure we have the right strategies and resources to keep the American people safe now and in the future, with a keen eye toward evolving threats around the globe.

I am pleased to see that this budget request places a priority on taking care of the men and women who serve in uniform and the civilians who serve alongside them in the Department, by including an across-the-board pay raise for military and civilian personnel of

2.7 percent. While this pay raise is required by law for military personnel, too often DOD civilians have been overlooked. This increase in civilian pay sends an important message to the workforce and begins to reverse years of pay freezes and benefit cuts.

Notably, the budget request includes $112 billion in research, development, test, and evaluation funds, the largest ever requested in this area. This includes significant funding for modernization areas such as microelectronics, artificial intelligence, hypersonic missiles, and 5G. Building our strength in these areas will be critical to the modernization of our national security.

But as the recent SolarWinds, Microsoft Exchange, and Colonial Pipeline server breaches painfully illustrated, our traditional "perimeter-based" cyber defenses are simply inadequate to deal with sophisticated adversaries that are clearly advantaged in the cyber domain. I hope our witnesses will expand on what activities DOD is taking to accelerate and expand our cybersecurity and what resources are needed to accomplish them.

With regard to the President's transition strategy in Afghanistan, the budget request includes $3.3 billion for the Afghan Security Forces Fund. This will ensure our continued support for the sustainment, infrastructure, equipment, and training requirements for Afghan security personnel. I ask that our witnesses update the Committee on this transition.

Last year, this Committee led the way in establishing the Pacific Deterrence Initiative, or PDI, to serve as a means for improving the capabilities, design, and posture of our joint forces in the Indo-Pacific region. The PDI was intended to strengthen the presence and resiliency of our armed forces; improve logistics and maintenance capabilities; support exercises, training, experimentation, and innovation for the joint force; and build the defense and security capabilities and cooperation of allies and partners. I am concerned that the Department's budget request takes a heavily platform-centric approach to PDI, and I look forward to working collaboratively with the Department of Defense leadership to more appropriately align resources in the DOD budget with our intent for PDI.

Similarly, the budget request proposes an $800 million reduction to the European Deterrence Initiative, the EDI. The Initiative, which was also established by this Committee, has seen budget decreases for the past 3 years. The Department has suggested that this is part of "transitioning to a steady state" in the European Command AOR [area of responsibility]. I would ask that our witnesses further explain the reasoning behind the reduced EDI budget, and specifically, whether you believe this level of investment in infrastructure, force posture, and capabilities is sufficient to deter Russian aggression.

With regard to our nuclear strategy, I understand that the budget request before us supports important steps toward nuclear modernization. Our allies and partners depend on the United States nuclear umbrella, and modernization of our strategic forces is needed to reassure them of our dependability. One thing I think everyone would agree on, and often gets lost in the discussion, is the fact that arms control and the modernization of our nuclear forces are inherently linked together. Even as we modernize, we should seek

ways to promote strategic stability, like the extension of the New START [Strategic Arms Reduction Treaty] agreement and follow-on talks to cover new strategic weapons and further nuclear stockpiles.

Lastly, I would note that fiscal year 2022 is the first year in 10 years that we will not be constrained by the Budget Control Act. Eliminating arbitrary spending caps means that every department's budget can, and should, be argued on its merits. Taxpayers should not have to pay for programs or systems that are wasteful or ineffective, and Congress must not shirk its responsibilities to get rid of outdated systems in favor of more advanced, effective, new technologies and capabilities. Belt-tightening in any department, particularly defense, is always a challenge, but it is also an opportunity to evaluate what is necessary and what drives innovation. The Department has taken the first difficult step in proposing $2.8 billion worth of divestments and retirements of platforms, and I will work with my colleagues to evaluate these proposals and make hard but necessary choices.

Finally, as we progress through this legislative year, the Committee will tackle many important policy issues, none bigger than how we prevent and prosecute sexual assault and harassment in the ranks. Change is coming to the Department and the military services. More than anything, cultural change within the force is critical to reducing the number of sexual assaults and related offenses. The President directed a review earlier this year, and I know the Deptartment has been hard at work. I look forward to receiving the administration's recommendations to incorporate into the Committee's important work on this issue.

Again, I thank the witnesses for their participation today, and I look forward to their testimonies.

Now let me now recognize the ranking member, Senator Inhofe.

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Thank you. Thank you, Mr. Chairman. I would like to thank all three of our witnesses for dedicating their lives to securing our Nation. Secretary Austin told us, along with nearly every witness who has come before this Committee, China is our pacing threat. It is a global, long-term competition, and it is across every arena of the national power, but the military balance of power concerns me most.

In 2018, the National Defense Strategy (NDS) gave us a blueprint for pushing back on China. The bipartisan NDS Commission said that 3 to 5 percent real growth was needed to implement that strategy. It does not look like we are going to get that. Since then, the threats have gotten worse. The administration gave us a budget that cuts spending when we need real growth. They want the military to do more on climate change and pandemic response, more mission, but with fewer resources.

We have been asking our military to do too much with too little for too long. President Biden's budget cuts would make it even harder. It barely treads water while we face all these threats. These budget cuts shift aircraft, munitions, and more. We have nearly $25 billion of unfunded priorities. These are not wish lists. These are risk lists. The budget cuts aircraft procurement by 20

percent, backslides on Army readiness, and starves Navy shipbuilding. This budget forces our military leaders to choose between being ready for today's fight or the fight of the future.

The Chinese military leaders, they are not making that choice. On Tuesday, I read in the press about the memo by Acting Secretary of the Navy on next year's budget. He says the Navy must choose between modernizing ships, subs, and aircraft. Does anyone think the Chinese have to make that decision?

The Chinese defense budget has grown by 450 percent since 2001. They added $200 billion in the last decade, while we cut $400 billion. So we are behind in some of the areas and we are falling behind in some of the other areas, and as a result I am worried deterrence will fail. Maybe today or 5 years or 10 years. When it does, the cost will be much higher than any investment we could be making today to prevent that. We are not making hard choices. We are making bad choices and short-sighted choices.

The administration tells us that the Pentagon budget is cut because of fiscal realities, but they are spending trillions of taxpayer dollars on everything else under the sun. We all agree, and even the administration agrees, that a strong military improves all other tools of national power. I just cannot understand this short-sighted underfunding of our troops. We make a sacred compact with our servicemembers. We tell them we will take care of them and their families, and we do that very well. We also tell them that we will give them the tools that are necessary to defend the Nation and come home safely, but we are not holding up our end of the bargain with this proposed budget. We are failing to give them the resources they need to implement that strategy, and, Mr. Chairman, we need to do better.

Thank you, Mr. Chairman.

Chairman REED. Well, thank you very much, Senator Inhofe. Secretary Austin, please.

STATEMENT OF THE HONORABLE LLOYD J. AUSTIN III, SECRETARY OF DEFENSE

Secretary AUSTIN. Thank you, Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee, thank you for the opportunity to testify today about the President's budget request for fiscal year 2022.

I am pleased to appear before you alongside General Milley, whose advice and counsel has been crucial to us as we developed our budget, and as we continue to defend this nation, which is our chief responsibility and my top priority. I am also glad to be joined by our Comptroller and our Chief Financial Officer (CFO), Mr. Mike McCord.

Let me say at the outset that I believe that our budget requests will help us match resources to strategy, strategy to policy, and policy to the will of the American people. Informed by the President's Interim National Security Guidance and my own message to the force, it funds the right mix of capabilities that we need most to defend this nation, now and in the future. It invests in hypersonic weapons, artificial intelligence, microelectronics, 5G technology, space-based systems, shipbuilding, and nuclear modernization, to name a few. In fact, this budget asks you to approve nearly $28

billion to modernize our nuclear triad, and $112 billion for research, development, test, and evaluation, the largest research and development (R&D) request ever put forth by this Department.

Our request also gives us the flexibility to divest ourselves of systems and platform that no longer adequately meet our needs, including older ships, aircraft, and intelligence, surveillance, and reconnaissance (ISR) platforms that demand more maintenance, upkeep, and risk than we can afford.

As you know, we have commissioned a Global Posture Review and a new National Defense Strategy which will further inform and guide our resource decisions.

The Department must be ready to meet and keep pace with our competitors, and if necessary, to fight and win the next war, and not the last one. That is why this budget stays true to our focus on matching the pacing challenge that we clearly see from the People's Republic of China, to include more than $5 billion for the Pacific Defense Initiative. I would just add that our China task force has also completed its work, and yesterday I issued an internal directive kicking off several Department-wide efforts that will, among other things, help bolster our deterrence against the People's Republic of China (PRC) and revitalize our network of regional allies and partners and accelerate the development of cutting-edge capabilities and new operational concepts.

However, we recognize that China is not our only challenge. Our budget also includes $617 million to counter the damaging effects of climate change and additional funds to prepare for future challenges like another pandemic. It also helps us counter the belligerence that we face from Russia, especially in the cyber realm. You will see more than $10 billion here devoted to cybersecurity, cyberspace operations, and cyber research and development.

With this emphasis on space, missile defense, and more sophisticated sensors, our budget will also help us counter the increasing ballistic missile capabilities of nations like North Korea and Iran. It funds a troop presence and counterterrorism capabilities in the Middle East and South Asia to meet the threats posed not only by Iran but also by terrorist networks like the Islamic State of Iraq and Syria (ISIS) and al Qaeda, and in Africa like those posed by Al-Shabaab.

I am also confident that this budget will help us maintain the integrated deterrent capability and global posture necessary to back up the hard work of our diplomats and demonstrate our resolve in leadership all over the world, alongside our allies and partners.

I know that Afghanistan remains at the top of all of our minds, and today I can report that the retrograde remains on pace. We have accomplished the mission for which our troops were sent to Afghanistan 20 years ago, and I am very proud of the men and women who made it possible and of those who gave their lives for this mission. I am also deeply grateful to the families of our servicemembers who have endured as much, as they sent their sons and daughters and husbands and wives into battle.

We will now transition to a new bilateral relationship with our Afghan partners, one that continues to help them meet their responsibilities to their citizens, but one that will not require a

United States footprint larger than what is necessary to protect our diplomats. That is one reason why we are asking to move overseas contingency operations funding inside the budget. This will give us and you greater transparency, accountability, and predictability in the budgeting process. This is the right thing to do, and frankly, it is overdue.

Now taking care of our people is also the right thing to do. Our budget request increases funding to support in- home care and support, which has become increasingly important during the pandemic. We will also be seeking funds to improve military base pay, retention bonuses, and other incentives that will help us attract and retain the best talent, and we will be working hard to combat challenges that make service in the ranks more difficult for the men and women of the Department, from getting a better handle on the extent to which we experience extremist behavior to combating sexual assault and harassment.

As you know, my first directive as Secretary of Defense, issued on my first full day in the office, was to Service leadership about sexual assault. I made it clear then, and I still believe that we must not be afraid to try new approaches and to change our minds so that we can truly and fully address the scourge of sexual assault in our force. Clearly what we have been doing has not been working, and one assault is too many. The numbers of sexual assaults are still too high, and the confidence in our system is still too low.

The Independent Review Commission that we established has provided me with an initial set of recommendations, starting around the issue of accountability, and this line of effort is focused on how these crimes are investigated and prosecuted. I shared these recommendations with General Milley and the civilian military leaders of the Service branches, and I am carefully reviewing the feedback that they provided me.

There will be additional recommendations coming to us from the IRC on prevention, culture, and victim support, and I look forward to receiving them as well, and making my full recommendation to the President later this month. As I have said before, what we are doing is not working, and we need to fix it. I want to be sure that whatever changes to the Uniform Code of Military Justice (UCMJ) that I recommend to the President, and ultimately to this Committee, that they are scoped to the problem that we are trying to solve and have a clear way forward on implementation and ultimately restore the confidence of the force and the system. You have my commitment to that and my commitment to working expeditiously as you consider legislative proposals. So whatever changes we make, I believe we need to focus on effective implementation and resourcing, and I know I will need your help.

Chairman Reed, Members of this Committee, we field the greatest military in human history, made up of the finest men and women who have ever donned the cloth of their nation. We also enjoy a civilian workforce deeply committed to every mission that they take on, and for all the things that we know we need to do better, no adversary can match the quality of our people. I am immensely proud of them and humbled to be of service to them, and privileged to be able to serve again with them and their families. I know the values they espouse and the oath that they took, I know

what they are capable of, and I believe I have a very good sense of what they need to do their jobs, and I can assure you that President's Budget request for fiscal year 2022 fulfills that obligation.

I look forward to answering your questions, and thank you for the steadfast support that you continue to provide to the Department of Defense, and for all the efforts that you make very day to ensure that we remain ready to defend this nation. Thank you, sir.

[The prepared statement of Secretary Austin follows:]

PREPARED STATEMENT BY SECRETARY OF DEFENSE LLOYD J. AUSTIN III

INTRODUCTION

Chairman Reed, Ranking Member Inhofe, distinguished Members of the Committee: thank you for the opportunity to testify in support of the President's Budget request for fiscal year 2022.

On behalf of myself, Deputy Secretary Hicks, the leadership of the Department of Defense, and the men and women of our Department and their families, let me also thank you for your continued support and partnership as we work to address the threats facing the United States of America today, and build the force that can address the challenges of tomorrow. I also want to thank the Chairman of the Joint Chiefs of Staff, General Mark Milley, who is testifying alongside me and is a critical partner in realizing the Department's priorities. I am also pleased to be joined by our Comptroller and Chief Financial Officer, Mr. Mike McCord.

The President's $715 billion defense budget request for fiscal year 2022 provides us with the capabilities we need most and drives investment in efforts that will help us advance our three key priorities: *defending the Nation, taking care of our people, and succeeding through teamwork.*

Today, the Department of Defense stands ready to deter conflict in any domain and, if necessary, to fight and win against any challenger. Since becoming Secretary of Defense, I have met with many of our service members and commanders in the field and have seen first-hand the dedication of the men and women of our Department. I can assure you that we continue to have the best joint fighting force on Earth and a civilian workforce fully dedicated to the many critical missions we face.

We must maintain and improve this advantage on land, at sea, in the air, and in emerging domains, including space and cyberspace. I am confident that the President's budget request helps us do that. The request is driven by our recognition that our competitors—especially China—continue to advance their capabilities. We must outpace those advances to remain a credible deterrent to conflict around the world.

The President's Budget Request represents my commitment to matching resources to strategy, strategy to policies, and policies to the will of the American people. This budget also reflects difficult funding decisions necessary to ensure that we have the right mix of capabilities that we need most. We have proposed cuts to systems and capabilities that no longer meet the challenges and requirements of the Department, making room for more advanced programs that do. In making these decisions, we were guided by the President's Interim National Security Strategic Guidance and informed by a set of program reviews conducted by the Department early in this Administration.

We are also undertaking a series of strategic reviews in the Department to ensure that our global force posture, and our nuclear and missile defense capabilities, are matched with the challenges that we face and aligned with the priorities of the President. The Global Posture Review will help inform my advice to the Commander-in-Chief about how best to allocate our forces around the world to advance our national interests, and our nuclear and missile defense reviews will consider how we maintain our deterrent and defensive capabilities, within and across domains.

I take very seriously the importance of being good stewards of taxpayer dollars and ensuring that we are transparent and honest with the American people about how their money is spent. This year, the President's budget consolidates the Overseas Contingency Operations funding and the base budget, raising transparency of direct war costs to a level not seen in several years.

We are also working to address our audit responsibilities as quickly and effectively as possible and move forward on reform to our business operations. This is not just about finding and reapplying savings to higher priorities, it is about improving organizational performance and efficiency. The best advocates for reform are those closest to the issues, so we will hold leaders appropriately accountable for a

management improvement agenda within their respective components. Reform also requires a holistic approach—including concepts of operation, organizations, personnel, training, and modern systems—and must have a seat at the table in our deliberations over Department programs and priorities.

The fiscal year 2022 budget also reflects the President's decision to retrograde in Afghanistan, following 20 years of war in that theater. We are profoundly grateful to our uniformed service members and their families, and to our civilian workforce, who have served and sacrificed so much through combat deployments in the defense of our Nation since the attacks on the United States on September 11, 2001. We are now engaged in a deliberate, safe, and orderly withdrawal from Afghanistan following the President's decision.

Moving forward, we must continue to engage in a concerted effort to recruit, retain, and develop the finest talent available for the uniformed and civilian workforce, providing quality opportunities for personal and professional growth, advancement, and leadership to those in our charge.

We owe it to them to build an environment that is safe, welcoming, and free of fear, harassment, or violence. That is why I have focused some of my earliest efforts on addressing sexual assault and harassment in the Department, identifying and addressing extremist behavior in the ranks, and ensuring that everyone is given a fair and equitable opportunity to serve this country.

But we cannot do this work alone. Whether it is defending the Nation, building a force of the future, growing our talent, or building an environment welcoming to all, we rely on teamwork that starts at the senior-most levels of the Department, filters down into our workforce, and extends across departments to our relationships with interagency colleagues, Congress, and our allies and partners.

When called upon to protect and defend our Nation, the Department of Defense will always answer, but diplomacy must be our first national security tool of choice. That is why the President's Fiscal Year 2022 Budget helps fund a Department of Defense able to credibly back up the hard work of our diplomats through our deterrent capabilities and our force posture.

As we look outward to our global security interests, we are focused on strengthening our relationships with our allies and partners. The investments in this budget demonstrate that the United States will continue to be a key guarantor of the peace, security, and the rules-based world order that we have helped foster for the past seven decades.

The fiscal year 2022 budget request ensures that we will remain the best-trained and best-equipped military in the world and will have the resources to defend the Nation, with the confidence to advance our priorities and build and sustain the force we need now and in the years ahead.

DEFENDING THE NATION

As the President has noted, the country finds itself at an inflection point. The rapid pace of development of capabilities by our competitors, and the changing character of conflict that comes with it, mean that we can no longer do things the way we always have and sustain our military edge.

China has invested heavily in new technologies, with a stated intent to complete the modernization of its forces by 2035 and to field a "world-class military" by 2049. Russia has shown that it is not afraid to target the United States in contested domains like cyberspace and still shows a continued interest in regional hegemony. Iran continues to advance its nuclear and ballistic missile programs and to support destabilizing proxy groups in the Middle East in an effort to threaten its regional neighbors. We also face challenges from North Korea, a country with the ambition to be capable of striking the United States Homeland.

We will continue to address violent extremist and transnational criminal organizations active in several theaters and to face unexpected but challenging tests of our resolve like the deadly spread of COVID–19. Climate change is a growing challenge, the effects of which are driving regional conflicts and instability, even as extreme weather caused by a changing planet threatens installations and readiness.

As the character of conflict and competition changes and accelerates, our strategic competitors have watched our efforts in warzones over the last two decades, seeking to understand not only our capabilities but also our will to defend our interests abroad. They are watching us and learning from us.

I have asked the Department to think through our capabilities and operational concepts and how we use cyber, space, and nuclear capabilities to create a more credible and resilient deterrent against our competitors, including China. What I have in mind are ways we can better use the capabilities we already have, including

by integrating across domains, and determining the capabilities we need to address potential future conflict.

This means investing in cutting edge technologies like artificial intelligence and quantum computing. It also means ensuring that if an adversary attacks one system or domain—in cyberspace or Global Positioning System (GPS) satellites, for example—we are able and ready to respond through appropriate and separate means in other domains, as necessary.

This is going to take a culture shift in the Department because it requires working across Military Services, domains, and regions in a way that we have not done before. It also requires deeper integration with our allies and partners, ensuring that their capabilities add value in deterrence and in conflict.

The fiscal year 2022 budget request will help us achieve this new vision of 21st-century deterrence, and we look forward to your support and partnership to help get it right.

Regional Challenges

In the Indo-Pacific region, we are facing an increasingly assertive People's Republic of China (PRC). Beijing's regional ambitions have grown, as has its footprint around the world, drawing on significant economic influence to encourage and, in some cases, coerce countries into a deepening relationship with the PRC.

But China's ambitions are not only economic. It seeks to use its influence to shift rules and norms in the region, erode democratic values and human rights, and challenge a free and open Indo-Pacific region. The President's Interim National Security Strategic Guidance identifies China as the only global competitor capable of combining its economic, diplomatic, military, and technological power to mount a sustained challenge to the international order.

As the Department of Defense, our responsibility is to protect and defend our interests in the Indo-Pacific region and to assure our allies and partners of our commitment to our shared goals. That requires keeping pace with the rapid military modernization of the People's Liberation Army (PLA) and remaining sighted on the PLA's advancements in the South and East China Seas, the Second Island Chain, and beyond.

That is why I established the China Task Force early in my tenure. The Task Force's mandate was to conduct a baseline assessment of Department policies, programs, and processes on China-related matters so that we might better meet the challenge posed by the PRC. The Task Force has now completed its work. Based on its recommendations, yesterday I issued internal guidance initiating major Department-wide efforts to address China as the United States' number one pacing challenge.

Even as we address China's growing military capability, we will remain focused on North Korea. Pyongyang continues to develop its nuclear and ballistic missile programs, posing an increasing threat to regional allies and partners and with ambitions to be able to strike the United States homeland. Leading with diplomacy, the United States will continue to work to mitigate North Korea's destabilizing and provocative behavior and maintain peace and stability on the Korean Peninsula.

In Europe, I am focused on strengthening our relationships with our allies and partners, bilaterally and in NATO. The Department will ensure that we are postured to deter aggression from Russia or any other power that seeks to challenge us in the region. Our alliance with NATO remains ironclad, and our allies remain a force multiplier for U.S. security around the world. We are encouraged that NATO defense spending has increased for the seventh straight year, demonstrating their commitment to the strength of the alliance. The fiscal year 2022 budget supports efforts to grow the capability and capacity of our allies.

Over the past 20 years, much of our effort as a Department has been focused on the threat posed by violent extremist organizations operating out of parts of the Middle East and South Asia. We remain committed to ensuring that no one launches an attack on the U.S. homeland, and we will maintain the capability to protect the United States and our interests in the region. That includes countering the Islamic State of Iraq and Syria, al Qaeda, and associated terrorist networks that pose ongoing threats to the United States.

Meanwhile, Iran remains a destabilizing force as it seeks to advance its nuclear and ballistic missile programs, threaten freedom of navigation, and support proxy terrorist and militia groups. We will continue to maintain the capability to deter Iran in the Middle East. We will also continue to support our partners in the region, including by helping to ensure that Israel has the capability to defend itself effectively and maintain its qualitative military edge.

In Afghanistan, the Department is working to conduct a deliberate, orderly, and safe withdrawal, as directed by the President. This is an important step in respon-

sibly ending this two-decade-long conflict, and it offers us an opportunity to redirect our resources toward strategic competition.

In Africa, the Department is focused on sustaining and improving the capabilities of our partners, particularly as we deter and disrupt terrorist attacks by al-Shabaab. The group remains an active threat to Somalis, their neighbors, our interests in Africa, and those of our allies and partners. Our partner-centric strategy has always been at the core of our counterterrorism mission, and we will continue to help regional partners strengthen their capabilities to counter shared threats. This is critical to stability and the opportunity for political and economic development in East Africa.

To the north, the Department remains committed to preserving a free and open Arctic region, which is why we undertake annual Arctic exercises and operations, including with allies and partners, such as ARCTIC EDGE, ICEX, and NORTHERN EDGE. These exercises provide valuable experience and offer important lessons learned for conducting multi-domain operations in the High North.

In the western hemisphere, our competitors seek to gain a foothold through economic and security investment and cooperation. We remain focused on building partner capacity and capability to ensure that the United States remains the partner of choice and to address transnational criminal and terrorist networks active in the region.

Additionally, the Department supports interagency efforts to address the migration crisis. Although other departments and agencies appropriately lead efforts to respond to this challenge, DOD supports partner nations in addressing the security-related aspects of the root causes of migration. This includes providing limited humanitarian and medical assistance and participating in engagements to strengthen the professionalism of Central American militaries and defense institutions.

Here in the United States, our men and women in uniform have supported our critical domestic missions. National Guard personnel provide support to our fellow Americans, including at Federal Emergency Management Agency (FEMA) mass vaccination sites. National Guard personnel have also helped secure our national Capitol at various times over the past year, and thousands more have helped secure State capitals across the United States at the direction of State officials. We also continue to support law enforcement operations on our southern border by providing limited enabling capabilities. At the request of the Department of Health and Human Services, we are supporting its mission to shelter unaccompanied migrant children arriving at the border.

COVID–19

Tackling COVID–19 has been one of my highest and most urgent priorities. Since I became Secretary of Defense, the Department has received almost 500 FEMA mission assignments and more than 65 requests for assistance from other Federal departments and agencies. As of June 10, more than 4,700 Active Duty service members have deployed to 34 community vaccination centers in 28 States and territories. Additionally, more than 32,000 National Guard personnel have deployed, carrying out FEMA mission assignments issued to DOD to assist their local communities.

In total, the Department has administered more than 17 million vaccine doses to the American people, with some 4.9 million delivered by Active Duty personnel and 12.2 million supported by the National Guard. Within the Department, we have executed one of the most complex vaccination programs in the world, vaccinating millions of service members, beneficiaries, and Department personnel in 42 countries, including multiple combat zones. Internally, the Department has protected its force and families by administering over 3.6 million vaccinations.

We are also making investments in the Defense Health Agency to ensure that we have the resources needed for public-health surveillance and force protection. We continue to review and update our force health protection policies, and even as vaccinations increase, we remain committed to testing, which will expand our genomic sequencing efforts so that we can track variants and declining immunity.

I am tremendously proud of our men and women in uniform who stepped up to join our whole-of-nation response. But this will not be the last time our Nation and our world will face such a challenge. That is why our budget request also funds programs that support biological threat reduction, in cooperation with our global partners, emerging infectious-disease surveillance, biosafety and biosecurity, and medical countermeasure research and development.

Climate Change

We face a grave and growing climate crisis that is threatening our missions, plans, and capabilities. From increasing competition in the Arctic to mass migration

in Africa and Central America, climate change is contributing to instability and driving us to new missions.

At the same time, increasingly frequent extreme weather events degrade force readiness and drain resources. Recent DOD budgets have been forced to absorb recovery costs at battered bases such as Naval Air Station Pensacola, among others. Our military installations, and the mission-critical capabilities they support, must be made resilient to climate-induced extreme weather.

Our mission objectives are aligned with our climate goals. The Department is investing in projects and capabilities that mitigate the impacts of climate change while improving the resilience of our facilities and operations to a range of threats. Our budget request also invests in initiatives to reduce operational energy demand to enhance capability, improve freedom of action in contested logistical environments, and reduce costs. Those investments are good for the climate, and they are critical for the mission.

Additionally, this budget invests in power and energy research and development to improve installation and platform energy performance and optimize military capability. The Department can help lead by leveraging its buying power to deploy technologies such as energy storage and microgrids that support the mission while protecting the climate.

The Climate Working Group is coordinating the Department's work implementing the President's Executive Order on this crisis and building up climate expertise within DOD. It will also track the implementation of climate- and energy-related actions and progress toward future goals.

Modernization and Innovation

One of our chief priorities is to drive innovation across the Department and modernize our culture, people, systems, and processes to meet our future needs. It is critical to nearly everything we do. Even as we develop new capabilities, we will always adhere to our international humanitarian law obligations in the use of new weapons of war, as well as ensure the protection of civilians in all missions.

This budget supports our efforts to:

- Modernize the nuclear Triad to maintain a strong and effective strategic deterrent;
- Make critical investments in advanced technologies such as microelectronics, fifth-generation network (5G), and artificial intelligence (AI);
- Ensure access to precursors and key inputs by shoring up our critical supply chains;
- Accelerate investments in cutting-edge capabilities that will define the future fight, such as hypersonics and long-range fires; and
- Advance our joint warfighting concepts and commit to rapid experimentation and the fielding of emergent capabilities across warfighting domains.

The nuclear Triad remains the bedrock of our national defense and strategic deterrence, ensuring that no adversary believes it can employ nuclear weapons against the United States or our allies without risking devastating consequences.

But we must modernize our aging capabilities to ensure a credible deterrent for the future. As we do, we will review ongoing programs to assess their performance, schedule, risks, and projected costs. The fiscal year 2022 budget invests in nuclear modernization efforts, and the Department will always seek to balance the best capability with the most cost-effective solution. We are also launching a nuclear posture review to ensure that we have the right capabilities matched with the national nuclear strategy.

Microelectronics enable many of today's capabilities, such as GPS, radar, command and control, and communications. Advanced microelectronics are key to nearly all of the Department's modernization efforts, from AI and hypersonic weapons systems to 5G wireless networks. The Department will continue to invest in programs to secure U.S. microelectronics interests; reverse the erosion of domestic innovation and supply; and establish a strong foundation for the next generation of microelectronics technology for DOD applications, while also sustaining current systems.

The U.S. military must also utilize the connectivity provided by 5G to operate with the speed, precision, and efficiency required in the future. Countries that master advanced communications technologies and connectivity will have long-term military advantages; for example, tomorrow's warfighters will be able to use local and expeditionary 5G networks to move considerable amounts of data to connect distant sensors and weapons into a dense, resilient battlefield network.

Similarly, the power of AI will help us modernize not only our warfighting decisions but also our business processes. We must be able to ingest, make sense of, and act on the vast amounts of information available to our warfighters on the battlefield and our decision-makers leading our Department. As I have said, we must

understand faster, decide faster, and act faster. We must do it all responsibly and at scale.

To support many of these efforts, we recently launched the Innovation Steering Group. This entity, chaired by the Under Secretary of Defense for Research and Engineering, will advise me on science, technology, and technological transition. It will also empower efforts to make the changes to incentives, processes, and structures needed to truly innovate.

However, our efforts are not just focused on buying the capabilities of the future. We must fundamentally shift the way we think and the way we do business. We have not yet made full use of our most agile acquisition authorities, and we remain too risk-averse as a Department to move decisively beyond the capabilities of today and prepare for the future.

We also remain too reliant on critical minerals produced in or by China. To shore up our critical supply chains, we must focus on building our domestic production capabilities and growing our defense industrial base. That is why I am establishing the Supply Chain Risk Management Group, which will complement the work of the Industrial Base Council, both of which are chaired by the Under Secretary of Defense for Acquisition and Sustainment.

Tomorrow's conflicts will be contests of speed within and across domains of conflict. The President's budget request invests in the development and testing of hypersonic strike capabilities, while enhancing existing long-range strike weapons to bolster deterrence and improve survivability and response timelines. Long-range fires provide key offensive capabilities that are cost-effective and improve deterrence. By enabling power projection from standoff ranges, the risk to critical U.S. assets decreases while the defensive burden imposed on the enemy increases.

The Department is also focused on developing enhanced joint warfighting concepts; expanding experimentation and fielding; shifting our budget and investment priorities to incentivize innovation; and improving acquisition systems while making use of more flexible ones to identify and deliver new capabilities at scale. These efforts will help build a force that is more resilient and integrated and that ensures decision advantage across all domains.

Domain Challenges

On land, the Army continues to invest in its six modernization priorities: long-range precision fires, future vertical lift, next-generation combat vehicle, air and missile defense, the network, and soldier lethality. To sustain the required funding levels for the development and procurement of next-generation capabilities, the Army reduced resources for several platforms as well as missiles, munitions, and conventional ammunition.

At sea, delivering all-domain naval power that can defend the homeland, deter adversaries, control the seas, and project power ashore in a conflict requires the Navy to balance current operational demands with the need for modernization. Maintaining naval power is critical to reassuring allies and signaling

U.S. resolve to potential adversaries. The budget request proposes responsible investments in the Navy fleet. It also continues the recapitalization of our strategic ballistic-missile submarine fleet and invests in remotely-operated and autonomous systems and the next-generation attack submarine program.

We also seek to divest of some platforms that do not contribute effectively to power-projection needs. The fiscal year 2022 request reflects a strong commitment to continued U.S. naval dominance, including a properly sized and well-positioned defense industrial base. The health of the defense industrial base continues to be fundamental to achieving and sustaining our future fleet. Our shipbuilding and supporting vendor base constitute a national security imperative that must be steadily supported and grown to maintain a skilled workforce.

In the air domain, the Air Force will shift away from certain platforms in favor of key weapons systems such as the F–35 Joint Strike Fighter, the F–15EX Eagle II, and the Next Generation Air Dominance aircraft to bolster the Air Force's ability to provide air superiority. Meanwhile, we will drive down sustainment costs, the fleet's average age, and inherent risk. At all times, we will work to ensure rigorous oversight of maintenance costs of the F–35.

Additionally, Air Force investments in hypersonics, the Long-Range Standoff Weapon, the B–21 Raider, and the Ground-Based Strategic Deterrent will allow the Department to conduct global strike operations with precise conventional and unconventional capabilities, delivered from both standoff capabilities and penetrating platforms. Meanwhile, the Navy is developing the "Air Wing of the Future" to deliver game-changing lethality and survivability. These efforts include transforming Carrier Air Wings with the addition of the F–35C, E–2D, and CMV–22B aircraft and rapidly developing the MQ–25 Stingray.

Unfettered access to space and the freedom to maneuver there enhances every aspect of American power and underwrites the design of the joint force. Competitors including China and Russia are seeking to challenge the United States' advantage in space by developing weapons to deny or destroy U.S. space capabilities in conflict. The fiscal year 2022 budget request strengthens our ability to deliver flexible capabilities and strategic options swiftly to outpace emerging threats in space.

Priority areas in this budget include investment in a resilient architecture of capabilities for missile warning and missile tracking; modernization of all segments of GPS to ensure precision and availability; development of cyber-resilient space command-and-control capabilities that can integrate with Joint All-Domain Command and Control; and investment in a broader base of domestic launch providers to further ensure our access to space.

In cyberspace, the United States is facing increasingly aggressive activity, including strategic campaigns by competitors, other nation-states, and proxies seeking to undermine our national security and democracy. The fiscal year 2022 budget invests in cybersecurity and cyberspace activities that build on the goals in DOD's Cyber Strategy. The Cyber Operations portion of the budget supports U.S. Cyber Command's operational element, the Cyber Mission Force, which performs cyberspace operations to defend the Nation, support the joint force, and secure DOD infrastructure and networks.

The budget also enhances our cybersecurity by mitigating key cyber deficiencies and strengthening our defensive capabilities to counter malicious attempts to exploit U.S. technology. Ultimately, we seek to improve joint force offensive capabilities to stay ahead of foreign threats.

TAKING CARE OF OUR PEOPLE

The dedicated men and women who make up the Department of Defense are the greatest strength and asset we have. That is why I have prioritized growing our talent, building resilience and readiness in the force, and ensuring appropriately accountable leadership as we address tough workforce issues.

The fiscal year 2022 budget request prioritizes improvements to recruiting, retention, training, and education, and support for military spouses, caregivers, survivors, and dependents. We are also intensely focused on ending sexual assault and harassment and identifying and addressing extremist behavior in the Department, two of my top priorities.

We have established the Deputy's Workforce Council, a senior-level governance forum co-chaired by the Deputy Secretary of Defense and the Vice Chairman of the Joint Chiefs of Staff, which is dedicated to addressing the most pressing people management, personnel policy, and total force requirements. This includes issues such as diversity, equity, and inclusion; military healthcare and childcare; sexual assault prevention and response; and more. This forum will ensure that workforce issues remain a critical priority for Department leadership, including the Secretaries of the Military Departments and our commanders, and will help bring the same vision and disciplined execution to workforce issues that the Department devotes to weapons systems and budgeting.

Growing Our Talent

We accomplish our mission far better when we look to the full range of talent that the United States has to offer. That means drawing on a diversity of experiences and backgrounds, which will help drive creative thinking and adaptation, innovation, and cultural understanding. These will be vital to meet the complex challenges of today and the future.

Longstanding, systemic barriers for historically marginalized and underrepresented communities persist today. We must do all we can to ensure that we recruit and retain talent from the broadest pool of qualified, eligible candidates.

This spring, we updated the Department's policy on the open service of transgender people in the military. We welcome the recruitment, retention, and care of all qualified transgender individuals, and we look forward to their continued service with honor and dignity. The new policy reinforces that principle and also allows for a short implementation period for the Military Departments and Services to update their policies.

We also must continually grow and develop our workforce and create new avenues for advancement to drive the promotion and retention of our outstanding next-generation leaders. That requires thinking about our critical skill sets with an eye to the future, in particular by recruiting and training individuals in Science, Technology, Engineering, Math, and advanced technologies.

Building Resilience and Readiness

In building a resilient and ready force, we must recognize the key role that our military families play in supporting our personnel. The health and well-being of our service members and their families are inextricably linked to the readiness of our force, and we must do all we can to take care of them.

The effects of COVID–19 have been especially tough for our military families, putting a particular strain on those who have lost childcare or civilian employment. The fiscal year 2022 budget expands our efforts to provide high-quality childcare to our military families, and we continue to provide virtual career support through Military OneSource.

The budget also addresses efforts related to our military electronic health records, through which the Department is working to implement needed modernization most effectively. We must get military healthcare right for our service members and their families.

We will also remain focused on addressing suicide and mental health issues in our joint force by enhancing services and support while seeking to reduce the stigma around seeking help.

Ensuring Appropriately Accountable Leadership

We must provide our workforce with a safe, secure, and welcoming environment that empowers them to do their best work and grow personally and professionally. At the most basic level, that means creating a workplace free of discrimination, hate, and harassment. It also means guaranteeing swift and clear accountability to anyone who does not live up to the highest standards of the Department.

Sexual assault and harassment have no place in our country and no place in the Department of Defense. For too long, the Department's leadership has tried to get a handle on this challenge, but we have not made significant progress. One case of sexual assault or harassment is too many, and we are losing the confidence of our junior enlisted personnel and officers because we have yet to make significant progress against this challenge.

That is why, at the direction of the President, I established a 90-day Independent Review Commission (IRC) on sexual assault in the military. The IRC is responsible for reviewing DOD policies and processes related to sexual assault and harassment to determine where we can improve as a Department.

The IRC will soon complete its work on all four lines of effort—accountability, prevention, climate and culture, and victim care and support. I recently received an initial set of recommendations from the IRC Chair and provided the Department the opportunity to review those recommendations. It is critically important that we get this right, and I am grateful for congressional partnership as we seek to do that.

The vast majority of those who serve in uniform and their civilian colleagues do so with great honor and integrity. But extremism in our ranks can have an outsized impact on the Department, which will not be tolerated. The Department is focused on rooting out extremist behavior, and this fight is about our values, the Constitution, and the obligations in the Oath of Office we swear to uphold.

Behavior that defies or degrades our core values erodes unit cohesion as well as good order and discipline. It can also damage the health, morale, and readiness of the workforce.

I have moved immediately to meet this problem head-on. On February 5, I directed that within 60 days, commanding officers and supervisors at all levels conduct a one-day extremism stand-down to emphasize the importance of the Oath of Office we take, and to give military members and civilian employees the opportunity to participate in and continue to have this important conversation.

On April 9, I further directed several immediate actions to combat extremism, including reviews of what constitutes extremist activity, training for transitioning service members who may be targeted by extremist groups, and establishing the Countering Extremism Working Group to develop long-term recommendations to ensure all those who serve do so with honor and fealty to our values and our democracy. This must be a sustained effort, embraced by Department leadership.

SUCCEEDING THROUGH TEAMWORK

To accomplish anything we set out to do, the Department must operate as a unified team. That requires that we build unity among our leadership and ensure the right balance of civilian and military inputs to our decision-making and Department processes. In the last four months, we have made significant progress in rebuilding normal order in the Department to safeguard civilian oversight of the military.

In particular, we have established several bodies aimed at supporting the efforts of our Deputy's Management Action Group, the Department's principal governance

body for management actions, including resource management and planning, programming, budgeting, and execution.

We have also established the Deputy's Workforce Council to address the Department's people management, personnel policy, and total force requirements, and task forces and working groups on COVID–19, China, climate change, and extremism.

Protecting the United States requires teamwork at every level: state, local, tribal, territorial, and federal. It requires cooperation with all who have a stake in our national security, including Congress, private industry, civil society, and the American people.

Our work to combat COVID–19 is a prime example of our commitment to working with our fellow Americans. Across the Executive Branch, DOD has worked closely with the Department of Homeland Security, including FEMA, the Department of Health and Human Services, and the State Department in efforts to end the pandemic. We are also investing in the defense industrial base to produce more personal protective equipment and test kits. Across the Nation, we continue to work closely with the Department of Health and Human Services and State, local, tribal and territorial authorities to bring life-saving vaccines to the American people. At all times, our support to the Nation is reliant on our partnership with Congress, which plays an integral role in providing the authorities, appropriations, and leadership necessary to have the most effective Department of Defense.

As part of our efforts to build teamwork into all we do, and in line with the President's intent, we are also leading with diplomacy, our first national security tool of choice. I am committed to ensuring that the Department of Defense continues to field a credible force able to back up the hard work of our diplomats around the world. We are working in lock-step with the State Department and other departments and agencies, and I took my first trip as Secretary of Defense with Secretary Blinken to reassure our allies and partners in the Indo-Pacific region that this Administration is committed to our relationships there. Secretary Blinken and I also traveled to Europe to assure our allies and partners of our commitment to the region.

When I traveled to NATO Headquarters earlier this spring, I shared a key message: we must consult together, decide together, and act together. Global crises, such as the pandemic, climate change, and economic downturns, present significant dangers that span our borders. In many countries, internal strife, brought on by corruption, inequality and polarization, and transnational threats, such as violent extremism and criminal organizations, threaten stability around the alliance's rim. In Afghanistan, we went in together and we will leave together, after a substantial consultative effort. Meanwhile, aggressive and coercive behaviors from emboldened strategic competitors such as China and Russia reinforce the importance of collective security.

CONCLUSION

The challenges we face are many, but the Department stands ready to defend the United States against any enemy, foreign or domestic, just as we always have. We remain resolute in our commitment to protect the Nation and will not shy away from any challenge.

The fiscal year 2022 budget will help us fulfill that responsibility, and we are grateful for your support in working with us as we build the Department of the future. We need your help.

We also remain grateful for the tremendous trust that the United States places in our soldiers, sailors, airmen, marines, guardians, and DOD civilian employees, all of whom will continue to defend our democracy, our people, and our way of life. Thanks to them, we will always operate from a position of strength. Thank you.

Chairman REED. Thank you very much, Mr. Secretary. Before I recognize General Milley, since a quorum is present I would ask the Committee to consider seven nominations, the nominations of the Honorable Frank Kendall III to be Secretary of the Air Force; the Honorable Heidi Shyu to be Under Secretary of Defense for Research and Engineering; Ms. Susanna V. Blume to be the Director of Cost Assessment and Program Evaluation, Department of Defense; Ms. Jill M. Hruby to be Under Secretary of Energy for Nuclear Security and Administrator, National Nuclear Security Administration; Mr. Frank A. Rose to be Principal Deputy Administrator, National Nuclear Security Administration; Ms. Deborah G.

Rosenblum to be Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs; and Mr. Christopher P. Maier to be Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict.

Is there a motion to favorably report these seven nominations to the Senate?

Senator INHOFE. So moved.

Chairman REED. Is there a second?

Senator KAINE. Second.

Chairman REED. All in favor?

[Chorus of ayes.]

Chairman REED. The motion carries. Thank you very much.

General Milley, your comments, please.

STATEMENT OF GENERAL MARK A. MILLEY, USA, CHAIRMAN OF THE JOINT CHIEFS OF STAFF

General MILLEY. Chairman Reed, Ranking Member Inhofe, distinguished Members of the Committee, thank you for the opportunity to testify before you today, and it remains my distinct honor and privilege to represent the soldiers, sailors, airmen, marines, and guardians of the United States Joint Force, the most capable military in the world. Our troops are the best led, best equipped, and best trained force anywhere. I want to personally thank Secretary Austin for his steady leadership and wise guidance.

Your Joint Force is standing watch, protecting American interests in all domains around the globe. Alongside our allies and partners, American troops are currently training or conducting combat operations or other operations in 165 countries to keep America safe. We are conducting major exercises as we speak in Europe; we are monitoring the demilitarized zone (DMZ) in Korea; we are conducting freedom of navigation operations in the strategic waterways of the global commons; we are sustaining operations in space, in cyberspace; we are supporting our allies and partners in Africa, Asia, and Europe; and we are patrolling the skies of the Middle East, and as we speak our Joint Force is conducting a safe, responsible, and deliberate strategic retrograde from Afghanistan in good order, while ensuring continued support to the Afghan National Security Forces.

The purpose of the United States military is simple. It is to protect and defend the Constitution of the United States of America against all enemies, foreign and domestic, and with that comes two key tasks. Task one is to fight and win America's wars, if necessary, and key task two is to prepare to fight and win America's wars.

The United States military is a critical component of national power, which in concert with our diplomatic efforts, economic engine, and overriding hope of the American message that will deter adversaries and preserve the peace. We are prepared to fight, however, and fight and win, if those who seek to attack the United States and our allies and partners are undeterred. But force must always be a last resort when other means of achieving our ends have been exhausted.

We are in an era of increased strategic competition. The current strategic landscape is witnessing rapid change, and the potential

for increased threat to the peace and stability of various regions, and indeed, for the world. States and non-state actors are rapidly transforming technologically, and we are bearing witness to a fundamental change in the character of war. In particular, China is increasing its military capability at a very serious and sustained rate, and we must ensure that we retain our competitive and technological edge against this pacing threat, as Secretary Austin has directed.

Readiness, modernization, and combat power are key to deter war and maintain the peace, and equally important are the combat multipliers of teamwork, cohesion, and well-led units. We must resolve the issue of sexual assault and confront the issue of extremism. Both are corrosive to the very essence of what it means to be in the military, and they destroy cohesion, they destroy teamwork, and they reduce combat power.

Additionally, we must continue to invest in leader development and talent management required for the future operating environment. Finally, we must continue to nurture and sustain a key strategic source of our strength, which is our network of many close allies and partners around the world.

The Joint Force appreciates the work that our elected representatives do to ensure that we have the resources needed to train, equip, and man the force in order to be ready. The days of the Budget Control Act, as noted, are over, and repeated, continuing resolutions which eroded readiness are hopefully behind us for good.

The Joint Force will deliver modernization with this budget of our armed forces and security to the people of the United States at the fiscal year 2022 budget request of $715 billion. While it is a modest increase from the enacted fiscal year 2021 budget, it is a significant commitment of treasure that the American people have entrusted to us, and we will work diligently to ensure it is spent prudently and in the best interest of the Nation.

The Fiscal Year 2022 Presidential Budget is a result of very hard choices, in a year in which the Nation has suffered economic hardship due to COVID–19 pandemic. In alignment with the Interim National Security Strategic Guidance, this budget delivers a ready, agile, and capable Joint Force that will compete, deter, and win, across all domains, and which is postured for continue dominance in the future.

This budget prioritizes nuclear modernization, long-range fires, hypersonic technology, artificial intelligence, shipbuilding, microelectronics, space, cyber, and 5G. These investments, in concert with our recently developed joint warfighting concept will pave the way for a Joint Force of the future. The President's Budget 2022 budget request increases the readiness of the force by developing the Joint Force of the future, ensuring our people are our number one priority, and positioning us to achieve through teamwork.

Many enemies, historically, have grossly underestimated the United States and our people. They have underestimated our national resolve. They have underestimated our capability, our skill, and our combat power, and each, in the past, has made a fatal choice, which ended in their enrollment in the dustbin of history. The same will be true of any enemy that makes that mistake today

or tomorrow. We are ready now and will remain so in the future, and we are also facing tough strategic choices, and we are being increasingly challenged with very capable, potential adversaries clearly acting in opposition to our interests.

Consistent, predictable budgets, informed by the will of the people, are critical to our Nation's defense, and the passage of this budget in a timely way is important. The Fiscal Year 2022 Presidential Budget strikes an appropriate balance between preserving present readiness and future modernization. It is a down payment on investments for the future, with a bias toward the future operating environment.

It is now that we must set ourselves on a path to modernize the Joint Force, and this budget contributes to doing that. Our job, as your Joint Force, our contract with the American people, is that we, the United States military, will be able to fight and win when called upon. We will support and defend this Constitution always and forever, and I look forward to your questions.

[The prepared statement of General Milley follows:]

PREPARED STATEMENT BY GENERAL MARK A. MILLEY, USA

INTRODUCTION

It remains my distinct honor and privilege to represent the soldiers, sailors, airmen, marines and guardians of the United States Joint Forces-The most capable military in the world. Our troops are the best led, best equipped, and best trained force anywhere. Alongside our allies and partners, American soldiers, sailors, airmen, marines and guardians are currently standing watch in 165 countries and conducting operations that keep Americans safe.

The United States Military is a critical component of national power which in concert with our diplomatic efforts, economic engine and overriding hope of the American message deters our adversaries and preserves peace. We are prepared to fight and win if those who seek to attack the United States and our allies and partners are undeterred.

The Joint Force appreciates the work that our elected representatives do to ensure that we have the resources needed to train, equip, and man the force in order to be ready. The days of the Budget Control Act of 2011 and repeated continuing resolutions which eroded readiness are hopefully behind us for good.

The Joint Force will deliver modernization of our armed forces and security to the people of the United States at the fiscal year 2022 budget request of $715 billion. While it is a modest increase from the enacted fiscal year 2021 budget, it is a significant commitment of treasure that the people of the United States have entrusted to us and we will work diligently to ensure it is spent prudently in the best interest of the Nation. This fiscal year 2022 budget is the result of hard choices in a year in which the Nation has suffered economic hardship due to the COVID–19 pandemic. In alignment with the Interim National Security Strategic Guidance (INSSG) this budget delivers a ready, agile, and capable Joint Force that will compete, deter and win across all domains and which is postured for continued dominance in the future.

Consistent predictable budgets informed by the will of the American people are critical to our Nation's defense. The passage of timely budgets enables planning and prioritization.

STRATEGIC ENVIRONMENT

The current strategic landscape is witnessing rapid change and potential for increased threat to the peace and stability of various regions and for the world.

China: is our #1 geostrategic security challenge. History is not deterministic, war with China is not inevitable. China is clearly an increasingly capable strategic competitor and we need to keep our relationship at competition, not conflict. This is best done through integrated deterrence where the United States remains militarily strong relative to China and we retain military overmatch in all the various domains of war. If we remain militarily superior to our adversary, then conflict is less likely.

China is challenging the peaceful status quo in the Pacific, and is intent on revising the global international order by midcentury. China is conducting large-scale exercises in the region with an emphasis on amphibious landing, joint fires, and maritime strike scenarios. These actions threaten our allies and partners' autonomy, jeopardize freedom of navigation, overflight and other lawful uses of the sea, and compromise regional peace and stability. In short, China has and continues to develop significant nuclear, space, cyber, land, air, and maritime military capabilities.

Russia: retains a large nuclear capability to deter and threaten the United States and our allies and partners. Russia has also demonstrated the capability and will to conduct complex malicious cyber activities targeting American protected digital infrastructure, both military and commercial. Increasingly Russia uses irregular warfare and mercenary contract support, along with regular troops, to conduct aggressive operations, the most notable being illegal seizure of Ukraine's Crimean Peninsula and the ongoing conflict in eastern Ukraine. Its actions in Libya as well as Syria and elsewhere demonstrate Moscow's relative flexibility, resourcefulness, and opportunism.

North Korea: continues to enhance its ballistic missile capability and possesses the technical capacity to present a real danger to the US homeland as well as our allies and partners across the Indo-Pacific. They show no signs of moderation in their focus on military capability at the expense of their most vulnerable citizens and peace of the Korean Peninsula.

Iran: The current irregular warfare conflict between Iran and its neighbors threatens to push the Middle East into broader regional instability. Through its funding of terrorist activities, and a proxy army inside the borders of its neighbors, and through its ballistic missile programs, Iran seeks to revise the regional order and balance of power in Iran's favor.

Violent extremist organizations such as al Qaeda, ISIS, Al Shabaab, and others continue to export their terror, destruction, and destabilization. Until and unless the root causes of instability that give rise to these types of groups are resolved, we will continue to deal with their attacks to undermine legitimate governments worldwide. The root causes can only be effectively addressed by including governments of the region and we can best influence outcomes with diplomatic, economic, information and stability efforts along with train, advise, assist and intelligence sharing. Through coalition efforts and in concert with the local governments affected by these groups, we will continue to ensure they do not possess the capacity and capability to exert their will.

As we move into the middle of the twenty first century, it is imperative that we *maintain our technological advantage* over our competitors. As the diffusion of military technology permeates the globe, it will become increasingly difficult to maintain the advantage that we've enjoyed for last seven decades.

This year's budget will adequately fund our department priorities, with bias on the future while ensuring we continue to deter the adversaries of today. The character of warfare is changing in a fundamental way. How we fight, the weapons, doctrine, organizations and leader development are all undergoing a transformation not seen in scale and scope since the decades between World War I and World War II. The current rapid and radical change in technology along with its diffusive nature will provide decisive advantage to those nation states that best master the convergence and capability in precisions munitions, all domain sensors, all domain command and control, robotics, hypersonics and artificial intelligence. Our collective success or failure to adapt the United States military to this future as a Nation is an increasingly challenging security environment.

Climate change presents a growing threat to U.S. national security interests and defense objectives. The adverse impacts of climate change are already being felt across the Joint Force in terms of increased operational demands, adverse impacts on our installations and new requirements for equipment and formations able to operate in a world defined by climate change and as a contributing factor to regional instability.

As we enter the third quarter of this fiscal year, it is imperative that we *finish the fight against COVID–19.* The Joint Force has contributed planning and logistics expertise during all phases of the pandemic response and continues to assist with vaccination efforts. We will continue to be able to provide equipment, personnel, and vaccine deployment and development assistance when called upon to assist. We all should be very proud of the conduct of our Joint Force and our ability to continue to deploy and defend the interests of the United States during this unprecedented global event as the pandemic has only modestly impacted the Joint Force's readiness.

Our alliances and partnerships are key to maintaining the international rules-based order that offer the best opportunities for peace and prosperity for America

and the globe. This budget allows us to build our partners and allies capabilities, foster interoperability, and strengthen relationships. Doing so allows us, our allies, and partners to counter the coercion of our strategic competitors, the malign activity of regional threats, and meet the varied security challenges state and non-state actors, terrorism, climate change, and pandemics or any other threat that may emerge. We are stronger when we operate closely with our allies and partners.

READINESS AND MODERNIZATION

The Joint Force is in a position where modernization is an imperative. We must avoid the tyranny of the now at the expense of our future. The United States as a nation has always had the advantage and time to conduct a long build up prior to the beginning of hostilities. The operating environment of the future will likely not afford us the luxury of time to project force so having modernized forces in sufficient size and readiness will be the key to sustaining deterrence and maintaining the peace and if deterrence fails then fight and win.

The Interim National Security Strategic Guidance, National Defense Strategy, and National Military Strategy discuss the re-emergence of strategic competition and directs the Joint Force to develop the capabilities and capacity to counter near-peer threats. Strategic adversaries are accelerating military modernization; to maintain military advantage, the Joint Force must adapt to the future operating environment. It is imperative that we maintain US technological advantage over our adversaries and improve the concepts and doctrine which organize our conduct of warfare. In the fall of 2019, the Secretary of Defense tasked the Joint Staff to develop a threat-informed *Joint Warfighting Concept* (JWC) to address strategic conflict. The Joint Warfighting Concept will guide and revitalize how we organize, train, and equip the Joint Force. It will constantly evolve to help us shape our strategic environment and future operations. The JWC is a multi-year effort to develop a comprehensive approach for joint operations against future threats and provide a guide for future force design and development. Supporting concepts to the JWC describe key warfighting functions. They are fires, logistics, C2, and information advantage. The *Joint All Domain Command and Control (JADC2)* framework enables the holistic development and realization of the JWC and Supporting Concepts. JADC2 today is beginning to deliver the capability to sense, and act at speeds greater than our adversaries. JADC2 uses data, artificial intelligence, machine learning and predictive analytics to create decisive information advantage at all echelons in the Joint Force.

Utilizing cloud-based networks and agile software development, our modular open sourced systems will deliver the necessary strategic operational advantage required within both competition and conflict. Our JADC2 architecture is increasingly providing the attributes and interfaces to transition to a data-centric force able to operate at scale within multiple security levels and across all-domains and the electromagnetic spectrum.

We will also revise our leader development Joint Professional Military Education to support the JWC. Specifically, we are increasing the amount of JPME devoted to the study of the changing character of war and both China and Russia as potential adversaries.

In addition to adapting our concepts, doctrine, training, and military education, we must continue to invest in capabilities that close gaps or sustain our advantage. Key investments in this budget are *nuclear modernization, long range fires, hypersonic technology, shipbuilding, space and cyber.*

Nuclear modernization: The nuclear triad has been the bedrock of our strategic deterrent for decades. Together, the three legs of the Triad allow us to hedge against geopolitical, technological, operational and programmatic risks. Our Cold War era systems have been extended beyond their original service lives and we must recapitalize our nuclear enterprise. Modernization of our nuclear forces, weapons complex, and requisite nuclear command, control, and communications (NC3) capabilities are a high priority. The Department projects the cost of modernization will peak at 7 percent of the DOD budget in 2029 before decreasing again. If these projections bear out, compared to past modernization efforts, the cost would be significantly less as a proportion of the overall DOD budget—the nuclear recapitalization in the 1980s cost 10.6 percent at its peak and 17 percent in the early-1960s.

Long range fires: provide key offensive capabilities that are both cost-effective and cost-imposing means of improving deterrence. By enabling power projection from standoff ranges, the risk to critical U.S. assets decreases while the defensive burden imposed upon the enemy increases. China has thousands of ground-launched theater-range missiles in its arsenal that would be difficult for the United States to counter given its current inventories. Investments in long range missiles are a cost-

effective strategy that improves our ability to compete with China. Recent budget requests have enhanced the lethality and resilience of the Joint Force by developing and expanding the long-range fires portfolio. President's Budget 2022 funding is essential to mitigate offensive fires capacity shortcomings, enhance operational flexibility in multiple domains, and accelerate the transition of hypersonic weapons from development to procurement and fielding. President's Budget 2022 balances long-range fires investments between both proven solutions and higher risk/high-payoff systems, such as hypersonic fires.

Hypersonic technology: Hypersonics are a suite of capabilities that provide transformational warfighting capability to our Joint Force. Our competitors are investing in this capability and in order to provide our Joint Force with the best possible technology we will need to invest to defend the Nation, our allies and partners.

Legacy platform divestment: Continuing to purchase and maintain legacy equipment takes needed defense dollars away from the acquisition of systems that are needed for modernization. We need to divest select legacy platform to ensure that every defense dollar spent on programs and equipment that will be relevant in the next fight.

Shipbuilding: The industrial base continues to be the fundamental enabler for achieving and sustaining the Navy's future fleet. Our shipbuilding and supporting vendor base are a national security capability that needs support to grow and maintain a skilled workforce. The Fiscal Year 2022 President's Budget reflects the Administration's strong commitment to continued American naval dominance, including a properly sized and well-positioned industrial base to meet the demands of our current and future defense needs. Commitment to the steady acquisition profiles underlying our budget is key to ensure the industrial base achieves the capability and capacity required to build and maintain the Navy's future fleet. The conclusions from past force structure analyses have been fully considered and simple ship count is an incomplete metric, as it fails to fully capture the capability, payload capacity, and employment of ship classes in the fleet. This budget specifically procures warships and submarines with credible combat power to deter China while continuing remotely operated ship development and investing in the industrial base to support fleet modernization and on time delivery of the Columbia class submarine.

Space: Space is essential to our way of life; space capabilities are essential to our economy, quality of life, our exploration initiatives, and our ability to wage war. Competitors are testing and fielding space weapons that threaten not just our National interests and advancements in space, but those of all nations that rely upon space. Russia has recently tested both a ground-based anti-satellite missile and an on-orbit anti-satellite weapon prototype which threatens our space capabilities. In 2007, China destroyed a satellite to demonstrate their anti-satellite capabilities and the resulting debris will remain in orbit, threatening commercial, civil, and national security satellites for more than a century. Left unsecured, our capabilities in space may become strategic vulnerabilities.

Cyber: Adversaries continue to use operations in the cyber domain as a means to compete with the U.S. and pursue a position of advantage in crisis and conflict. Malign cyberspace actors increasingly exploit supply chain vulnerabilities, such as commercial software, to gain network access and conduct cyber operations against U.S. citizens, organizations, and institutions. The low cost/barrier to entry and anonymity that cyberspace provides make this domain a priority focus for adversaries to asymmetrically compete without escalation. Therefore, we must increase our ability to compete in cyberspace and ensure all elements of informational power are integrated into operations, activities, and efforts to deter our adversaries and protect the U.S. Homeland. This requires DOD to invest in partners and technology, building and maturing cyber operations and readiness, reducing risk to weapon systems and critical infrastructure, strengthening cybersecurity, and improving network resiliency.

ADVANCED CAPABILITIES

The changing character of war necessitates that we continue to modernize and innovate. We must be able to have clear linkage from sensors to shooters in an advanced information environment with the technology present to protect our warfighters, critical assets, and homeland. Investment in ensuring reliable supplies of *microelectronics,* advanced network technology such as *5G,* and *artificial intelligence* will ensure that we maintain our technological edge over our adversaries. The current globally distributed supply chains present vulnerabilities to the Joint Forces' ability to acquire necessary parts and technology in the event of a crisis that either prevents the manufacture, or shipping of material to our units in the field.

Advanced *microelectronics* are the key element in all of the Department's modernization efforts, from *Artificial Intelligence and Hypersonic Weapon Systems* to *Fifth Generation Wireless Networks.* High-speed connectivity will transform the way militaries operate. Tomorrow's warfighters will use local and expeditionary 5G networks to move massive amounts of data to connect distant sensors and weapons into a dense, resilient battlefield network. Communication networks are fundamental to how the United States trains, plans, and engages adversaries. The U.S. military must utilize the connectivity provided by 5G to operate with the speed, precision, and efficiency necessary to remain effective and survivable in the future.

U.S. Army: The Army faces an inflection point that requires innovation, creativity, and entrepreneurship in the application of combat power. The battlefield is increasingly faster, more lethal, and more distributed. Overmatch will belong to the side that can make better decisions faster. To meet emerging challenges, the Army is transforming to provide the Joint Force with the speed, range, and convergence of cutting edge technologies that will generate the decision dominance and overmatch required to win the next fight. The Army's materiel modernization transformation is based on the six modernization priorities announced in 2018: Long Range Precision Fires, Next Generation Combat Vehicle, Future Vertical Lift, the Army Network, Air and Missile Defense, and Soldier Lethality. By 2035, the Army will realize its vision of a multi-domain force. Decisive outcomes in war are ultimately achieved on land where people live and maintaining a capable land force in the United States Army is key to our overall deterrence capability and national security.

U.S. Navy: America is a maritime nation. Our security and prosperity are inextricably linked to the seas. To sustain America's advantage at sea, we must deliver combat-ready forces to deter aggression and keep the seas free and open. Deploying battle-ready ships, submarines, and squadrons around the world—from the South China Sea to the Arctic—deters aggression, reaffirms our commitment to allies and partners, and keeps the seas open and free. Readiness underpins our forward-engaged posture and touches all elements of the Navy, from our shipyards and aviation depots to the steaming and flying hours our Sailors use to hone their skills. This budget prioritizes a fleet that is ready for combat over a larger fleet that is not ready to fight.

U.S. Marine Corps: The Marine Corps is optimizing the force for competition in the vast littoral regions of the globe by modernizing the force for Strategic Competition. As codified in law, Marines serve in cooperation with the Navy in the conduct of naval campaigns. As international relations are defined more by periods of cooperation and competition, the Marine Corps will focus on the competition phase before conflict by generating a persistent reconnaissance force for the Joint Force that has organic long-range, precision fires with mobility. Thus far, they have fully invested in their modernization by divesting of capabilities and capacities that no longer offer the best value for a maritime force in the contact and blunt layer.

U.S. Air Force: Moving forward, the Air Force will prioritize its resources to transform our equipment, support our airmen, and bolster our core missions. To deter and defeat today's competitors and tomorrow's adversaries, this budget continues to re-capitalize our Air Force. The Air Force is retiring legacy platforms with a bias toward the future, so that we can focus on aircraft that can penetrate high end defenses. A cutting edge Air Force that is without peer is fundamental to successful land or sea operations and is the key element to maintaining deterrence and sustaining the force.

U.S. Space Force: The Space Force investments accelerate modernization of the entire Joint Force. Space Force capabilities underwrite, enhance, and enable Joint Force operations. The Space Force protects U.S capabilities and freedom of operation outpacing actions of our competitors.

Ongoing actions to fully resource the United States Space Force (USSF) including transfer of the Space Development Agency (SDA) and unit transfers from the Army and Navy, will enhance the USSF's ability to organize, train, equip and present forces who can compete, deter and if necessary prevail should war initiate in, or extend to space.

PEOPLE FIRST / PEOPLE AND FAMILIES

People are our most important resource in the Joint Force. We must ensure that we are doing all that we can do to take care of and guard our most critical resource. Taking care of people is a critical readiness issue, it decisively impacts unit cohesion, recruitment, retention, and confidence in leadership. The Joint Force has been working to rid our military from the scourge of *sexual assault and sexual harassment* for years. We must do more to finally implement real and lasting change. Sexual assault undermines our military values and undercuts our ability to field a cohe-

sive fighting force. *Sexual assault* and *harassment* prevention, *response* and accountability are leadership issues. We will hold DOD leaders at every level responsible for building a safe environment for our people, guaranteeing anyone who does not act within the highest standards of the Joint Force is held accountable.

We will not tolerate actions that go against the fundamental principles of the oath we share, including actions associated with extremist ideologies. Extremism also destroys readiness because it destroys cohesion. Extremism presents a complex and unique challenge to DOD. We must meet this head-on, and place the highest importance on treating all personnel with dignity and respect, in an environment free from discrimination, harassment, and maltreatment. We must be ever vigilant in our efforts to identify and counter extremist behavior within our ranks.

We continuously earn the trust of our service members and their families by ensuring that they continue to receive excellent quality of life benefits. Our premier all-volunteer force will continue to be the greatest in history only if we continuously affirm how much we value the service that our military and civilian members provide their country.

The Joint Force is committed to *growing our talent* and ensuring that all who meet the requirements to serve are able to serve. The Joint Force competes for the talent of America's youth along with every other business, and organization who seeks our Nation's best and brightest. Service to Nation is a worthwhile cause and we welcome all who are eligible to serve. Despite our inclusive approach only 29 percent of today's youth are eligible for military Service without a waiver. The Joint Force's objective is to field the most lethal and combat effective fighting force in the world. We will continue to support the accessions of all qualified people to all jobs and positions within the Joint Force.

The Nation's largest employer-sponsored child care program supports our Joint Force, with more than 27,000 staff members providing daily care for more than 160,000 children aged birth to 12 years in approximately 700 nationally-accredited child care centers. *Taking care of families* is a holistic approach that ensures that our troops are ready to fight because they know their families are well cared for.

Housing our forces is critical to ensure that our junior and most vulnerable families are able to live in a healthy environment wherever the Nation calls them to serve. Families don't raise their hand and join the service. We as a nation owe it to our troops to ensure they have what they need. The Military Housing Privatization Initiative (MHPI) reform efforts are actions that will improve the tenant experience, rebuilt tenant trust, and maintain MHPI housing project financial viability. The MHPI Tenant Bill of Rights (BOR), issued in February 2020, is a visible and important commitment in DOD's larger effort to regain resident trust.

ACHIEVING THROUGH TEAMWORK

We in the Joint Force are a team of teams. Sworn to support and defend the constitution, teamwork is our watchword. There is no daylight between the services when it comes to ensuring the security of the American people. The Joint Force is a collective effort, and no services ever fights alone.

Joint exercises with all services, allies and partners participating are a key component to our warfighting readiness. Ensuring that exercises such as Defender Pacific and Defender Europe continue and that we fastidiously increase the number of participants and complexity in these exercises will guarantee the best preparation for war and a mechanism to demonstrate our commitment and resolve to those who wish to question our friends and our capabilities.

CONCLUSION

The United States Joint Force is a flexible and adaptable force ready to deter, fight, and win our Nation's wars. The President's Budget 2022 budget request increases the readiness of the force by developing the Joint Force of the future, ensuring people are our number one priority, and positioning us to achieve through teamwork. America's network of allies and partners is a strategic source of strength. Many enemies have grossly underestimated the United States and the American people in the past. They've underestimated our national resolve. They've underestimated our capability, our skill and our combat power, and each made a fatal choice which ended with their enrollment in the dustbin of history. The same will be true of any enemy that makes that mistake today or tomorrow. We are ready now, and will remain so in the future, we are also facing tough strategic choices, and we are being increasingly challenged with very capable potential adversaries, clearly acting in opposition of our interests. Our job as your Joint Force, our contract with the American people is that we, the United States military will always be ready to deter our enemies and if deterrence fails then to fight and win.

Chairman REED. Thank you very much, Mr. Milley. I understand Mr. McCord does not have a statement. Is that correct? Thank you, Mr. McCord.

Secretary Austin, we are in the process of withdrawing our combat forces, save for embassy protection personnel. It is going rapidly. The projections, I think I have read, are perhaps July we could have all forces out. I think also, too, the Taliban are aware that if they would encroach upon our forces that would not only delay our departure but re-engage us in Active operations.

So the questions, I think, now are after the departure of our forces, do you believe you have the appropriate authorities and funding to continue to support the Afghan National Security Forces and to conduct counterterrorism operations after the transition?

Secretary AUSTIN. Thank you, Chairman. As you know, what we have said is that we intend to maintain a good and productive relationship with the Afghans post our retrograde, and that entails making sure that, with your support, we can continue to provide funding for their military and support for the government as well. I think that support is critical in ensuring that the government retains the ability to function and that their military remains intact. So, again, we will need your support to be able to do that.

In terms of authorities, I do think that we have the authorities that we need to be able to focus on a discrete set of threats, and that threat is those threats that could conduct operations against the United States of America that would emanate from that space in Afghanistan. So our counter terrorism (CT) threat is focused on al Qaeda, and we are confident that we will have the authorities to continue operations.

Chairman REED. Are you also confident that given the significant drawdown of personnel that you will be able to effectively distribute the resources to the Afghan National Army and other security institutions?

Secretary AUSTIN. As you know, Senator, our plan is to keep our embassy there, and hopefully as we continue to work with the Afghan Government we will establish those capabilities and procedures necessary to be able to effectively distribute funds and track the movement of those funds and capabilities.

Chairman REED. Well, at any point in your review, as the situation develops and you feel you need additional authorities, please do not hesitate to contact the Committee. I think both myself and the ranking member would be very eager to provide those authorities.

You mentioned in your opening statements the scourge of sexual assault in the military and the ongoing efforts to reform the UCMJ. The last time we did a major military reform, in 2017, the Defense Bill required a 2-year implementation time frame, and every bit of which was used. Critical to this process is the fact that the President must republish the Manual for Courts Martial and ensure that ongoing investigations and prosecutions are not jeopardized by rushed implementation.

When you forward the administration's recommendation, will you include your assessments of the time, resources, and the qualified personnel necessary to effectively implement those changes?

Secretary AUSTIN. We will, Chairman, and to your point, any proposed change to the UCMJ is a very serious issue. We will need adequate time to implement the change in a very responsible way, and we will also need resources to make sure that we can effectively implement it. We will need flexibility to ensure that if there is something that needs to be adjusted we can adjust.

Chairman REED. Thank you very much, Mr. Secretary. Thank you, General Milley and Mr. McCord. Senator Inhofe?

Senator INHOFE. Thank you, Mr. Chairman. Because of the interest we have here I just have two brief questions. One, General Milley, in 2018, you testified that it is hard to compare the United States and Chinese defense budgets because China's budget is very different, and for a better comparison we need to make some adjustments, and we have done that, little things like the cost of labor and all of that. But making those adjustments is not easy, and that is why we required, in last year's Defense Authorization Bill, that the Pentagon do a study to try to make this comparison.

China and Russia combined probably spend more than we do. I made that point in an op-ed piece last May. But I would ask you, General Milley, the Chinese and Russian economies in defense spending are unique, and given this, do you think that their relative combined effort is similar to ours, and do you think that they understate the spending that they are doing?

General MILLEY. Senator, both of our analyses, DOD's analysis and the intelligence community's analysis of budgets for both Russia and China are classified. At an unclassified level I would tell you that, combined, the Russian and Chinese budgets exceed our budgets, if all the cards are put on the table. Both governments do not put all their cards on the table when it comes to their budget. It is a very difficult thing to discern, that which is being spent on their defense versus other priorities.

With respect to China, they have put significant levels of effort, of their economy, and, of course, their economy is second only to ours, significant levels of resources into building the Chinese military. The Chinese military, as we have noted many times before, is on a significant increasing rise in capability over the last 20 or 30 years, and they continue to invest heavily in that.

Senator INHOFE. That is right. Secretary Austin, during your confirmation hearing in January you said, and this is a quote, you said, "I see China, in particular, as a pacing challenge for our Department," and that you need our help to deter China. I am worried that if we underfund the military, our military, we will undermine our alliances and weaken deterrence.

In your opinion—well, me just state this. We have felt for some time, and have said that when we countries, and it happened that Senator Rounds and I went to six different countries last week, and one of those was Romania. They reminded us that we talked to them about 2 percent, they should get 2 percent for defense spending, and they did that, and they told us that they did that. Yet they are looking at us actually reducing our funding, and I would just like to have you comment on what kind of effect that might have to other countries too.

Secretary AUSTIN. Well, thank you, Senator. I would say that when you look at our overall contributions to the North Atlantic

Treaty Organization (NATO), we contribute a substantial amount to the NATO effort, and we will continue to do so going forward. I think the budget gives us the right mix of capabilities and the flexibility to be very effective in our efforts to deter China going forward, and Russia, or anyone else who would want to take us on.

So I am confident that this budget will allow us to match our resources to our strategy and our strategy to our policy.

Senator INHOFE. My concern has been that our insistence in the previous administration, which I agreed with, that we reach the 2 percent in these other countries, and they see that it appears that our expectations are much less in this administration.

Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Inhofe. Before I recognize Senator Shaheen, we have a room reserved for a closed session after this open session. So any questions that the panel feels would be best addressed in a closed session, we will retire there. If there are no such questions then we will conclude with the open session.

Senator Shaheen, please.

Senator SHAHEEN. Thank you, Mr. Chairman, and thank you to all three of you for your service to the country and for being here this morning.

Secretary Austin, there is an interesting article in The New York Times today that suggests that our plan in Afghanistan is to not just provide for some sort of over-the-horizon troops to address counterterrorism but that we might also be looking at ways that we can provide air support to the Afghan forces if they are in danger, or if we are in danger of losing Kabul or another major city in the country. It also quotes Afghan officials as saying that they have been told by their American counterparts that the United States would stop any takeover of a major city. Obviously, who knows what the source of that is.

[The information referred to follows:]

U.S. Weighs Possibility of Airstrikes if Afghan Forces Face Crisis

The Pentagon is considering whether to intervene with warplanes or drones in the event that Kabul is in danger of falling to the Taliban, though no decisions have been made.

By Helene Cooper, Eric Schmitt and Thomas Gibbons-Neff

Published June 9, 2021Updated June 17, 2021

WASHINGTON — The Pentagon is considering seeking authorization to carry out airstrikes to support Afghan security forces if Kabul or another major city is in danger of falling to the Taliban, potentially introducing flexibility into President Biden's plan to end the United States military presence in the conflict, senior officials said.

Mr. Biden and his top national security aides had previously suggested that once U.S. troops left Afghanistan, air support would end as well, with the exception of strikes aimed at terrorist groups that could harm American interests.

But military officials are actively discussing how they might respond if the rapid withdrawal produces consequences with substantial national security implications.

No decisions have been made yet, officials said. But they added that one option under consideration would be to recommend that U.S. warplanes or armed drones intervene in an extraordinary crisis, such as the potential fall of Kabul, the Afghan capital, or a siege that puts American and allied embassies and citizens at risk.

Any additional airstrikes would require the president's approval. Even then, officials indicated that such air support would be hard to sustain over a lengthy period because of the enormous logistical effort that would be necessary given the American withdrawal. The United States will leave all its air bases in Afghanistan by next month, and any airstrikes would most likely have to be launched from bases in the Persian Gulf.

A potential fall of Kabul is the crisis most likely to lead to military intervention after U.S. troops leave, officials said. Intervening to protect Kandahar, Afghanistan's second-largest city, would be far less certain, one official said. Encroaching Taliban forces have increasingly threatened several other urban hubs in almost every corner of the country in recent months.

The discussion suggests the degree of concern in Washington about the ability of Afghanistan's military to hold off the Taliban and maintain control of Kabul and other population centers.

And it is the latest indication of the scramble by the United States to address the ramifications of Mr. Biden's decision in April to order a full withdrawal — a goal that had eluded his two immediate predecessors, in part because of opposition from the military.

Whether to provide air support to Afghan security forces after U.S. troops pull out is one of several major questions about Afghanistan policy that the administration is grappling with as Mr. Biden prepares to meet NATO allies in Europe next week.

Also unresolved is how U.S. troops will carry out counterterrorism missions to prevent Al Qaeda and other militants from rebuilding their presence in Afghanistan, and how to allow Western contractors to continue to support the Afghan military. At the same time, the C.I.A. is under intense pressure to find new ways to gather intelligence and carry out counterterrorism strikes in the country.

With the Pentagon set to conclude the pullout of U.S. troops by early July, the Afghan military — created, trained and supplied in the image of the American military — is supposed to start defending the country on its own.

Senior American officials say that the immediate crumbling of the Afghan military is not a foregone conclusion. But there is little doubt that the Afghan forces are battered and at risk of being overwhelmed, especially if their commandos and air forces falter.

The United States is not likely to provide additional air support to Afghan forces in rural areas, many of which are already under Taliban control, the officials said. And even government enclaves around the country, which are already under siege, are unlikely to receive much military help from American warplanes, the officials said. They spoke on the condition of anonymity to avoid speaking publicly about internal administration discussions.



An Afghan soldier at an outpost in Panjwai, Afghanistan, in March. The United States is not likely to provide air support to Afghan forces in rural areas, officials said.Credit...Jim Huylebroek for The New York Times

When Mr. Biden announced the withdrawal in April, he promised to support the Afghan government, including its security forces; but he appeared to indicate that the Afghans would be on their own militarily after American and NATO troops left this summer. “While we will not stay involved in Afghanistan militarily, our diplomatic and humanitarian work will continue,” he said at the time.

Officials said then that the United States would launch strikes in Afghanistan only for counterterrorism reasons, in case there was intelligence about efforts to attack American interests.

A spokesman for the White House’s National Security Council declined to comment on the options under discussion, saying the administration did not publicly discuss rules of engagement.

Asked on Thursday about The Times article at a Senate hearing, Defense Secretary Lloyd J. Austin III declined to comment on any future combat operations in Afghanistan.

Mr. Austin said that the United States is providing some air support to Afghan security forces now, during the American troop withdrawal, but once the pullout is complete, he said further support would be “very difficult to do” because American warplanes and armed drones would be out of the country.

But officials say there appears to be some new flexibility in the interpretation of counterterrorism. They say a debate has risen in the administration over what, exactly, is the threshold for turmoil in Afghanistan that could lead to American airstrikes.

The discussion reflects lessons learned from the rise of the Islamic State in Iraq, which forced the Obama administration in 2014 to recommit troops and air cover to defend Iraqi cities as the group encroached on Baghdad.

Senior officials said that at the moment, that threshold looked like a looming fall of Kabul, a situation that would most likely require a signoff from the president before American warplanes — most likely armed MQ-9 Reaper drones but possibly fighter jets — provided air support to Afghan forces.

Afghan officials said they had been told by their American counterparts that the United States would also stop any takeover of major cities, a vague statement without any clear backing.

That support would be tough to maintain over any extended period.

“It’s a very hard thing to do,” said Gen. Joseph L. Votel, the former commander of United States Central Command. “It’s an operation to get aircraft to Afghanistan, especially if you’re having to come from the Gulf or an aircraft carrier. There is limited loiter time for them to do anything.”

There are already signs of the difficulties that the United States would face in sending crewed aircraft to carry out strikes after the withdrawal. As U.S. bases in Afghanistan close, it has left pilots with a conundrum: What if something goes wrong thousands of feet over Afghanistan?

Forward Operating Base Dwyer — a sprawling complex in the south with a sizable landing strip — is closing in weeks, if not days. At that point, U.S. aircraft will have only one viable American military base, Bagram, to divert to if they face a mechanical or other issue in flight. Bagram will shut down when the withdrawal is complete.

With restrictive rules of engagement that require hours of overhead surveillance before an American airstrike is authorized, Afghan forces have tried to compensate, launching 10 to 20 airstrikes a day. U.S. surveillance drones are providing a wealth of coordinates to the Afghan Air Force, but Afghan pilots and aircraft are facing burnout and maintenance issues that grow by the day as foreign contractors withdraw.

“Our policy should be to do everything possible, consistent with not having troops on the ground, to enable the legitimate Afghan government and security forces to hold on,” said Representative Tom Malinowksi, Democrat of New Jersey and a former State Department official.

Mr. Malinowski last month joined more than half a dozen other House Democrats and Republicans in urging Mr. Biden to provide an array of support to the Afghan government after American troops leave, including any information on impending Taliban attacks detected by U.S. surveillance aircraft and spy satellites.

Top American generals have acknowledged that the Afghan security forces could collapse in a year or two, or even a matter of months, after the departure of Western military support.



“We frankly don’t know yet,” Gen. Mark A. Milley, the chairman of the Joint Chiefs of Staff, said when asked about the ability of Afghan forces to hold up under increasing pressure.Credit...Alex Wong/Getty Images

Gen. Mark A. Milley, the chairman of the Joint Chiefs of Staff, offered reporters traveling with him last month a lukewarm statement about the abilities of the Afghan forces. After 20 years of war, thousands of casualties and huge sums of money spent on the Afghan military and police, he characterized them as "reasonably well equipped, reasonably well trained, reasonably well led."

When pressed on whether he thought the Afghan forces could hold up, General Milley was noncommittal.

"Your question: The Afghan army, do they stay together and remain a cohesive fighting force, or do they fall apart? I think there's a range of scenarios here, a range of outcomes, a range of possibilities," he said. "On the one hand, you get some really dramatic, bad possible outcomes. On the other hand, you get a military that stays together and a government that stays together.

"Which one of these options obtains and becomes reality at the end of the day?" he said. "We frankly don't know yet."

When asked at a Pentagon news conference last month if Afghan cities were in danger of being overrun by the Taliban after American forces left, Mr. Austin declined to say whether the United States would provide air support, saying it was a hypothetical situation.

Zalmay Khalilzad, the top U.S. diplomat leading peace efforts with the Taliban, issued last month what seemed to be a definitive statement on the matter.

"We will do what we can during our presence until the forces are withdrawn, to help the Afghan forces, including coming to their defense when they are attacked," he told the House Foreign Affairs Committee. "But once we are out of Afghanistan, direct military support of Afghan forces such as strikes in support of their forces, that's not being contemplated at this time."

But three other American officials said the issue had not been resolved in high-level administration meetings on Afghanistan.

Helene Cooper and Eric Schmitt reported from Washington, and Thomas Gibbons-Neff from Kabul, Afghanistan.

But can you tell me if we are, in fact—first of all, where we are in our plans to develop an over-the-horizon CT force, and if we are, in fact, contemplating any other actions in support of the Afghan troops should the Taliban be in danger of taking over Kabul?

Secretary AUSTIN. Thank you, Senator. As you know, we continue to provide support to the Afghan Security Forces as we retrograde. Once we have completed our retrograde that will be very difficult to do, because our capabilities will have diminished in country.

I really will not speculate about any potential outcomes or any potential future actions. I will just say that the President has been clear that our mission in Afghanistan has been accomplished and we are focused on retrograding our people and equipment out. Again, going forward, in terms of our CT efforts, those CT efforts will be focused on those elements that can possibly conduct attacks against our homeland.

In terms of our efforts to establish over-the-horizon capability, I would just point to the fact that as we have retrograded a lot of our capability out of country we are doing a lot of things over the horizon now. ISR is being flown from the Gulf, a lot of our combat aircraft missions are being conducted from platforms in the Gulf, and so we have the capability now to do that. What we are looking for is the ability to shorten the legs going forward by stationing some capability in neighboring countries. That is still a work in progress.

Senator SHAHEEN. So do you have a timetable for when that plan might be completed?

Secretary AUSTIN. I do not have a timetable. I will tell you that we will move as quickly as we can, in conjunction with State Department efforts.

Senator SHAHEEN. In talking with some of the women leaders of Afghanistan in the last weeks, one of the things that they have asked and said they thought was very important would be for high-level American officials—the President, certainly you as Secretary of Defense—to speak out against the Taliban's attacks against women and girls in the country and to make it clear that that is a violation of international norms of behavior and human rights.

I would urge you to do that, along with other members of the administration. I think that is the least we can do at this point is to make a point of the violation of norms and human rights that the Taliban are conducting in Afghanistan, especially when it comes to women and girls.

I want to go on to another issue in my time that is left, because one of the things you talked about in your opening statement was the importance of taking care of our people. As we know, one of the challenges that we are facing, not just among DOD employees but intel agencies, at State, has been attacks what has come to be known as the Havana Syndrome. The National Academy of Science report that was released in December calls these directed energy attacks.

It is my understanding that DOD is the department that is taking the lead on treating individuals suffering from these attacks. Can you tell us if that is the case, and if you have the resources that you need to continue to do that, and then what steps you are taking to protect DOD personnel from future attacks.

Secretary AUSTIN. Well, the health and welfare of our people is of utmost importance to me, and we are working as one element, a larger whole-of-government effort to really try to determine the cause of these injuries, and also we are working as hard and as fast as we can to expand our medical capabilities. We have done that, expanded our capabilities to treat traumatic brain injuries (TBI) and acquired brain injury (ABI). We will have the ability to treat more people going forward, but again, we will remain sighted on this and we are working as a part of a whole-of-government effort.

Senator SHAHEEN. You factored that into your budget request?

Secretary AUSTIN. We did not ask for additional funds for this specific, but we have sufficient funds to do what is necessary.

Senator SHAHEEN. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Shaheen. Let me recognize Senator Wicker, please.

Senator WICKER. Thank you, Mr. Chairman. Mr. Secretary, thank you for being with us today. We had a Seapower Subcommittee hearing just this week, and the Navy's vice admiral witness before that subcommittee said this, and I quote: "We have done many studies over the last 5 years that say we need a larger Navy. The Navy we can afford now is roughly 300 to 305 ships. So if we are going to pace the adversary we need to have a bigger Navy."

Mr. Secretary, did the vice admiral misspeak in saying that?

Secretary AUSTIN. What I would say, Senator, and, you know, I think certainly we have the most capable and dominant navy in the world, and it will continue to be so going forward. When you talk about naval power, certainly size matters, but what also matters is having the right mix of capabilities in the force, and so our goal is to make sure that we maintain a ready, capable, and sustainable force in the future.

Senator WICKER. Okay. Did the Navy vice admiral misspeak in saying that we need a larger Navy? He said that two days ago in testimony before the Seapower Subcommittee. Can you just answer that?

Secretary AUSTIN. What I will say, Senator, is that for some time we have had a goal of a 355-ship Navy, and I think that goal is a good goal to shoot at. So I think that is probably what he is referencing.

Senator WICKER. This budget does not get us anywhere near back on the path to do that. I also have concerns about the Navy's plans for amphibious war ships. Last year, Congress authorized, in the National Defense Authorization Act (NDAA), a multi-ship procurement bundle for three amphibious transport dock (LPDs) and one landing helicopter assault (LHA). This would result in a $700 million cost savings, and at that hearing on Tuesday, Acting Secretary of the Navy for Research, Development, and Acquisition testified that although the Navy had reached a handshake agreement to execute the block buy, the Department of Defense was unlikely to approve it.

Why does it make sense that knowing that we are going to have to buy these amphibious ships, why does it make sense that the Department of Defense might oppose saving the taxpayers over $700 million by procuring the ships in a block buy?

Secretary AUSTIN. As we said at the top, Senator, and you well know, we are always faced with making tough choices, and so as we looked at what we could do in this budget, and what was best to do in this budget, we are making those choices.

Senator WICKER. All right. Well, let me just say this. This is an inadequate defense budget, and I sit here, and while I very much admire our Constitution and the fact that we have one commander-in-chief, so the military members, no matter how many stars they have on their shoulders, under our Constitution they salute that commander-in-chief, and he appoints a Secretary of Defense and he appoints Cabinet officials, and based on the best advice that you and others give him, the commander-in-chief makes the decision. The Office of Management and Budget (OMB) that he appoints ap-

parently has decided that we could do just fine in a world where China is expanding in the Pacific, where Hamas is still raining rockets down on Jerusalem, where Russia is not quitting at all, and where we have just heard that the combined budgets of Russia and China are greater than ours, we have decided, based on what some budget crunchers in OMB, and bean counters in OMB have decided that we ought to be able to do, and that we can have massive increases in domestic spending, but a cut in purchasing power for the national defense budget.

Let me just say to my colleagues, the Constitution of the United States also gives us the power of the purse, and while we appreciate the suggestion by OMB budget crunchers, it is our obligation to defend this nation, and this proposed budget does not do so, in the two respects that I have mentioned, and in the respect that the ranking member mentioned earlier on, and it is incumbent on us to reverse this and to get our troops and our Nation the national security budget that they need.

Thank you very much.

Chairman REED. Thank you, Senator Wicker. Let me recognize Senator Gillibrand, please.

Senator GILLIBRAND. Thank you, Mr. Chairman. Thank you to our witnesses for your service, your dedication, and your integrity.

As you both know, I have been fighting against sexual assault in the military for the last 8 years. I, along with now 66 co-sponsors on the legislation from the U.S. Senate, are proposing that we draw a bright line at all serious crimes, take them out of the chain of command. That one change, we believe, will create more transparency, more accountability, a higher professionalization, and will create less bias within the system.

General Milley, I would like to ask you about your thoughts on this proposal. It is my understanding that you are now open to removing sexual assault and related crimes from the chain of command. Can you please confirm that to the Committee today?

General MILLEY. Thank you, Senator, and thank you for your leadership on this issue. I have said publicly before, and I will say it here, I think that this issue has been out there for quite a long time, and we, in uniform, generals and members of the chain of command, et cetera, we have not successfully moved the needle in resolving sexual assault. In addition to that, I have some evidence, some studies, some anecdotal evidence, that junior members of the chain of command, or junior members in the military, primarily women, have lost faith and confidence in our chain of command to resolve sexual assault through the chain of command.

So I am very open-minded to some significant and fundamental change in the area of sexual assault and sexual harassment. What you mentioned was the bright line of all the other—all felonies, for example. I think that requires some detailed study before we completely overhaul the entire UCMJ. But the focused area of sexual assault and sexual harassment, completely open-minded to some very significant change, and I think that is also true of most of the senior leaders in uniform.

Senator GILLIBRAND. Thank you very much, General. As you and I discussed, in recent years we have seen some very chilling statistics about bias in the military justice system against people of

color. Black servicemembers were at least 1.29 times, and as much as 2.16 times more likely to have disciplinary action taken against them in the average year across all branches, from 2006 to 2015.

These disparities largely do not improve, and in some cases got worse, in the most recent years. As an example, the December 2020 Air Force Inspector General's review found that black servicemembers, quote, "voiced a consistent lack of confidence," end of quote, in Air Force discipline processes. Three in five black servicemembers said they would not receive the same benefit of the doubt as their white peers if they got into trouble, and 1 in 3 said they believed the military justice system is biased against them.

The problem, however, is even more chilling when you look at military capital cases. One 2012 death penalty study found that 41 percent of defendants were people of color, but 67 percent of those that actually received the death penalty were people of color.

So the reason why we wrote our bill 8 years ago to draw bright lines against all serious felonies, all serious crimes, anything that carried more than a year of penalty, was not just to professionalize the systems and remove bias against survivors of sexual assault but also to remove biases across the board and to professionalize the entire military justice system. That is what all military experts in criminal justice recommended, and it is what our allies actually did over the last 40 years—the United Kingdom, Germany, Israel, Canada, Netherlands, Australia.

As a result, we mirrored that in our legislation, and we carve out all uniquely military crimes. So I would like to know, General Milley, will you remain to have an open mind as you review these statistics and this additional data before you make your recommendation to the Committee?

General MILLEY. Totally, and I am very sincere. I have a complete open mind on this. As I said up front in my opening statement, the United States military has a singular purpose, to support and defend the Constitution, and we have two tasks, to fight and win our Nation's wars and to prepare to fight and win our Nation's wars, and unit cohesion is a significant contributor—in fact, it is probably the most important contributor—to combat power. Sexual assault, sexual harassment, any kind of deviance from any sort of good order and discipline rips apart at that. Central to the concept is also the commander's personal responsibility and accountability for the good order and discipline of the unit, and they are personally responsible for the cohesion.

So I am absolutely open-minded to suggestions to improve the system, because what we want to do is fix the problem and improve the combat power of the U.S. military.

Senator GILLIBRAND. Secretary Austin, we have also had the benefit of having a conversation about these details, and I would like to ask you the same question. Will you remain an open mind as you look at new data about racial disparities as well as the data you will receive from the panel that you requested, advice on specifically sexual assaults and related crimes? I ask that you remain an open mind as you look at the full version of the details and facts that the DOD has compiled over many years and the work of this Committee over the last 8 years.

Secretary AUSTIN. Before I answer that, Senator Gillibrand, just let me thank you for your incredible work that you have done over the years on this issue, on the issue of sexual assault and sexual harassment. Whatever changes occur going forward will be largely due to your incredible dedication to this issue. So on behalf of the Department of Defense, thank you for what you have done.

As you know, Senator, first of all, yes, I always have an open mind to solving any tough problem. But as you know, the commission that the President tasked me to stand up, and has stood up and provided me some initial recommendations, and still owes me more recommendations, has been focused on the issue of sexual assault and sexual harassment. Those are the problems that we are trying to resolve and improve.

But yes, I always maintain an open mind with any tough problem, but we are focused on the issue of sexual assault and sexual harassment, and again, thank you for all the work that you have done on this issue.

Senator GILLIBRAND. Thank you, Secretary. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Gillibrand. Now let me recognize Senator Fischer, please.

Senator FISCHER. Thank you, Mr. Chairman. Welcome, gentlemen. I too want to thank you for your patriotism, your years of service, and your years and years of caring for those who serve with you in protecting this nation.

Secretary Austin, I appreciate the way the budget has prioritized nuclear modernization and kept important programs like the Ground Based Strategic Deterrent (GBSD), the Long Range Stand Off Weapon (LRSO), and the *Columbia*-class submarine on track. I am also happy to see it invest in the nuclear command, control, and communications (NC3) and finally begin moving forward on replacing the E–4B with survivable, airborne operations center.

During your confirmation you talked about the need for a review of our nuclear posture and modernization programs. Has the Department begun a formal nuclear posture review, and when do you expect it to be complete?

Secretary AUSTIN. We have not begun that review yet, Senator, but it will begin very shortly, and it will take us several months to conduct the review.

Senator FISCHER. Well, I think that review process is so very important. These systems are the most important military capabilities that we possess, and decisions about our nuclear policies and programs must be considered in a thorough, deliberative process that allows stakeholders from across the Department of Defense, as well as other Federal agencies, like the Department of Energy, and our allies to provide their input so that decisions can be made with a full understanding of the consequences. We cannot be careless about this.

Which is why I was very concerned to see a news story that put forth a copy of the memo from the Acting Secretary of the Navy, Thomas Harker, in which he directed the Navy to defund the sea-launched cruise missile program. This memo was signed June 4th. That is just one week after the Department of Defense submitted a budget request that asked for $5 billion to continue to study that

concept, and the National Nuclear Security Administration (NNSA) requested $10 million to conduct its own assessment.

Based on what you just said, it seems like this decision was made outside of any kind of posture review process. Is that correct?

Secretary AUSTIN. Senator, I have not seen the memo, but I would say that, you know, all of us, all the Services and the Department are, again, making tough choices in terms of what to prioritize and where to accept risk. That memo has to be predecisional because of where we are in the process, and so I do not feel comfortable in commenting on his memo. I would just say that again, I am committed to a posture review, to make sure that we adequately analyze what our capabilities are, what is needed in the future, that we maintain the right balance in our nuclear forces, going forward.

Senator FISCHER. So you were not consulted on that at all?

Secretary AUSTIN. That is an internal department memo, I believe, based upon what has been said.

Senator FISCHER. General Milley, were the Joint Chiefs consulted at all, to your knowledge?

General MILLEY. I am not familiar with the memo, nor was I consulted, but as soon as we are done here I will go find that memo and get consulted.

Senator FISCHER. Thank you, sir. I find it very concerning that an Acting Service Secretary, who has not been confirmed by the Senate, is making a decision like this, outside of any review process, without analysis or input from the Office of the Secretary of Defense (OSD) policy, from nuclear matters, the Joint Chiefs, or U.S. Strategic Command (STRATCOM), and without taking to other agencies, or having, it seems, any discussions with our allies.

I would also point out that the analysis of alternatives for the missile is still ongoing, and so it would seem very, very premature to reach any conclusions about it being feasible, or infeasible.

I do think this is the right way to make decisions about nuclear policy. Do you agree with that, Secretary Austin?

Secretary AUSTIN. I do, Senator.

Senator FISCHER. Should a decision like this be made through that review process?

Secretary AUSTIN. I have every confidence that it will be, Senator.

Senator FISCHER. Thank you. I hope you will follow up with the Acting Secretary to make sure that it is a posture review that makes a decision on this.

Does the Department still support the President's fiscal year 2022 budget request for this program?

Secretary AUSTIN. It does.

Senator FISCHER. Thank you. Happy to hear that. Thank you again.

Chairman REED. Thank you, Senator Fischer. Now let me recognize Senator Kelly, please.

Senator KELLY. Thank you, Mr. Chairman. Thank you to Secretary McCord and Secretary Austin and General Milley for being here today.

General Milley, this question is for you, and it is specific to the A–10. I think you would agree that properly balancing the need to

sustain America's military with the need to modernize is paramount to ensuring our adversaries are unable to outpace the United States. Having the right equipment available to our troops on the battlefield is critical, which is why I am very concerned, very concerned by the proposed divestment of 42 A–10 aircraft in the fiscal year 2022 budget.

As you know, the A–10 is a combat-proven asset that is unmatched in its ability to provide close air support to troops on the ground. The Air Force has not been able to establish a convincing replacement to carry out this mission, and it has not demonstrated a replacement that can match the A–10's cost effectiveness.

Budget analysts have estimated a modest cost savings if the A–10s are divested, but those savings are quite small when you consider the scope of the Department's $715 billion budget. It is critical that we consider the real costs of what we would be trading away if we were to take this action before an effective, close air support replacement is in place. American troops rely on close air support in the most dire of circumstances. The A–10 has saved the lives of many men and women because of its unique capabilities. Everyone I speak to, everyone, who has had experience with the A–10 in combat wants that to be the plane that shows up when they are in trouble.

So when I think about the tradeoffs we would be making by divesting, I just do not see that the risk has been properly accounted for. I expect that you have had some of these same conversations and experiences as you talk to our troops.

So, General, do you feel that we have adequately assessed the risk that these retirements could pose for our troops on the ground?

General MILLEY. Thanks, Senator, and as a ground soldier who has been in a lot of firefights, I know exactly what you are talking about with the A–10 or attack helicopters or any other munitions delivered by air. It is a very, very important capability, and personally I am a big fan of the A–10.

However, we are talking about 42 aircraft. We are still going to have 239. We have got enough for five squadrons. What we have to do—we, collectively, Congress, the Department of Defense, we in uniform—we have got to recognize and begin to shift toward the future operating environment and the changing character of war, and we must shift the capabilities that are going to be relevant, survivable, and effective against a Tier 1 adversary sometime in the future. This is a modest decrease in the number of A–10s. I think it is an acceptable risk, and I support the Air Force's recommendation.

Senator KELLY. So, General, we often think about these things as, you know, what does day one of the war look like.

General MILLEY. Sure.

Senator KELLY. I am also concerned about future conflict on day 30, 60, day 180, and in a former life I used to be a test pilot. I have flown close air support missions myself in an airplane that does not do the job well. I do not see another airplane in our inventory—not the F–16, not the F–35—that can do the mission like the A–10 can. When you combine the fact that it is far superior in that role, and protects troops on the ground when they need it the most,

and at the same time is cheap compared to the flight-hour cost of an F–35 or even an F–16, and we do not have an airplane that can do this mission like the A–10 can, and I am seriously concerned that if we go down this road and we remove 42 airplanes from the inventory, that if we wind up in a conflict, and we wind up at day 30, 60, 90, we are going to be regretful that we do not have that platform.

So thank you, General, and I yield back the remainder of my time.

Chairman REED. Thank you, Senator Kelly. Now let me recognize Senator Cotton, please.

Senator COTTON. Mr. Secretary, I received, along with Congressman Crenshaw, several hundred whistleblower complaints about Pentagon extremist and diversity training. I want to share just a small selection of what your own troops are saying. Mr. Chairman, I have a longer list I would like to submit for the record.

Chairman REED. Without objection.

[The information follows:]

MEMORANDUM

To: Senate Armed Services Committee **Date:** 10 June 2021
From: Senator Tom Cotton
Subject: SECDEF/CJCS Posture Hearing

Statements on Critical Race Theory

1. **Soldiers forced to watch videos about systemic racism**: I work for ***(unit/location redacted) all*** of my military coworkers we were forced to participate in a race-based seminar titled "race in america" multiple times. When there, the very first thing we did before even getting to discuss our opinions on the sensitive subject matter was watch a video explaining how systematic racism is in FACT an issue facing America. The video described what systematic racism is, how it relates to white privilege, and how it even affects our military. After that we had a discussion about the video we watched and were supposed to explain what we learned or took away from it. But again, the discussion didn't take place until the baseline assumption that systematic racism is a real and an existing problem we have to face was locked into place as fact.

2. **Racial Justice Narrative pushed unwillingly on soldiers, decline in unit morale:** I have served in the Marine Corps (redacted) years and I am currently a *[officer rank redacted]* in the reserves. I am Hispanic. I was part of the training session discussed in the linked article. What the article doesn't discuss is that after cancelling the scheduled civil war historian due to his faith, the commander of the reserve unit, (redacted name) replaced the training block with a "discussion" on police brutality, white privilege, and systemic racism. Essentially a critical race theory training session. The discussion was dominated by high ranking (and white) Colonels and a younger junior Hispanic officer, who seemed extremely well prepared for the session with numerous articles to cite for the evidence of the military being systemically racist. I would later learn that the junior officer is a former DNC staffer. The majority of the officers observing the training were white and obviously uncomfortable speaking out, especially when the point of view was being pushed by individuals who write their fitness reports. Myself and several other officers who happened to also be racial minorities attempted to offer a dissenting point of view (after adjusting to the shock of what was being pushed in a last minute change to the schedule). We tried to state how racially neutral the military had been in our experience, and if anything gave minorities more opportunities. However, our points were simply ignored by the Colonel, who repeatedly looped back to the young captain to push the racial justice narrative. We were of course apprehensive to push back any further and engage in a debate with a Colonel who far outranked us and was in charge of our fitness reports,

awards, and billet assignments. Coupled with the clear religious discrimination, it was the most shocking event I've been involved in during my over decade of government service. The sessions effect had drastic negative effect on unit morale, with some officers electing to drop to the IRR as opposed to continuing with the unit. I do not know if they are willing to come forward as well.

3. **Saying "All Lives Matter" considered to be unacceptable.** Woke Fundamentalism in the Military training at my units (redacted) treats the thought of saying "All Lives Matter" as heretical and unacceptable. The unit encouraged turning in those who have such thoughts beliefs during the "extremism stand down day".

4. **Bias against conservative speech:** As a member of the US military I have never seen the level of political bias as I now see in the US military. For my entire career I have never cared about the politics of my fellow service members. What I care about is we all are committed to upholding our oath to the Constitution. I witnessed the bias in the extremism stand-down day ordered by the SECDEF. Case in point are the extremism case examples (from the DoD guide) which contained only right-wing examples. There were no examples of extremism from left-wing (Antiffa) or Islamic Jihadism (Al Queda or ISIS). I seem to remember Major Nidal Hassan killing over 10 service members at Fort Hood over 10 years ago but evidently that this kind of extremism does not appear to be a concern anymore. I also remember Antiffa led riots over th e summer 2020 which caused billions of property damage and killed several people. I noticed that the military tolerated partisan speech from military members reacting to Tucker Carlson while using their official military social media accounts but immediately disciplined the LTC Lohmeirer for his personal views on critical race theory. The military leadership seems only concerned about the events on January 6 and linking them to white supremacy for political reasons. When several of us asked in a survey why Antiffa and Islamic Jihadist groups were not included in the training guidance we never received an answer during the telephone conference event led by the general officer in charge of our organization. This training would have been much better received if it was balanced and condemned all elements of extremism (ie, Antiffa, ISIS, neo-nazis, KKK). However, several people in my office were disappointed and believe the training to be politically driven with an evident bias against conservative members of the military. Many of us are afraid to voice our concerns. I have grave concerns that the DoD extremist working group will target military members with conservative views versus pursuing legitimate extremist concerns from extremist political groups (left and right). Ultimately, if this is not corrected combat effectiveness and team cohesion will suffer thereby putting the US at grave risk. LTC Lohmeirer is courageous person to come up and voice the legitimate concerns about critical race theory and how it is creeping the military.

5. **Biased Slideshow**: I am currently in the United States Navy, The secretary of defense passed down to our chain of commands are oath and domestic terrorism slideshow to show all sailors in the navy, the entire slideshow talked about white supremacy and In my opinion only talked about white people being racist. They then showed slides of the White

House *(sic.)* attack and president trumps supporters and labeled them as terrorists to America, Not once did they mention the riots that happened over the past year By BLM or any other organization, the whole slideshow pretty much was saying white people and trump Supporters are racists, what a disgusting slideshow given to us by this administration.

6. **Singling Out White Soldiers:** We have regular meetings on our base. Equal Opportunity(EO) Meetings and they are pretty extreme I've mentioned it before but I don't see anything really being done about it. I know the first one I attended was over BLM riots an the EO officer literally came out and said "all you whites need to shit *(sic.)* the hell up and listen to your black counterparts" saying how the military is racist an went on an on and there have been a few other examples another big one after.

7. **Anti-Racism Instruction:** (Redacted unit name), has recently began a campaign called Diversity, Equity, and Inclusion (DEI). It sounds innocous enough, and is completely voluntary for staff. The content, however, is critical race theory. They are, also paying an outside contracting firm (I assume using quite a bit of taxpayer money) to run training sessions on this topic. Suggested reading includes Ibram X Kendi--definitions of racism, microagressions, etc. from his books are used for the course. In the interest of keeping my job, I have not attended these sessions, but I also don't have a venue to speak up and say that I don't think we should be spending taxpayer money on these things. Diversity is a great goal--but it's clear here they don't mean diversity of thought; and I'm also strongly concerned about applying "equity" practices, as this goes directly against merit-based principles (federal system for promotions, awards, and hirings). I've taken several pictures of the pre-work for the course and messages this DEI program has sent out and am happy to send as follow up. I'm not sure that my colleagues share my concerns---a large number of people in the organization are outspokenly liberal and I'm not comfortable sharing my views. I would also ask that my name not be shared back to *[unit redacted]* with respect to this concern---I like my job and want to keep it, so long as equity programs aren't being shoved down my throat. I do firmly believe that if my name were shared in this respect, I would be unable to effectively do my job.

8. **Civilian DOD personnel disciplined for criticizing training;** I said to a colleague at work, in a private conversation, that I did not appreciate the new SECDEF accusing the DoD workforce of "extremism" and of being "the enemy in our ranks." I am a retired USAF officer, been in since 1981. Took the oath to defend the Constitution, not subvert it, and would not tolerate among the ranks those who would. I have never seen any effort among my colleagues like that. I said, "I would like a definition of extremism. I would also like to see the evidence that there is extremism in the ranks. If there's no evidence, this is a joke." I was called in by a one-star and counseled for disrespecting the SECDEF and made to sign a letter that went in my file. Clearly an effort to suppress my first amendment rights. I did not disrespect SECDEF. I stand by what I said.

9. **White Privilege: Unpacking the Invisible Knapsack:** I don't have a detailed complaint. I'm leaving this anonymously as it can be viewed by the entire SOCOM enterprise. Directly on SOCOM's home SharePoint page is a section called "Diversity & Inclusion." If you click that link, it takes you to a long list of documents. One near the top labeled, "Unpacking the Knapsack of Privilege." The actual title of the document, when you open to read it is "White Privilege: Unpacking the Invisible Knapsack" by Peggy McIntosh. The article speaks about white privilege and male privilege and how we need to restructure society. To quote the last line, "As we know from watching men, it is an open question whether we will choose to use unearned advantage, and whether we will use any of our arbitrarily awarded power to reconstruct power systems on a broader base." This attack on white people, and specifically white males is egregious and appalling and being done in the name of fake wokeness.

10. **Surveillance of Social Media; Garrison Commander acknowledges that there is no evidence extremism on the rise.** I am stationed at (redacted location). I had to attend two Extremism Stand Down training sessions within a span of 6 weeks. One at the Garrison HQ led by the Garrison CDR and one via MS Teams that was led by the *[redacted senior leader].* We were allowed to ask questions at the end of the training at the Garrison HQ. I asked if the DOD can provide any empirical evidence to demonstrate that extremism is on the rise within the military? The Deputy Garrison CDR stated there isn't any evidence at this time to demonstrate that it is on the rise. A DoD Civilian who is retired military asked why is the training only focused on extremist groups on the Far Right and not pointing out Antifa and BLM on the Far Left who were burning down cities during the summer of 2020? The answer given because of the far-right groups that were involved in the 06 JAN 21 "insurrection". Lastly, the most disconcerting issue is that the DOD is now surveilling service members' social media accounts to see who are demonstrating extremist tendencies. It is chilling yet tragic for America now resembles Napoleon's France and Stalin's Russia which spied on it's military officers to make sure their values and politics were in alignment with the revolution.

11. **White males excluded from diversity training events.** I am a [rank redacted] currently assigned to (redacted unit name) as a member of the Inspector Generals' team. As you may know, each branch of the military conducted a racial disparity review this summer specifically focused on African American service members. The [service branch redacted] released their report in December. What you may not know is we just conducted a second review, this time focused on other races and gender. While the reviews in of itself are not an issue, the messaging and what was asked of us by The [service branch investigation service redacted] was. My role was to organize virtual focus groups for [service branch investigation service redacted] to interview, one series for race another for gender. The idea was for members to discuss their experiences and concerns. The problem is the demographics they wanted in the room to talk about these experiences. They specifically asked us to bring in Asian American, American Indian/Native Alaskan, Native Hawaiian/Other Pacific Islander, and Hispanic/Latinx members for the racial groups. For the gender groups, it was exclusive to just women. As you read that list, I'm sure the issue

became apparent. They attempted to excluded white men from sharing their experiences and offended many Latinos and Latinas by using the woke term Latinx. I must give my leadership some credit as when they advertised it to the base; they invited all members to participate with emphasis on those listed. However, my leadership still used the term Latix (*sic.)*, and their primary reason for opening it up to everyone was they wouldn't have been able to fill the focus groups without doing so. When I brought this up to my [leadership rank redacted] his repose (*sic.)* was dismissive and stated, "they didn't mean it like that." Because my leadership opened it up to everyone, I ensured that White men were included in these sessions and any info I sent out did not use the phrase Latinx, but that is definitely not what [investigation service redacted] wanted or what the [service branch inspector general redacted] advertised to the rest of the [service branch redacted]. In addition to these focus groups the [department redacted] IG sent out surveys to all members this survey was riddled with identity politics and received terrible feedback from those that even bothered to take it in the first place. As part of our selection process we at the [redacted unit] also sent out a survey. While ours was drafted in a way to be inclusive it still asked members to essentially place themselves in a bucket base on race or gender and likewise was met with critical feedback.

12. **Condescending language to minorities:** I am a [MOS redacted]. New to Active Duty but been in the Reserve for years. A little bit about myself, I am an immigrant from (redacted location). Few months ago, we had a leadership development and talked about race relations in the Army. The white officers shared about how they grew up not realizing their "white privilege" (even though they grew up in the farm, and basically lived a modest life). It was very ironic because when it was my turn to speak, I said that even though I grew up in a 3rd world country, and my skin is brown, that did not stop me from being in the same room as them. My color did not stop me from getting a Master's from a prestigious university. The only thing that would stop me from achieving more is MYSELF. That in America, as a brown person, I have the SAME opportunity as them. It was a like a humble condescension (an oxymoron, if there is such a thing, if you know what I mean) to think that just because they are white, they think they have an advantage over me, and they feel sorry about that. Which was very ironic because unlike them, I have my Master's and I outrank most of them! Lol.

13. **BLM flag in barracks:** I was deployed in Africa, in a combat zone. For part of my time there, I was on a naval installation. In the barracks area of the installation, a massive BLM flag had been hung from the third story of the barracks, draping over both the second and first rows under it. The flag was probably fifty feet long, by fifteen feet wide. In addition to this, there were many service members that were wearing BLM t-shirts that sported additional BLM slogans, doo rags, and hats, all with BLM plastered on them. I am opposed to the BLM movement for many reasons, and seeing a constant reminder of this group daily, was offensive and distracting to me, especially in a combat zone. I also feel that it is a very politically driven and polarizing group, that has no business being advertised on a military base. There were also multiple people that I worked with, that felt the same way as I did about the group. I asked an individual that had influence on the base

and with the base commander, why this was being allowed. He said it was the view of the commander that this movement was not political, and non-partisan, therefore, he had no issue with its advertisement. I asked him then if it would be ok if a hung a massive make America great again trump 2020 flag, and wore hats and memorabilia for the MAGA movement. He told me that would not be allowed, as that would be a very political statement, and cause a lot of offense to some people. I told him this seemed very one sided and hypocritical, and he said it was the commanders decision, and not his. I share this because I don't think it was right then, or now, that there is such a double standard, when it comes to these issues. I felt powerless to affect any change, and just had to try and let it go and deal with it everyday.

14. **"All Lives Matter" Unacceptable:** During the last year in the Navy, as you are well aware of, the Navy came out with a mandatory anti-nationalist/Extremist training. It felt as if they were specifically targeting my personal/political views and it sent a stern message that no such activities and/or supporting President Trump would be tolerated. Also. they preached and praised BLM and said it's okay to say "BLM" But when you say that "All lives Matter", that is not acceptable. This nonsense needs to stop and focus needs to switch to what is really important and that is protecting this great Nation.

15. **Servicemembers forced to participate in "privilege walks":** (Location redacted) members of wing, group, and squadrons including senior leadership personnel. What: Conducted popular online "privilege walk" group events. Questions asked during the event that separated members physically, regardless of rank/merit/ or honorable commendations, included questions such as "If you are white take a step forward." "If you are male, take a step forward." Etc. The purpose of this trendy exercise is to physically separate participants based on the amount of "privilege" they have. This message is damaging to the military organization, rank structure, and morale. It is factually untrue and especially for our military forces where your success relies entirely on your merits and we all start at the bottom of our enlisted/commissioned tiers. Also segregating military members in a practical exercise by race or gender with the intent of making those feel shame or guilt is racist and should not be tolerated in any organization, especially our military.

16. **Soldiers forced to watch videos about systemic racism:** I work for (unit/location redacted) all of my military coworkers we were forced to participate in a race-based seminar titled "race in america" multiple times. When there, the very first thing we did before even getting to discuss our opinions on the sensitive subject matter was watch a video explaining how systematic racism is in FACT an issue facing America. The video described what systematic racism is, how it relates to white privilege, and how it even affects our military. After that we had a discussion about the video we watched and were supposed to explain what we learned or took away from it. But again, the discussion didn't take place until the baseline assumption that systematic racism is a real and an existing problem we have to face was locked into place as fact.

Statements on Standdown Briefings

17. **Soldiers told that Antifa and BLM not the focus of current chain of command:** As you know the entire military was subjected to "extremism briefs" in which command elements were forced to brief soldiers about extremism in the military and that the FBI was devoting tons of resources to rooting out "extremism" in the ranks. This however was at no point a fair and balanced affair as the briefers only discussed right wing extremism. At no point during the entire brief was left wing mob violence/groups discussed, simply that if we h ad a 3%'er sticker was on our cars we should take it off because it was now deemed a sign of white supremacy. Several soldiers brought up this lack of nuance and objectivity to which the briefers simply glossed over and redirected, "circle back" if you will, to right wing fringe groups. Lastly, a latino senior NCO raised his hand and said, "Sir, it seems that I, as a BIPOC, could wear nothing but a banana hammock, run through the streets of Seattle burning down buildings and flipping over police cars and I'm good; one of my white team mates has a 3%'er sticker on their truck and they are in jeopardy of losing their security clearance? That's not right and we all know it isn't." The briefers stated that Antifa and BLM weren't the focus of this current Chain of Command, with that the brief ended and we all filed out of the room confused and angry. This story has been echoed by my friends and colleagues in different units in different parts of the country almost verbatim.

18. **No Formal Feedback System for Navy Training:** Recently the navy had a training that had to be put out by every command. The training was about extremists. The only examples of extremist groups that was given was white Supremist groups. I've been serving in the navy for over 20 years and will be retiring next year. This was by far the worst training that I have ever been through. It made me, as a Caucasian male feel like I needed to prove that I'm not a racist individual. I tried to give feedback and voice my concerns but I have been ignored. I even tried finding ways on my own but have had no luck. This is also the first navy training that doesn't have a formal feedback system in place.

19. **Senior NCO's advocating for BLM:** Last year in the summer of 2020, we had the "Racism Stand Down" which was mandatory for the Armed Forces predating the "Extremism Stand Down" of this year. Our Enlisted Senior Leader at the time had approximately 25 to 30 enlisted personnel meet at an off-base location outside of uniform to discuss race in an open forum. When she gave her opinion, she became an advocate for the group "Black Lives Matter (BLM)" and told us that we all need to support this cause, because it is morally right. This group is particularly hostile, and doesn't align with my morals in any fashion. When Senior Non-Commissioned Officers inject their politics into the workplace, we lose our apolitical nature and ability to complete tasks with everyone around in a more effective manner. Enabling this behavior by setting a dangerous standard, is all that was accomplished.

20. **Soldiers forced to watch documentary '13':** Rep Crenshaw, (Redacted Unit). Aug of 2020, our Brigade started implementing monthly stand down "Readiness Days". The topics for these days and the content raised serious concerns for the politicization and indoctrination of our troops. Our August session took place during the height of BLM protests and calls to defund police departments. The content would have us distribute the documentary "13" by Ava DuVernay to our Soldiers and facilitate a MS Teams group discussion about systemic racism given approved discussion questions. Many [senior leader rank redacted] came forward with reservations on requiring our Soldiers to watch a revisionist historical account of our mass incarceration system (especially persuading them that out prison system is an extension of slavery). Another reservation was a 3-5 min clip in the film that used the voice of then President Trump set to the background of the Birmingham riots of 1963. Feb 2021 session
(Commanders/1SGs were briefed by the BDE CMDR and X0) covered the "Insurrection" in which Washington's Newburgh address was utilized to discuss the amount of military personnel that were protesting at the capital and that it paralleled to the mutiny plotted within the ranks to address Congress" failure to provide them back pay and pensions for their service during the American Revolution. NPR articles were presented as facts. The BDE CMDR made it a point to suggest service members within our ranks consider democrats as terrorist. He suggested that he was actively investigating someone in our formation that he was tipped off to having connections to the Proud Boys We covered DODI 1344.10 with specific mentions to MAGA bumper stickers, while approved under 1344.10 with the quote "just because you can doesn't me you should". They also used an example of a support letter military generals had signed for Mitt Romney during the 2012 election and how that undermined President Obama. This was an extremely awkward heavily politicized discussion and was then entrusted in the Commander and I to present this information and moderate this discussion within our formation. Extremism was another readiness day topic for the month of March in which the Commander and I again had to navigate through extremism topics and moderate discussions. Almost all of the extremism groups presented were from Neo-Nazi and white supremacist ideologies. I found throughout these discussions that many our young troops don't actively follow politics and are confused with the messaging at times, our older troops see right through the politics, Many struggle to connect on why we heavily condemned Jan 6 but refused to talk about the violent riots during the summer of 2020. Many had questions about groups like Antifa not being discussed during out Extremism presentation. While isolated incidents of racism/extremism may occur in our military the idea that our institutions are systemically racist and our number one military threat is extremism is a not shared throughout my formation.

21. **Told Not to Ask Questions or Record Briefing**: Prior Active Duty, current [National Guard Unit Redacted]. Before I get into it, I want to preface it with the fact that I adore my unit and the people I work with. We are a small unit and it's almost like a family to me. Although the United States isn't perfect, I love my country and what we stand for. Two months ago we had our "extremism" brief, which included interactive discussions, lasting around four hours in total. The brief was given by an [senior leader/organization redacted]

to an audience of about 60 people. I was aware these discussions were mandatory and what they consisted of. We were told ahead of time by our O6 not to ask questions and not to record the briefing, which was the first time I heard anything like that in my 9 years of service. The first item that rubbed me the wrong way was the emphasis that we took an oath and we must be willing to give our lives for our country. There's a time and place for this language, but this wasn't it. It was reiterated maybe 10 times, which felt forced and unnatural. As the brief continued and slides were presented, it described the difference between a hate crime and a hate action. The slides mentioned that this only included protected groups, meaning you could discriminate with impunity against non-protected groups (based on the state). I wanted to inquire why it's legal to discriminate against certain groups and not others, but knew that would paint me as the person they were eluding to throughout the brief. Throughout the entirety of the brief, I had a rock in my throat, knowing I couldn't rebuttal any comments without repercussions. Out of all the "extremist" groups mentioned, 100% of them were "white" and were blown way out of proportion. Not one mention of Black Lives Matter or Antifa. There was a lot of talk about "equity" and not equality. How many of our norms and symbols are racist. One of the items that my unit uses regularly has a symbol, and that symbol was on the "racist" list, so we have to change our workflow to accommodate. It was mentioned that organizations as a whole should be on the lookout for "extremists", which included anyone who questioned the actions of the current administration. It really felt like anyone who questioned anything that was mentioned during the brief would be labeled as an extremist. I wanted to walk out of the brief because it felt like I was being fed obvious propaganda, but there was just that overwhelming feeling it would paint me as an extremist. During the small group discussions, I asked a benign question (forgot exactly what was asked), and the immediate response from one of my superiors was "who do you mean by we?" It felt like his response to my question was hostile and like I was being labeled as an "extremist" for asking. This forced propaganda all but ensured my exit from the military. Over the years the military has been hinting at marxist ideology, but this is more than I can stomach.

22. **Airmen forced to participate in exercises identifying their supposed bias:** During a recent staff meeting, our Air Force [civilian senior leader role redacted] had us privately make a list of the top 10 people we trust (excluding family). After completing that task, he then asked us to also privately list out the race, gender, and sexual orientation of our top 10 trusted people. Following the making of the lists, the [senior civilian leader redacted] challenged everyone to consider if they value diversity and if we practice what we preach. The exercise was frustrating because the implication was that if my list looked like myself, then I wasn't doing a good job. The exercise was also based on the classic left leaning identity groups. After the staff meeting I requested a meeting with my Air Force section lead in order to communicate that I think the messaging with these training events is wrong. Rather than focusing on what color or gender someone is, we should rally around our shared goal of defending the Constitution of the United States. My section lead informed me that a lot of these discussions are being directed at higher levels. I have volunteered to lead the next required diversity training.

23. **Soldier allowed to wear BLM shirt:** During the DOD-mandated standown and "discussion on extremism," it was made very clear what form of "extremism" was being targeted and which side of the political aisle was not subject to criticism. At our unit, Soldiers were told to wear civilian attire for the discussion. One of our Soldiers, a black male who, since election season, has increasingly vocalized his misgivings with not only the U.S. military but with white people unilaterally, wore a t-shirt emblazoned with the logo and title of the Black Panther Party. The FBI designates the Black Panther Party literally as an "extremist" organization, yet it was made clear in our discussion that those aren't the extremists we're concerned with and that there's no reason to even bring it up in conversation. We've created a woke environment in which politically-minded people within our organization can take bold, subversive actions like this without even the thought of consequence. In fact, they know the opposite is true. Addressing those sorts of actions would bring about endless EO complaints and could stifle or even ruin someone's career on the spot.

24. **No mention of Antifa/BLM during standdown training:** This past drill weekend we had a supremacy stand down which involved all the unit leadership talking to the Soldiers about remaining A-political on social media, and outlining what constitutes White Supremacy. Special emphasis was put on identifying supremacist groups, all of which were conservative in nature. My unit has been on the front line in every violet *(sic.)* outbreak in Minneapolis since the George Floyd incident. Not one mention of Antifa and BLM because the US Government doesn't acknowledge them as hate groups. Anyone who has been face to face with them during the riots will tell you they are in fact well organized militant hate groups. However, we are encouraged to stand with them, but not groups that stand for the Constitution.

Preferential Standards

25. **Hiring Based on Race:** I have worked for (unit redacted) for the past 12 years. They conduct training expeditions for several military academies. They now require all staff to attend a three day seminar on Critical Race Theory. And they hire new instructors based upon their race not experience or skill sets.

26. **Hiring Based on Race:** I was slotted to interview for a wing executive position working for the [senior air force leader rank redacted]. The process involves several layers of interviews with "higher ups" before the final interview with the [senior leader rank redacted]. During my last pre-interview interview, I was essentially talked out of the job by the [senior leader rank redacted], affirming how difficult the job would be and how ill-fitting it was for someone in my career field [MOS redacted]. At one point during the interview, [senior leader rank redacted] said there is a high likelihood I will not get this job because I'm white. Specifically he said, "What if you walked into the Wing office and saw a room full of white males....do you think this accurately represents our Air Force?". I

replied "If they are all qualified to do the job, I don't see the problem sir". The conversation was abruptly ended after that and I was asked to leave the office so he can chat with another [rank redacted] that accompanied me to this particular interview.

Bias in Military Academies

27. **Diversity Team at Naval Academy Support BLM:** I retired from the USMC on (REDACTED DATE) My last four years were teaching at the Naval Academy. 2020 brought drastic changes including the Superintendent Vice Admiral Buck supporting the Marxist and Violent Black Lives Matter movement. I have included a link from the USNA diversity team comprised of Midshipmen who laud BLM and speak of the United States and the Military as inherently racist. They are Midshipmen who know nothing yet of the military and are unqualified to say the military is racist. My (REDACTED TIME OF SERVICE) days of active duty service have proven to me otherwise. To allow Midshipmen and our future officers to bring this mindset in to our ranks is detrimental. https://m.youtube.com/watch?v=eypiF3UDLvs

Other Woke Policies

28. **Biased Signs:** After the latest round of "extremism training" in our unit, signs started appearing. The sign depicts a human silhouette filled with words. This is obviously meant to spark a thought process of the type of indicators one should look out for an report. However, the largest and most prominent words are: "white" "violent" "extremism" there are no other races mentioned but several other references to religion, racially, and even Texas for whatever reason. Several Soldiers expressed concern over the posters citing EO complaints but they continue to be hung around the unit area. This is an actual Army furnished poster and not unit specific. Many people now feel targeted due to the recent" right wing, anti-second amendment, extremism" training. I can email a photo of this poster.

Tom Cotton

Senator COTTON. Again, this is just a few examples. One Marine told us that a military history training session was replaced with mandatory training on police brutality, white privilege, and systemic racism. He reported that several officers are now leaving his unit, citing that training.

Another servicemember told that their unit was required to read White Fragility by Robin DiAngelo, which claims—and this is a quote—″white people raised in western society are conditioned into a white supremacist world view."

A member of the Special Operations community has told us that they are being instructed that, quote, "The U.S. Special Operations community is racist."

One Army officer related to us the words of his general officer, who told him that the entire U.S. Army is racist.

A midshipman at the Naval Academy said classmates are calling America a fundamentally racist place, and that this sentiment is not contested by school administrator.

An airman told us their unit was forced into a racist exercise called a "privilege walk," where members of the wing were ordered to separate themselves by race and gender in order to stratify people based on their perceived privilege.

One African American officer disparagingly said, and I quote, "The Navy thinks my only value is as a black woman," and not the fact that she is a highly trained military specialist.

Soldiers have come forward to tell us they are being forced to watch videos about systemic racism, and documentaries that rewrite America's history as a fundamentally racist and evil nation.

One Space Force officer told me that two guardians left his ranks in a short period of time. One was a young African American who said that after the training she would never have joined the military had she known that it was such a hotbed of racism. The other was a white airman who said he did not sign up to be indoctrinated, and filed separation paperwork.

Mr. Secretary, we are hearing reports of plummeting morale, growing mistrust between the races and sexes, where none existed just six months ago, and unexpected retirements and separations based on these trainings alone. Again, these are not my words. These are the words of your own troops.

So I want to ask a few simple but vital questions. Mr. Secretary, do you believe that our military is a fundamentally racist organization? Yes or no, please.

Secretary AUSTIN. Well, I will not give you a yes or no answer or that, sir, because it deserves more than a yes or no. The military, like any organization, will have its challenges, but I do not believe it is a fundamentally racist organization. We——

Senator COTTON. Thank you. I am sorry to cut you off but our time is limited. I think it is a pretty simple question. I am glad that you agree it is not fundamentally racist.

Do you believe that any member of the military should be treated differently based on their skin color and sex? Again, yes or no will do.

Secretary AUSTIN. Again, this question deserves more than a yes or no answer. It is——

Senator COTTON. Mr. Secretary, I am sorry to cut you off. Our time is limited. It is a very simple question. Should a member of the organization you lead be treated differently, in violation of the Constitution, I would add, based on their sex or the color of their skin?

Secretary AUSTIN. No, I do not believe that, and that why we have diversity, equity, and inclusion focus in the military.

Senator COTTON. The military, for decades, has been one of the institutions in this society where you are most likely to get ahead based on your own performance, on your own merit, irrespective of the color of your skin or where you came from or who your parents were.

Secretary AUSTIN. Sir, I absolutely agree with that, and I am an example of that.

Senator COTTON. Your distinguished career——

Secretary AUSTIN. But I would say that——

Senator COTTON. Mr. Secretary, Mr. Secretary, your career is an excellent example of that, but I have more questions, based on the reports we have seen.

The military has included the works of critical race theories on its reading list by authors like Ibram Henry Rogers, who now calls himself Ibram Kendi, and Robin DiAngelo. Mr. Kendi has written, quote, "The only remedy to past discrimination is present discrimination. The only remedy to present discrimination is future discrimination," end quote. Do you agree with that proposition?

Secretary AUSTIN. I have not read that and I do not—you know, I certainly do not agree with what you just said, but——

Senator COTTON. Mr. Secretary——

Secretary AUSTIN.—it is always important to have the full context of anything that you are being asked to evaluate.

Senator COTTON. Mr. Secretary, do you believe that race and sex should be the key factor when selecting combat leaders, rather than, say, operational excellence, technical proficiency, leadership, agility, and integrity?

Secretary AUSTIN. I do not, Senator. I think what you just said should be key components in making any selection.

Senator COTTON. Thank you. I am glad we agree on all this. So let me just wrap up by saying this. If troops are subjected to the kinds of training drawing on critical race concepts like America and our military is inherently racist, or certain races are inherently privileged, other races are inherently victimized, given what you have said, should they report it up their chain of command or to the inspector general or to other appropriate channels?

Secretary AUSTIN. Yes, they should. They have always had that ability to do that, and I would recommend that in the future. I would also say that diversity, equity, and inclusion is important to this military now, and it will be important in the future, and so we are going to make sure that our military looks like America and that our leadership looks like what is in the ranks of the military, and I appreciate your support on that.

Senator COTTON. I agree with that, and like I said, the military has always been one of the most diverse institutions in our society, where you can get ahead irrespective of the color of your skin or who your parents are or where you came from. I am glad that we agree on that. This is not about diversity, in general, though. This is about a very specific kind of anti-American indoctrination that is seeping into some parts of our military, based upon the whistleblower complaints we have received.

Thank you. My time has expired.

Chairman REED. Thank you. Let me recognize Senator Kaine, please.

Senator KAINE. Mr. Secretary, I want to give you a chance to explain the context. Senator Cotton asked you a question about your own career, and you indicated that your career is an indication that the military can be welcoming to all kinds of people. But you were then going to explain the context of what your own personal experience has shown you during your time in the military, about why we need to take seriously these issues of diversity and inclusion. The Senator had other questions, but I would like to hear how you were going to answer that question, giving the full context.

Secretary AUSTIN. I think the leadership has a responsibility to create a climate where—first of all, we should be welcoming to everyone who can qualify and who is fit to serve and who can maintain the standards. Secondly, you know, we ought to look like the America that we support and defend, and our senior leadership should look like what is in the ranks. Where we have done a great job in recruiting very highly qualified and capable people, I think we need to do a bit better in terms of making sure that we are absolutely inclusive and making sure that we create pathways, or pathways are available for everybody that in the ranks to realize their full potential.

That is what that diversity, equity, and inclusion is all about. It is about cohesion. It is about making sure that we remain the most effective and lethal fighting force in the world, and we have been in the past and we will be in the future.

Senator KAINE. When we move toward diversity in the military it has always made us stronger. When President Truman integrated the military it was not uniformly popular. In fact, I believe his Secretary of the Army ended up resigning after refusing to desegregate units about a year after the order.

But moves like that, where the military has often led society in building cohesion, the military does it well. They are not always immediately popular but they end up paying dividends not just for the military but for American society. It has to be done sensibly, carefully, by people who understand it, but I applaud you and other leaders who are trying to do that.

Let me now move to questions that have been asked about the top line of the budget, and I have gotten some handouts from folks who have not yet asked questions, and so I can see some more questions on this are coming.

So, General Milley, if I recall you became head of the Joint Chiefs of Staff in late 2018. Is that correct?

General MILLEY. 2019.

Senator KAINE. 2019.

General MILLEY. 1 October.

Senator KAINE. Were you involved in the discussions around the submission of President Trump's fiscal year 2021 budget, which came to this Committee in February of 2020?

General MILLEY. Sure. Absolutely.

Senator KAINE. So I guess I want to just compare the Biden proposal, President Biden's proposal for defense to President Trump's proposal. My argument is, to some of my colleagues who are trying to attack the Biden budget, it is exactly what President Trump proposed. President Trump gave us a future year defense plan in February of 2020, and it called for a top line of $721 billion for this year. Now President Biden has submitted a top line of $715 billion.

So it would suggest that maybe the Trump budget projection for this year was $6 billion higher than the Biden budget, but that is actually not the case, because under the Trump administration, there was a practice of taking money out of the Pentagon budget for non-military emergencies. Over an 11-month period, between March of 2019 and February of 2020, the Trump administration took $10 billion out of the top line. That straddled two fiscal years, so divided that in half—about $5 to $6 billion a year was taken out

of the Pentagon's budget by President Trump. So the difference between the $715 billion and $721 billion is essentially erased, so long as President Biden doesn't take money for non-military purposes.

I have asked the OMB director, I have asked everybody that I know in the Biden White House, is it the intention of this White House to take Pentagon dollars for non-military purposes, and the answer to that is no. President Biden says if Congress appropriates, I am going to respect the appropriation, and I am not going to spirit monies out of the Pentagon and use them for non-military emergencies.

So my belief is this is a budget that was essentially identical to the budget that we would have seen under President Trump, based upon the Trump numbers that were submitted to us over a year ago. When those numbers were submitted to us, I did not hear anyone on this Committee complain about President Trump did not have a high enough top line. We ultimately control what the number will be, but in terms of the difference between the two administrations and their budget submissions to this body, I would argue that they are identical. President Biden has submitted a top line that is essentially identical to what President Trump would have submitted, based upon the documents they gave us a year ago.

With that, Mr. Chair, I yield back.

Chairman REED. Thank you very much, Senator Kaine, and now let me recognize Senator Rounds.

Senator ROUNDS. Thank you, Mr. Chairman. Gentlemen, thank you for your service to our country. I would like to follow up a little bit and continue the discussion that Senator Kaine has begun, and that is with regard to the top line of the budget. I do believe that this defense budget request, on the whole, is moving in a very similar direction that we had before, with regard to trying to follow through with the National Defense Strategy, the NDS. I think, and I would like confirmation, and I will begin with General Milley, that this particular budget is focused on achieving the major goals that are found in the NDS from 2017.

General Milley, could you share a little bit about, in terms of what those major goals are and the priorities are in the NDS that this particular budget is trying to achieve?

General MILLEY. Sure, Senator. The NDS, as it was written, and that was under Secretary Mattis and I was, at that point, Chief of Staff of the Army, and all the Joint Chiefs participated in that, that is a rigorous document, it is well thought out, and it stood the test of time. We all still use it as a guiding light, and we are under a review with Secretary Austin and we will see how that comes out, but there will be modifications. The document is 4 or 5 years old now, so there will be some modifications to that.

But it is still good, and the fundamentals of it emphasize readiness, modernization, lethality, allies, partners, irregular warfare. It calls out China, Russia, Iran, North Korea, counterterrorism. So the main structures are more or less still valid, and perhaps China is a little bit more advanced now that they were, say, 5 years ago. So it is still a fundamentally solid document.

But I would tell you, as I said in my opening statement, the $715 billion budget requires hard choices in terms of prioritization, but

I think it adequately meets the needs in terms of the priorities of the current, existing NDS and the one that we are working on modify under Secretary Austin's signature. So I am very comfortable that we can provide an adequate defense of the United States of America with a $715 billion budget.

Senator ROUNDS. I understand the direction and the fact that you have been involved in establishing and that your input has been involved in the development of this budget. But I also note that I think nuclear command and control upgrades are critical, and would be recognized under this as well, would it not?

General MILLEY. Yes, absolutely.

Senator ROUNDS. The continued development and modernization of the nuclear triad would also be involved, would it not?

General MILLEY. Absolutely. In fact, we have said that the recapitalization of the nuclear triad is the number one priority in terms of the actual programs, programmatic spending. It is critical that we have the air, sea, and land components of that triad in order to maintain the security of the United States going forward.

Senator ROUNDS. See, General, I think that the basic goals of the NDS are represented within this. I do not disagree with that. My concern that I will express is that it is based on being able to handle those goals but also being able to maintain and not expect the Members of the armed services to continue to do the day-to-day operations if we have increases in inflation, whether it be for fuel or for other supplies, for health care, and so forth.

General, I think there were some very hard choices made, and I guess my question to you, sir—and I do not intend this to be a gotcha question—the hard choices that had to be made in order to achieve the top-line goals of the NDS, where are the reductions or the limitations that have to recognized when we do have a very similar—in terms of the total number of dollars—when we do expect that inflation will run perhaps between 3 and 5 percent, and at the same time the NDS expected to have, and in order to meet its goals, an ongoing increase of between 3 and 5 percent over inflation, which clearly is not reflected in the budget, and I know is not news to you, sir.

General MILLEY. Sure. I mean, you could do the numbers a lot of different ways, and we have Mike McCord here, and he knows it better than anyone else. But this budget is about $11 billion more than the fiscal year 2021 enacted budget. If you factor in inflation, you normalize the dollars, it is more or less flat, or I think it is 0.5 less, or something like that. So it depends on which way you look at the numbers.

But in terms of the key capabilities, Senator Kelly mentioned 42 A–10s getting divested. We had to make a choice between buying two subs, one destroyer and a frigate versus two destroyers, and things like that. So there are hard choices in all of the domains, and this is my sixth budget. In every single budget I have seen we are always making hard choices. We always have unfunded asks (UFA) lists. We always have ways to spend more money effectively for the defense of the country. But in my professional opinion, a $715 billion budget, as long as we are disciplined in its application and we adhere to the priorities that we have established, will provide for the defense of the United States.

Senator ROUNDS. Thank you, sir. Mr. Chairman, my time has expired. Thank you, gentlemen, for your service to our country.

Chairman REED. Thank you, Senator Rounds. Now let me recognize Senator King.

Senator KING. Thank you, Mr. Chairman. Mr. Secretary, I want to discuss just for a moment one of those hard choices. The top Navy unfunded priority is a destroyer that was eliminated from the budget, that was already committed to under the multiyear procurement. That has several problems, one national security. These destroyer, guided missile (DDG) destroyers are the workhorse of the Navy, eyes and ears around the world, very important part of our assets. But it also sent a shudder through the industrial base. It is unprecedented, in my experience, that a multiyear has been breached, which would actually cost the government money in penalties. I hope, Mr. Secretary, that you and Admiral Michael Gilday can work with us to restore that ship, because I think it has importance beyond just the one ship. But the symbolism of breaking a multiyear and also pulling back on our commitment to increasing the capacity of the Navy is, I think, a very important priority.

That is not really a question. It is an entreaty to you to work with us to try to find the funds to restore that ship and restore the Navy's number one unfunded priority. Will you commit to working with us on that?

Secretary AUSTIN. Absolutely, Senator. We will do everything we can to make sure that we maintain a good working relationship with Congress, and I appreciate your tremendous support throughout, and especially now. We want to make sure that we maintain a ready, capable, and sustainable force. We also want to make sure that the industrial base has the ability to produce what we have asked them to produce. Current plans are to buy that DDG in 2023.

Senator KING. Thank you. The importance of the industrial base—I live within 8 miles of the industrial base in Maine, and the industrial base is not something you can just turn off and on. It has got to be something that is sustained and maintained over time.

Let me turn to a different topic. I believe one of the most serious risks this country faces today is accidental conflict with China, some kind of conflict in the South China Sea, the Strait of Taiwan, and the danger of escalation from that accidental conflict of some kind. It is concerning to me that we do not seem to have an effective hotline, direct line, whatever you want to call it, with China, officials at your level and also at the Presidential level. I understand the Chinese are reluctant about this, but I believe this should be a national security priority. I looked up yesterday and I find that Amazon has 11 copies of The Guns of August in Chinese, and I think what I might do is buy those and send them to the Politburo in Beijing, because this is a very clear and distinct danger.

Do you agree with me that a better deconfliction link between military-to-military and also government-to-government with China would be an important mitigation of this risk?

Secretary AUSTIN. I absolutely agree with you. As we look at some of the aggressive behavior that we have witnessed from China in the Indo-Pacific, you know, I am concerned about some-

thing that could happen that could spark a crisis. I think we need the ability to be able to talk with both our allies and partners but also our adversaries, or potential adversaries. I think there needs to be a direct line of communication, between the military and also between government officials as well. So I share your concern and I absolutely agree with you that this is critical.

Senator KING. Thank you. One other area that has come to my attention. In fact, we had a hearing yesterday on missile defense, and General Glen VanHerck said he had to pry the data out of another agency. We had Goldwater-Nichols, which has enabled joint operations. We do not necessarily have a joint capability acquisition, particularly in the area of software. I hope that we might work with you and General Milley and others on how to rationalize, if you will, the joint acquisition of things like software so that we do not have silos within the military, that are analogous to the silos that we had pre-Goldwater-Nichols. Is that something that you will be willing to work with us on?

Secretary AUSTIN. Absolutely. I think it is critical, and you have my commitment to do so.

Senator KING. General Milley, I am sorry I did not get my questions to you but perhaps we will have a second round. Thank you very much.

General MILLEY. I am okay with that Senator. Thank you very much.

Chairman REED. Thank you, Senator King. Senator Ernst, please.

Senator ERNST. Thank you, Chairman, and gentlemen, thank you very much for being here today and for your continuing service to our great United States of America.

Superior weapons personnel and technology ensure that we won the 20th century, but of course, now our adversaries have adapted their technologies, they have improved their operating concepts, and they have expanded their challenges into the new domains of cyber and space, and, in fact, President Biden has stated, "The world is at an inflection point with shifting global dynamics and emerging crises that demand attention."

We, of course, know that we face emboldened adversaries such as Vladimir Putin in Russia and President Xi Jinping in China. Both are actively seeking to disrupt a stable and prosperous global order, and then, of course, we have other actors like Iran and North Korea presenting their own significant threats. As we are withdrawing from Afghanistan we do not see the removal of terrorist threat. Instead, we see, as the President has stated, the threat has become more dispersed, metastasizing around the globe.

So of course we want to make sure that we are funding and resourcing our troops appropriately, but going along with taking care of our own troops is working with other allied nations. Secretary Austin, in a March editorial the Washington Post, you wrote about the importance of joint partnerships with other nations, and called them force multipliers. I do agree with you, Secretary. You wrote, "It would be a huge strategic error to neglect these relationships, and it is a wise use of our time and resources to adapt and renew them, to ensure there are as strong and effective as they can be." Yet, the President's defense budget guts our partner nation

joint exercise budget compared to the pre-COVID levels by over 50 percent.

So how do you square your advocacy for improving our interoperability with our NATO allies and theater partners around the world with those proposed cuts?

Secretary AUSTIN. Well, certainly with respect to NATO we are encouraging the members of NATO to do more, to invest in air defense and also to do more to contribute to NATO overall.

What we have been focused on is making sure that—you know, you have heard me say that China is our pacing challenge, and so we really weighted our main effort there to the Indo-Pacific region, and you will note that my first trip overseas was out to the region, along with Secretary Blinken, and we visited South Korea, we visited Japan, and also made a visit to India as well.

Again, we truly value the importance of strong relationships with our allies and partners. I think there is a great capacity that can be leveraged there, and so in some areas those partnerships, while still strong, are not as strong as they could possibly be, so we will remain focused on that.

Senator ERNST. I do hope so, Secretary. I think this is a really important area to focus on, making sure that we are able to leverage them and continue to use our allies as this force multiplier.

Mr. Secretary, I also wanted to just make a brief statement. I do appreciate that you have stated your commitment to making changes to how the military handles and prevents sexual assault, and I am concerned about the continued delay that we continue to face, though. Certainly if any of our adversaries were attacking members of our military, as we have seen within our own ranks, members attacking other members within our own ranks, if it had been an adversary we would have responded immediately. We must respond immediately as well. So I am encouraging both you and the chairman to continue to push on this issue, to make sure we bring resolution and justice for our members of the military, those very important survivors.

Just a brief statement, and I am sorry, General Milley, I did not get to my questions for you either. Secretary McCord, I will follow up with you later on the audit. But I do want to echo concerns that were raised by Senator Fischer about the Navy's intent, whether it was an interoffice memo, whatever it was. I do also want to stress my concern that the Navy intends to cancel development of the sea-launched nuclear cruise missile. I think this is very, very concerning, especially coming from an Acting Secretary that has yet to be confirmed, and I hope that that is truly not reflective of the overall attitude of the Department of Defense.

Thank you, Mr. Chair.

Secretary AUSTIN. It is not, Senator, and as we said, we will be true to our posture review and make sure that that drives the process.

Senator ERNST. Thank you.

Chairman REED. Thank you, Senator Ernst. Now let me recognize, via Webex, Senator Warren.

Senator WARREN. Thank you, Mr. Chairman. Thank you all for being here today.

Secretary Austin, during your confirmation process you disclosed that you were on the board of Raytheon Technologies, one of the Nation's largest defense contractors, and that caused me to ask you for some commitments about ethics issues that you would face. Existing ethics laws already require some commitments but they do not go nearly far enough. This matter a lot because the Pentagon spends $360 billion every year on goods and services provided by contractors, and those contractors have a revolving door with the DOD.

So that is why I have introduced legislation to strengthen ethics rules for all public officials. But it is also why I asked you during your hearing to extend your recusal from matters involving Raytheon for the duration of your government service. I asked you to pledge not to seek a waiver of that recusal, and to refrain from seeking compensation from a giant defense contractor within 4 years of leaving government service, and you agreed to make those commitments, and I want you to know, I appreciate that. I think the American people appreciate that too.

Secretary Austin, as I recall, you explained that you voluntarily made these commitments because you think it is important that the American people have concrete assurance so that they never doubt that you are working for them and not for giant defense contractors. Right?

Secretary AUSTIN. Yes. That is true.

Senator WARREN. Good, and I just want to say, I also asked several Trump nominees to make the same commitments, and they refused. You, by contrast, demonstrated considerable leadership in making those commitments.

Now, since your confirmation, the Senate has confirmed five additional nominees to go to work at the Pentagon. Not a single one of them was on the board of a major defense contractor, none of them reported that the bulk of their income came from our most powerful contractors, and I appreciate that and I supported all of their nominations.

But this Committee is now being asked to consider nominees who do not meet that test, and in these cases, when nominees report the vast majority of their income from major defense contractors, either through direct employment or consulting, or when they are on those companies' boards, I plan to ask nominees to make the same voluntary ethics commitments that you did during your confirmation.

So let me ask you, Secretary Austin. Do you agree that the people working for you, who have similar or even more extensive ties to industry, should be living up to the same ethics commitments that you made? Do you think it is important that the American people have confidence, as you put it, that these Pentagon officials are working for the American people and not for their former employers in the defense industry?

Secretary AUSTIN. Well, Senator, you have heard me say, on a number of occasions, that sound, ethical behavior is important to us, important to me, and important to the Department. I have every reason to believe that those who have been nominated to serve will conduct themselves properly and exercise sound, ethical behavior, and I am truly appreciative of your support in getting our

nominees confirmed as quickly as possible. We absolutely need them on the team.

Senator WARREN. Well, let me say, though, I recognize the importance of filling these important Defense Department positions, but I am asking for commitments that they are going to avoid conflicts of interests, and I have laid out what they are, and you have agreed to them. So the question I am asking is whether you think that the people who are going to be working for you who have these ties should make the same kind of commitments that you make.

Secretary AUSTIN. Senator, again, I believe that they will conduct themselves appropriately. I have no concerns about their ethical behavior. I think that they are committed to doing the right things.

Senator WARREN. Well, look. I appreciate that you do not want to step into this, but this is what leadership is about. I am still in conversation with the current nominees, where I think these commitments are warranted, and I hope that we can come to an understanding as their nominations progress. If we can, I will support their nominations. But in these cases and going forward, if nominees with significant ties to the defense industry refuse to make the commitments you made, then I will vote no in this Committee, on their nominations, and I will ask for a roll call vote on the floor where I will vote no again.

So let me be clear. I am asking for these commitments, not because I am challenging anyone's integrity but because I think it is critical that the American people have total confidence that our public officials are truly working for them and not for the defense industry that has paid them so well.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Warren. Let me recognize Senator Tillis, please.

Senator TILLIS. Thank you, Mr. Chairman. Thank you, gentlemen, for being here. I want to go back to the discussion of the UCMJ and what is described as military sexual assault. It is an area I am frustrated with. I have spent a lot of time with Senator Gillibrand. But, Secretary Austin, I am concerned that even when we have the discussion here people think we are just talking about military sexual assault. But we are talking about alleged crime that would have a sentence of over 1 year. So that is a sweeping change to the UCMJ.

I am also concerned with some of the technical aspects that have not been spelled out in the bill. It is more of a framework. We have not seen the details. But one of the things that I am most troubled by is the 6-month implementation time frame. In your judgment, to the extent that you know the details of Senator Gillibrand's proposal, is that even possible to be implemented?

Secretary AUSTIN. I don't know all of the specific details of her proposed timeline. What I would tell you is—and I would echo what I said to the chairman a couple of minutes ago, is that any change that we make, Senator, I would hope that we would be provided ample time to make sure that we properly and appropriately implement these changes, because a change to the UCMJ is a very significant issue in the military. We want to make sure we get this right, and we will get it right if a change is required.

Senator TILLIS. General Milley, do you think maybe taking crimes that could be barracks larceny out of the chain of command is a good idea, and would put us in a position where good order and discipline on the part of the command would be undermined?

General MILLEY. As I mentioned to Senator Gillibrand before and some others earlier, I think the commander is essential to maintaining good order and discipline in the military. We are a military that is built to fight. The UCMJ is there to support combat power. At the same time, cohesion is critical, and I am very, very open to significant change in the area of sexual assault and sexual harassment. When we get beyond that, at this point my position is I need to study it more. I am open-minded, but I think we would be really—it needs a lot of due diligence before we bundle all the 1-year felonies and take them away from the commander. So I think it is right to study it further.

Senator TILLIS. General Austin, I think you have heard from some of us about the need for a timely report back on the commission findings and the DOD recommendations. With the mark-up coming up next month, I think it is very important that we get that feedback if it is to have any impact on what may likely be in the National Defense Authorization (NDA) mark.

Secretary AUSTIN. You are right, Senator, and I understand your sense of urgency. I share that sense of urgency. As you know, the Independent Review Commission is still evaluating the other three lines of effort, that include prevention, victim care, and also climate. I will get those shortly, and when I do I will make my recommendations to the President, and those recommendations will be based upon what I get from the IRC, plus my consultations with the leadership of the Services.

Senator TILLIS. Thank you. Jumping to budget matters, the immediate response force—I know you know; you have spent some quality time, you and General Milley, down at Fort Bragg—it was deployed back in 2019, after the Iranian-backed Hezbollah attacked our embassy in Iraq. The reports that I have got on the ground there is the folks from the 82nd Airborne that would be a part of the response spent pretty much the day going over what you all know is a big complex, getting ready to do it, at the expense of briefings and preparation.

The strategic deployment complex is not yet even on the unfunded priorities list. Why is that?

Secretary AUSTIN. I will look into that, Senator. I do not know why the Army has not put that on their unfunded requirements list, but I am sure that the Army's choice is based upon the input they have gotten from the 18th Airborne corps commander and others. But I will engage the Army on that.

Senator TILLIS. I will submit a question for the record, because I am concerned that in an instance where we may have to once again send out an immediate response deployment request that they are not the best prepared that they could be for it. I would like to get that reported back, and I will submit other questions for the record.

Thank you, Mr. Chair.

Chairman REED. Thank you, Senator Tillis. Senator Hirono, please.

Senator HIRONO. Thank you, Mr. Chairman. I have had a number of opportunities, Secretary Austin, to raise my concerns about the fact that Homeland Defense Radar-Hawaii (HDR–H), the missile defense radar for Hawaii, has been zeroed out over the last two fiscal year requests, and so in response to some of my concerns raised about the fact that there is no funding requested for this radar, which was told to us that it was going to be very important as part of our system to protect Hawaii, I am told that under the current situation, currently protected against today's threats, that is the response I have gotten, Secretary Austin.

But what we are looking at is we need to protect against future threats, i.e., 2025 threats. So I am going to want to have further discussions with you and your team as to what the projected dangers are, going to 2025. I recognize that Hawaii is protected under today's threat but not necessarily 2025, and that was the time frame in which this radar was determined to be necessary for our national security. So I do not want to get into further discussion with you on the explanation as to why it was zeroed out.

Let me move on to support for the Pacific Deterrence Initiative. The PDI was enacted last year to ensure that DOD prioritizes and invests in an often overlooked but critical components of joint readiness. In fact, with regard to the PDI, the previous commander of INDOPACOM, Admiral Philip Davidson, identified five areas of focus in the PDI. One, the Joint Force technology; two, force design and posture; three, strengthen allies and partners; four, exercises, experimentation, and implementation; and five, logistics and security enablers.

Looking at your budget request, though, I do not see requested items in the five areas that Admiral Davidson had identified as being supportive of the PDI, and, in fact, your request identifies platforms like a Navy destroyer, fleet oiler, and items related to the F–35 aircraft as PDI investments.

So I would like to know, why is the vast majority of funding identified to support PDI unrelated to the lines of effort outlined in the United States Indo-Pacific Command (INDOPACOM) Section 1251 report?

Secretary AUSTIN. Senator, let me say, off the top, that our intent was to align our PDI investment with congressional intent, and so my staff is currently working with the Committee to clarify and adjust any perceived misalignments, and, in fact, make sure that we answer any and all questions, and so we will continue to work that.

As you know, we have dedicated some $5.1 billion to PDI, and again, our intent was to align our investments with congressional intent.

I will go further to say that a great deal of the Department's budget is invested in capabilities and activities that concentrate on deterring China, and I would further say that I am committed to working with the Committee to making sure that we get it right and answer the needs of the commander out in PACOM.

Senator HIRONO. Mr. Secretary, I appreciate that commitment toward aligning to congressional intent with what the combatant commanders are requesting, and I think that alignment needs to be much better. For example, the DOD is only partially funding

INDOPACOM's top three priorities that are important to deterring China, since you mentioned that just now.

Moving on to the importance of military construction, and funding, of course, is very critical to what we need to be doing. I have had conversations with your team regarding the need for a shipyard modernization and infrastructure support for that, including a new dry dock for Hawaii. Now I know that there is a request for dry docks in Portsmouth, and there is money also for saltwater purification system in Norfolk. This is in front of requested funding to move the dry dock for Hawaii along.

I would request that you take a look at that. It is very clear that the dry dock in Hawaii is very necessary for the Hawaii Pearl Harbor shipyard to be able to take care of the Virginia-class submarines that are there. We have no capacity to do that right now, and so that dry dock needs to be moved along. So I request that you look at the funding request to see whether you can move the appropriation request for the dry dock in Hawaii along.

My time is up, but I hope that you will continue to discuss that particular concern with us and address my concern.

Secretary AUSTIN. I understand, Senator, and we are committed to making sure that we maintain the ability to maintain and sustain our force, and so I will take a look at that.

Senator HIRONO. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hirono. Let me now recognize Senator Cramer, and also alert all of my colleagues there will be two votes beginning at 11:30, and also I believe the panel sought a break around that time. So in talking with the ranking member we will figure out a strategy to accomplish all those objectives.

Senator Cramer, please.

Senator CRAMER. Thank you, Mr. Chairman. Thanks to all of you for your service and for being here. Good to see you.

I want to start, Secretary Austin, by following up from an answer that you gave to Senator Shaheen earlier about further support for the Afghan forces, and you specifically mentioned ISR support from the GCC, and I am wondering if you could tell me specifically what kind of ISR support that is, what system.

Secretary AUSTIN. Certainly we are flying our MQ–9s from there, and essentially the vast majority of ISR is being provided from other places outside of Afghanistan. You know, as we have retrograded we have had to make sure we protect our key platforms and systems there.

Senator CRAMER. Are Global Hawk Block 30s part of that?

Secretary AUSTIN. That is correct, yes.

Senator CRAMER. You realize the Block 30s are slated for retirement in this budget? You and I have had this discussion before. I am concerned about the lack of a bridge between where we are today and where we are going to get to eventually with new systems. You have tough choices, and we have heard all about the difficult priorities you have to set. But I remain concerned about the retirement of Block 30s prematurely, to benefit our combatant commanders everywhere, but I think the Afghan stand presents a rather unique example of the threat.

With that, General Milley, could I ask you, are the combatant commanders getting all of the ISR support that they need, in every theater?

General MILLEY. I would tell you that as Chief of Staff for the Army for 4 years and Chairman for almost 2, no combatant commander has ever gotten all the ISR they wanted. It is one of those commodities that is a high demand all the time, and no one is completely ever satisfied. Every commander wants perfect knowledge, and that is what ISR does is feed you with knowledge. But we are never going to get enough ISR to fill all the demand.

Having said that, it is all a function of risk. It is all a function of where you take risk, what your priority is, are you going to support the main effort, and what do you for the supporting effort, and so on and so forth. In this budget, I think that we are adequately funding ISR as we go forward, for the main effort relative to China, and with respect to the Block 30s and the MQ–9s, again, it has to do with relevance and pivoting to the future. This budget biases future operating environment, change in the character of war, and against the pacing threat of China. That is not to say we are going to stop everything with respect to A–10s or MQ–9s or some of these systems. We have got to make that turn.

Senator CRAMER. So since we are on the topic, if you could list the top three threats to America's national security, in order, what would they be?

General MILLEY. From a military standpoint, strictly military standpoint, I think China is the number one military threat as we go forward, but I also knowledge that Russia is a considerable great power competitor, and those two, in the NDS, and in the current strategic environment, from a military perspective. There are many, many threats, but from a military perspective I put those two up there.

Senator CRAMER. I understand. One of the things I want to get at, because I think it was just yesterday President Biden announced, when he announced America is back, in Europe, to military men and women Air Force in the United Kingdom, that according to the military leaders that the number one threat facing America's national security is climate change. Six weeks ago today, the European Union Parliament, speaking of NATO and allies which are a prominent part of your testimony in this budget, EU Parliament passed a resolution, 569–67, urging the EU institutions and member states to do everything they can to stop the completion of the Nord Stream 2 pipeline. Three weeks ago today, President Biden lifted the sanctions on completing the Nord Stream 2 pipeline.

I am just kind of wondering—that flies in the face both of America's back and it flies in the face of building NATO alliances, rebuilding, as the budget document states—I am not sure which ones we lost—but I know that there are at least eight European union allies, including Ukraine, who strongly oppose Nord Stream 2 for national security reasons, and certain from climate change standpoint. If climate change is the number one threat facing America's national security, allowing Nord Stream 2 to be built is not good for the climate.

So I have some great concerns, and I think we ought to get them straightened out. I do not know, for the life of me, how completing Nord Stream 2 helps our alliance with the European Union, other than maybe with the current Chancellor of Germany.

General MILLEY. Senator, if I could just——

Senator CRAMER. Please.

General MILLEY.—make a comment on your piece about threats. Climate change is a threat. Climate change has significant impact on military operations, and we have to take it into consideration. Climate change is going to impact natural resources, for example. It is going to impact increased instability in various parts of the world. It is going to impact migrations and so on. In addition to that, we have infrastructure challenges here at home—witness some of our hurricanes. So climate change does impact.

But the President is looking at it at a much broader angle than I am. I am looking at it from a strictly military standpoint, and from a strictly military standpoint I am putting China-Russia up there. That is not, however, in conflict with the acknowledgement that climate change or infrastructure or education systems—national security has a broad angle to it. I am looking at from a strictly military standpoint.

Senator CRAMER. I just think it is peculiar that the President would go to another continent and tell our servicemembers there that the number one threat is climate change, albeit a threat.

My time has expired. Thank you.

Chairman REED. Thank you very much, Senator Cramer.

In collaboration with the ranking member, and at the request of the panel to take a short break at this time, I would move to recess for 10 minutes. It also would allow people to go to the vote, which has just been called, and so with that I would ask for a 10-minute recess.

[Recess.]

Chairman REED. Let me call the hearing back to order after the short recess, and recognize Senator Blumenthal for his questions.

Senator BLUMENTHAL. Thanks, Mr. Chairman. Thank you, Mr. Secretary, Chairman Milley, for your extraordinary service, and thank you for being here today.

I have been very concerned about the ship that apparently has been sent from Iran to Venezuela. Apparently two Iranian vessels are believed to be carrying arms intended to transfer to Venezuela. As you know, these ships are thought to be carrying weapons that would fulfill a deal that Iran and Venezuela made a year ago. We do not know the types of weapons, at least as far as I know. There were reports that Venezuela was considering purchasing missiles from Iran, including long-range ones. Commercial satellite imagery of one of the ships shows fast-attack boats loaded on the deck, but it is still unclear whether those boats were aboard when the ships began their journey.

I was pleased to see that a senior administration official stated that delivery of these weapons would be a, quote, "provocative act and understood as a threat to our partners in the western hemisphere," end quote, and that the United States would reserve the right to take appropriate measures, quote, "in coordination with our partners to deter the transit or delivery of such weapons."

Secretary Austin, allowing this ship to dock seems significant to me on many different levels. It would be the first time that Iranian vessels have made such a transit, and the precedent of allowing Iran to provide weapons to the region causes me grave concern. Do you share that concern, and how would such delivery effect the region, in your view?

Secretary AUSTIN. Well, Senator, thanks for the question. I am absolutely concerned about the proliferation of weapons, any type of weapons, in our neighborhood, and so I share your concern.

Senator BLUMENTHAL. Can you tell me whether the administration knows exactly what is on those Iranian vessels?

Secretary AUSTIN. I would like to take that conversation, either that question for the record or we could take that conversation is another forum.

Senator BLUMENTHAL. I would be glad to do it in another setting. Have you had any communication with your colleagues in other nations in this hemisphere?

Secretary AUSTIN. I have not had any discussions with any other nations in our hemisphere on this issue.

Senator BLUMENTHAL. Let me ask you, on the topic of white supremacy and violent extremism, which you and I have discussed both in your confirmation hearings and privately, I understand that there will be a task force report. Can you tell us when that report will be released?

Secretary AUSTIN. I am sorry, Senator. I did not quite hear the question.

Senator BLUMENTHAL. Can you provide an update as to the status of the extremism task force that you announced recently and when this Committee can expect to be briefed on the results?

Secretary AUSTIN. As you recall, Senator, early on in my tenure I asked the force to conduct a brief standdown to discuss the issue of extremism in our ranks, and let me preface what I am going to say by saying that, you know, I am totally convinced that 99 percent of our troops are focused on the right things and doing the right things and embracing the right values each and every day. But as I may have mentioned to you earlier, I believe that small numbers can have an outsized effect regarding this issue.

So we did gain some insights from the standdown, and it was a great opportunity for leaders to have discussions with other leaders, and leaders to have discussions with subordinates, and talk about those behaviors, and we are focused on behaviors, those behaviors that are not supported by the values that we embrace.

In addition to that, we stood up a counter-extremism working group which routinely monitors our efforts across the Department in terms of what we are doing to make sure that we counter extremism or extremist behaviors. They are refining our policies and also gaining a better understanding of the complete challenge. Certainly, you know, I can have the leadership of that working group come to brief you, upon request, or any time you want.

Senator BLUMENTHAL. I would very much appreciate that, Mr. Secretary, and I applaud the efforts that you are making against that probably less than 1 percent, as you said, 99 percent. But I think it is an even more overwhelming majority who adhere to the basic values and are dedicated patriots, and the focus on that less

than 1 percent is well warranted, because they may have an outsized effect. So I would welcome an opportunity to learn more from the task force whenever it is appropriate to do so. I will be in touch with your office, if that is okay.

Secretary AUSTIN. I would absolutely agree with you, Senator, that it is less than 1 percent. We will gain better insights, and also equip our force with better policies and definitions.

Senator BLUMENTHAL. Thank you.

Chairman REED. Thank you, Senator Blumenthal. Senator Blackburn, please.

Senator BLACKBURN. Thank you, Mr. Chairman, and I appreciate that you all are here today.

Secretary Austin, I want to come to you on the issue of nuclear deterrence. When you went through your confirmation hearing we had a discussion about that, and in your advance policy questions you had made a statement, and I am quoting you, "The tipping point where we must simultaneously overhaul these forces is now here." That was your comment in reference to nuclear deterrence. While we are looking at this budget that is before us, we see that modernization is fully funded. But then when you look at deferred maintenance, you see that it cuts hundreds of millions of dollars from the enacted level, the National Nuclear Security Administration's (NNSA's) deferred maintenance budget.

So we know that more than half of the NNSA facilities are over 40 years old. Thirty percent date back to the 1940s. So to me, this sounds like we are at a tipping point when we discuss these facilities. So was that deferred maintenance cut coordinated with DOD, and realistically, what effect will it have on the ability of the NSNA to meet the DOD requirements?

Secretary AUSTIN. To my knowledge it was not coordinated with DOD, and what I would say to you though, Senator, is that it is very important to me and to our Department to make sure that we work with the Department of Energy to ensure that we achieve our common goal of maintaining a robust nuclear deterrent. You have my commitment to make sure that I remain engaged with the Department of Energy (DOE) to make sure that the right things are happening in this regard.

Senator BLACKBURN. Okay. Then let me ask it like this. What are the consequences that happen if we do not modernize and bring this infrastructure, maintain this infrastructure?

Secretary AUSTIN. You have head me say before, Senator, that, you know, I am absolutely committed to the modernization of the triad, and you know that we have dedicated $28 billion in this 2022 budget to that effort. Maintenance is also important, and again, with respect to NNSA, we will remain engaged with DOE to make sure that the right things are happening and gain a better understanding of what DOE's objectives are.

Senator BLACKBURN. Well, you all frequently will say that infrastructure is a part of what you need to retain talent, and I would expect that the enterprise's invaluable workforce, as they are, as we look at 21st century warfare, that it is difficult for them to continue to work in dilapidated and sometimes unsafe conditions. And I would assume that that is a concern to you also.

Secretary AUSTIN. It absolutely is a concern, both for what the issues that DOD controls and also, you know, I am sure it is a concern for all the things that DOE is responsible for as well.

Senator BLACKBURN. Senator Fischer brought up to you the action of the Acting Secretary of the Navy cancelling the nuclear sea-launched cruise missile. So why was this decision made before completion of the nuclear posture review?

Secretary AUSTIN. Again, Senator, I have not seen the memo, but like the Chairman, I will see it very shortly after this hearing. As I understand the purpose of that memo was to issue some guidance for planning and evaluation to the Navy. But again, I am committed to conducting a nuclear posture review that we talked about earlier, and that will be conducted, and that will drive our activities going forward.

Senator BLACKBURN. Well, I think that memo sent a message we did not want to send to Russia and China, when it comes to great power competition.

I did appreciate the Department being on pace to fully fund the PDI, and the concern is the number one PDI ask was the Guam defense system to be fully funded at $350 million. But when you look through this, the funding totals for the defense of Guam procurement and the Guam defense development line items in the budget was $118.3 million, and that is less than half of the money that is required for this, which is the number one unfunded priority, if you will.

So I would like to hear you speak to that. You know, we know that these fusion centers are vitally important. I have done a good bit of work on these multilateral fusion centers, and they serve a critical function of really enhancing our intelligence, our information, our logistical coordination. Future fusion centers are the commanders' number 11 unfunded priorities. These fusion centers also support investments in mission partner environments, the number 2 unfunded priority. So it seems like we have got a pattern that is going there, and I would love for you to address it. I know I am over and there are other waiting for questions, and I would be happy to take that response in writing.

Secretary AUSTIN. We will most certainly get it to you, Senator. Thank you very much.

Senator BLACKBURN. Thank you.

Chairman REED. Thank you, Senator Blackburn. Let me recognize Senator Peters, please.

Senator PETERS. Thank you, Mr. Chairman, and each of our witnesses here today, thank you for your service, and thank you for being here today.

But I want to start first by saying how disappointed—and I will just say, actually, quite angry—at a recent decision made by the Air Force to not award Selfridge Air National Guard Base the F–35 international training mission, and my feelings are based on the data and the criteria that was presented by each of the installations that competed as well as what the Air Force put forward. It is clear, from my review of that, and others, that Selfridge was clearly the superior choice in the matter, and this is clearly a problem that, as we have seen before with the Air Force, as all of you know, the GAO is now investigating strategic basing decisions

being made by the Air Force over the last few years. Without question this Committee, this body, needs to retain confidence that the choices made by the U.S. Air Force are based on data and based on criteria and not at a whim, or whatever may be behind it.

So my question for you, Secretary Austin, is, do I have your commitment that you will review the Air Force's F–35 international training mission decision and we will have an opportunity to talk about that?

Secretary AUSTIN. You do have my commitment that I will review it, as I do all of those types of decisions over time, and I would also offer to have the Air Force come in and brief you on their decision. Air Force typically uses a very detailed process to make those kinds of decisions, and I would offer that politics has no place in this decision-making process, this type of decision-making process. and so, if you desire for the Air Force to come and do a lay-down for you, I am sure that they will be willing to do that.

Senator PETERS. Well, I appreciate that. I have had some of those discussions already, but to make sure that the process is indeed an objective process, it is critically important there is full transparency so that we can see not only how Selfridge ranked, based on that data and the criteria, but also how the one that was selected also ranked, so there could be a true objective comparison of that criteria. We tend to just get one side and not hear the other side. I want to make sure that all of our questions are asked. That is something I assume you would certainly support.

Secretary AUSTIN. Thanks, Senator. My guidance and requirement is that we always try to be as transparent as possible.

Senator PETERS. I appreciate that. While I understand the fiscal year 2022 budget continues to fund per- and polyfluoralkyl substances PFAS remediation, the reality is that the funding requested is not anywhere close to being sufficient to address the contamination that we continue to find in Michigan, and unfortunately hundreds of other sites all across the country. The price tag to address (PFAS) contamination comes on top of what is already a staggering backlog of environmental remediation needs facing the Department.

This is why I have joined my fellow Armed Services Committee members in introducing legislation to expedite cleanup of some of the most contaminated sites and why I will continue to work to implement clear and enforceable standards to guide those.

So Secretary Austin, how does the Department's budget address the management challenge presented by these literally forever chemicals? I know this is not a problem that we are going to be able to solve in a year or, quite frankly, even in the next decade. But the longer we wait to address these toxic contaminations, the higher the eventual cost is to our servicemembers, to our communities, and, quite frankly, to the U.S. taxpayers.

Secretary AUSTIN. Yeah. As you know there are provisions in this budget to address remediation for contaminated sites, and, this will extend obviously well beyond this budget. You have my commitment to continue to work this going forward.

I just recently met with Environmental Protection Agency (EPA) Administrator a couple of weeks ago to focus on this and a couple of other issues. It was a very good meeting. We committed to work-

ing together and making sure that we met the standards of remediation and we had good procedures for remediation.

This is a significant challenge to our country, as you pointed out. You know, DOD is an element of a larger challenge. Obviously, we are not the only source of this contaminant. But I would tell you that DOD is committed to doing its part to remediating whatever damage has been done in every part of this country where we have contributed to this.

Senator PETERS. Well, thank you, Secretary Austin. I appreciate your attention to both of the matters that I raised, and I look forward to working with you.

Chairman REED. Thank you, Senator Peters. Senator Sullivan, please.

Senator SULLIVAN. Thank you, Mr. Chairman, and gentlemen, thank you for your service. Thank you, Mr. Secretary. General Milley, you know how much respect I have for both of you. You have a hard job, especially coming here to defend a budget you probably do not like or did not support internally, but you have got to do it, and that is tough job.

But let me just mention, budgets are a reflection of an administration's priorities. Take a look at this chart. I handed this chart out to you as well, this chart here. The Biden administration, in its $6 trillion budget blowout, clearly prioritizes defense and homeland security dead last. Dead last. If you look at in terms of inflation adjusted it is actually a cut.

[The information referred to follows:]



Now I think a lot of us here, Democrats and Republicans, think national security should be prioritized first, not last. I think you gentlemen probably believe that. But importantly, how can we tell the troops that you are leading that we are prioritizing their mission, which is defending America, when it is clear that the Biden administration's prioritization of their mission is last, a declining defense budget when almost every other agency in the Federal Government is getting a massive, double-digit increase?

Mr. Secretary, do you want to try to take that one on first?

Secretary AUSTIN. Thanks, Senator. What I will tell our troops, and what I have told them and will continue to tell them, is that I truly believe that the President's budget gives us the flexibility to go after the right mix of capabilities to defend the Nation and to deter aggression.

Senator SULLIVAN. No, I mean, I understand that. I have been watching the hearing. I get it. I am just talking about the—and again, it is tough question for you because you are not in charge of these other agencies like OMB and the White House is. But they are clearly not prioritizing the military and national defense relative to any other agency at all. I mean, look at this chart. They are putting the national security mission dead last in terms of the prioritization of budgets. How do we tell our troops that, hey, we are putting you first?

Secretary AUSTIN. Our troops are always first. They are first now and they will always be first going forward. Again, I do believe that we have what we need to go after the right capabilities.

Senator SULLIVAN. Okay. There has been a lot of focus, Senator Cramer talked about this issue of climate change. Clearly our country needs to address this issue. This is a big issue in Alaska. I am always puzzled, though, how our military is task-organized to do this. You know, I had the honor of serving with you at U.S. Central Command (CENTCOM). General Milley, we overlapped briefly in Afghanistan. I do not think in any of my military service I heard climate change as a phrase mentioned once. I heard the Taliban, Iraq, Iran, improvised explosive devices.

Nevertheless, Mr. Secretary, in your opening statement you mentioned climate change 15 times and lethality twice, which I think is a bit of a mismatch.

I was just in South Korea and Taiwan. You guys also mentioned China is our pacing threat. Let me ask a simple question that relates to these two priorities. What is a more immediate threat to our national security interests that DOD has the capability of responding to, particularly in the Asia-Pacific, a Chinese communist invasion of Taiwan or the challenge of climate change? I think it is a pretty simple question. I think it is actually a really simple answer.

Mr. Secretary, do you have a comment on that?

Secretary AUSTIN. Well, first, I do not recall mentioning climate change 15 times. I will go back and do my word count.

Senator SULLIVAN. I think it was in your written statement.

Secretary AUSTIN. Okay, and let me also be clear, Senator, that lethality is important. This is the most lethal force that has ever occupied the planet, and it will remain so going forward. That is what we remain focused on in the Department of Defense, defending this nation, and we will go after the capabilities required to do that.

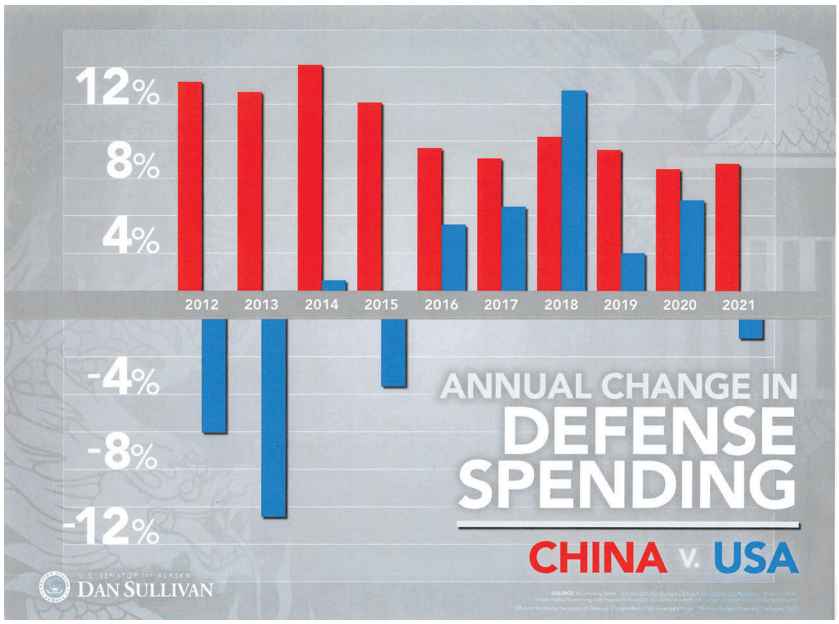
Senator SULLIVAN. So Taiwan invasion by the Chinese Communist Party or climate change? I think it is very simple. What is the most immediate threat DOD can respond to?

Secretary AUSTIN. The most significant military threat that we are focused on, and you have heard me say this probably 100 times, Senator, is China. It is our pacing challenge, and that is what we have asked you, a number of times, to help us resource

our efforts on that challenge, and I appreciate what you have done thus far, and I know that you will continue to help us going forward.

Senator SULLIVAN. Let me ask one final question. Sorry, Mr. Chairman. It is related to that. I have another chart here. It shows that our budget increases or decreases relative to the Chinese. The Chinese have dramatically and consistently increased their defense budget annually by at least 6 percent, sometimes as much as 13 percent. We have increased ours, during the Trump administration, when the Republicans controlled the Senate. You see during the Biden administration, Obama-Biden, it was dramatically cut. Now we are looking at cuts again.

[The information referred to follows:]



What message does this chart send to China and our allies in the region, and can we sustain our declining comparative advantage over China, militarily, if these trends continue? This both for the Secretary and General Milley.

Secretary AUSTIN. Well, a message that I am concerned about is the message that we send to the world, and that is that we are going to continue to go after the capabilities and develop the operational concepts to be able to deter anyone who would venture to take on the United States of America. So we will have the capabilities necessary to defend this nation.

Senator SULLIVAN. General?

General MILLEY. So, Senator, a couple of things. I want to go back and make two points on the budget piece, explaining it to the soldiers, sailors, airmen, marines, guardians out there. We are getting $715 billion if this is passed. That is a lot of money. That is 50 percent of the entire President's budget. That is 1 out of every

2 dollars in the discretionary spending of the Federal Government. That is not a small amount of change. The increases that you show on your chart, those are factually correct, but relative to the whole and in context, we are getting a lot of money. So that is the first thing.

The second thing is relative to climate change. Paragraph one of every operations order I have ever seen for 41 consecutive years says enemy situation to include weather and terrain. We always consider weather, and climate change is weather at the strategic level. It has military impact. We are not going to change climate change. The Department of Defense is not going to change climate change. But we must consider it in on our strategic calculations, all the time, because it is going to increase instability overseas and it has impact on our infrastructure here. So climate change is real.

The military threat is China, as the Secretary just said, is the pacing threat. We are calculating all of our calculations relative to that as the pacing threat, and others are second in nature.

The third piece, relative to the China versus U.S. spending. This is a disturbing trend—there is no question about it—with respect to China. They have made a major economic investment in developing their military. It has been going on for 20 or 30 years. The gaps that used to exist, say 20, 30 years ago, were like this. Today they are like that, and the Chinese have a deliberate plan to be a global challenger to the United States of America, militarily, by mid-century. Now we have got to continue strong investments in our military, and I think this budget, for this year, is an adequate investment right now. We have to set the conditions, though, to pivot to the future character of war with the pacing threat of China.

Senator SULLIVAN. Thank you.

Chairman REED. Thank you, Senator Sullivan. Let me now recognize, via Webex, Senator Duckworth.

Senator DUCKWORTH. Thank you, Mr. Chairman. Good morning, gentlemen. Thank you so much for being here today. Thank you for your service to our country.

While responding to the COVID–19 pandemic, natural disasters and civil unrest, or seamlessly integrating with the Joint Forces and overseas operations, the National Guard and Reserve component continues to answer the call. Over the past 20 years, the high demand for Reserve component forces has necessitated a shift from a strategic Reserve to an operational force. In fact, last June, over 120,000 National Guard troops were mobilized, more than at any time since World War II.

In short, our Nation relies on our Reserve component forces, the Reserves and the National Guard, to defend the United States and fulfill the DOD's national security responsibilities. However, even though the National Guard and Reserves are serving in critical capacities and in dangerous duty assignments, they are not receiving the same pay and benefits as their Active Duty counterparts. The complexity of the current slate of duty statuses adds unnecessary confusion to activating Reserve component forces. The disparity in pay and benefits between different duty statuses can also incentivize manipulating orders to minimize the servicemembers' access to benefits.

I believe duty status reform is necessary to ensure the National Guard and Reserve forces receive equal pay and access to the health care and educational benefits they deserve for the work that they do. Bottom line: servicemembers doing the same job in the same place should not earn different pay and benefits based on their duty statuses.

General Milley, could you please update me on the DOD's plans to address Reserve component duty status reform, and when do you anticipate releasing your findings?

General MILLEY. Thanks, Senator. As part of the Joint Force, Active Duty, Reserve, and National Guard, it is a total force, and we have a commitment to ensure that we have appropriate and fair pay and benefits given to our National Guard troops and our reservists. That reform effort is underway. We are reviewing that. I cannot give you the exact date of when we will have that to you, but we are working it, and we are working it very hard, and we are working it with both the National Guard Bureau and each of the Services. But we do recognize the need to ensure that it is evenly applied in terms of pay and benefits to the soldiers in the Reserve component, or the troops in the Reserve component.

Senator DUCKWORTH. Well, will you also commit to making sure that whatever the reform proposal is that is appropriated shaped to eliminate orders manipulation and current pay and benefit disparities?

General MILLEY. Sure. Absolutely. You know, our commitment is to ensure that everyone who wears the cloth of our Nation, whether they are Active, Guard, or Reserve, no matter where they are, are treated equally in all respects, to include pay and benefits. I commit that to you and I will get you the answer on the exact date of when the reform proposals are due in.

Senator DUCKWORTH. Thank you. Secretary Austin, Reserve component servicemembers are required to maintain the same proficiency in certain critical skill sets as their Active component counterparts, even though they do not necessarily put on the uniform every day. This is especially true for pilots, for example. They only received incentive pay at a fraction of the amount of Active servicemembers.

I believe every servicemember, whether Active or Reserve, deserve to be fairly compensated for maintaining mission-essential skills. The RAND Corporation has shown that incentive pay can help improve retention and is far more cost effective than training new servicemembers to replace those who separate.

As we continue to strengthen our National Guard and Reserve forces, we must retain our talented servicemembers. That is why I introduced the bipartisan National Guard and Reserve Incentive Pay Parity Act, to help ensure that Reserve component servicemembers in high-skill roles are compensated at the same rates as they Active Duty counterparts.

Secretary Austin, will you commit to exploring options such as the Incentive Pay Parity Act, to help improve retention, especially of those servicemembers with critical skills?

Secretary AUSTIN. I will, Senator, and for all the reasons that General Milley mentioned, our Guard and Reserve have done amazing work. The skill sets that you are talking about in many

cases are warfighting or combat-related skills, and so it is absolutely important that they are proficient, and they should receive the same proficiency pay.

Senator DUCKWORTH. Thank you. I have one final question I will submit for the record, but it has to do with modernization efforts to continue across the Joint Force, and wanting to know whether DOD and the military services are factoring in program performance into decisions about how to prioritize budget requests to adequately resource successful programs such as future vertical lift. But I will submit that for the record.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Duckworth. Let me recognize Senator Scott.

Senator SCOTT. Thank you, Chairman. First off, I want to thank each of you for your willingness to serve. You have very significant roles for our country. Probably the most important thing we can be doing is making sure we defend our freedoms.

Would any of you disagree that when you are thinking about Communist China you are thinking about a party that either wants world domination or, in the worst case, wants to absolutely control the Indo-Pacific?

Secretary AUSTIN. I do believe that their goal is to control the Indo-Pacific, and I also believe that they desire to be the dominant to preeminent country in the world, and so I think they are working towards that end.

Senator SCOTT. So would you all disagree that their goal is to eventually take back Taiwan, a great American ally? You wouldn't disagree with that, right?

Secretary AUSTIN. I would not disagree with the point that they have a goal of eventually uniting Taiwan with China.

Senator SCOTT. That would be whether they do it voluntarily or involuntarily, through the military.

Do you all believe that we are going to just continue to see more surveillance by the Communist Party of China of American citizens and our allies around the world? We are seeing more surveillance all the time. You agree with that, right?

Secretary AUSTIN. I mean, it stands to reason that whatever level of surveillance that is ongoing now will continue, and quite possibly increase going forward.

Senator SCOTT. So if you look at this, you saw what Senator Sullivan brought up. You saw the fact that year after year they are investing more in their military. Their goal is to have an economy bigger than ours, and you seem to agree that if they have an economy bigger than ours they are going to increase their defense spending. As General Milley says, it is getting closer and closer.

If China is able to pull this off, then our opportunities all over the world, opportunities of American citizens and our way of life, is going to change, right? If they can do fulfill their goals, then our opportunities will be diminished. Would you all agree with that?

Secretary AUSTIN. You know, I would describe our relationship with China currently as one of competition. Again, you have mentioned that they desire to be the preeminent country on the planet, and that is, in fact, the case. Their mid- to long-term goal is to do that. They look to compete with us, not only militarily but across

a spectrum of activity. What you see us doing, the military and in other sectors in our government, is making sure that we remain competitive, economically, making sure that we are developing the best—we continue to develop the best scientists in the world, and we do the most comprehensive research. So it is a competition across a broad spectrum of activity.

Senator SCOTT. So if you follow through the reasoning, if China wants to be either Indo-Pacific or world dominant, if they build an economy bigger than ours, if they continue to out-invest us in the military, which they are, at least growing faster than we are, then what are you all doing to, one, inform American citizens of the risk, because, you know, we all do a budget based on what the American citizens believe the priority is—that is how we elect our elected leaders. So what are you all doing to, one, inform the public of the risk of Communist China, and ensure them that we have the budget we need to make sure that in 5 or 10 or 15 years we are not sitting here, saying we wish we would have done more, we all saw this threat but we didn't do enough about it?

Secretary AUSTIN. Yeah, just about every time you hear me speak, Senator, I know you probably grow tired of me taking about the competition with China. But that is my focus. My number one focus is to defend this nation and protect our interests. Our pacing challenge is, and will continue to be, China. Again, we are going after the capabilities that can match the operational concepts that we are putting into play and allow us to be not only competitive but actually dominant in this competition.

So that is what the Department of Defense is doing, and I think you see activity across the entire government that is focused on making sure that we not only can compete with China but maintain our edge with respect to China.

Senator SCOTT. Do you think it is important that in your role that you inform the American public of the risk of Communist China so everybody will be more focused on making sure we have the military budget we need?

Secretary AUSTIN. We do so, routinely, and we will continue to do that, Senator Scott.

Senator SCOTT. Thank you. Thank you, Chairman.

Chairman REED. Thank you very much, Senator Scott. Let me recognize Senator Rosen, please.

Senator ROSEN. Thank you, Chairman Reed, Ranking Member Inhofe, for holding this hearing. I would like to thank the witnesses for your service to our great nation. Thank you for being here today.

Right before the break, Senator Cramer was talking to you about our ISR requirements and his concerns, and I am concerned as well about the MQ–9. So, Secretary Austin, the MQ–9 Reaper, I do not have to tell you, it is critical to supporting our current intelligence, surveillance, and recognizance requirements. A key part of the MQ–9 architecture is the mission at Nevada's Creech Air Force Base. Last year, CENTCOM Commander, General Kenneth McKenzie, included additional MQ–9 funding at the top of his unfunded priorities, and in April he told this Committee of the MQ–9's importance and his need for more of them, not fewer.

The Air Force today still lacks the ISR capacity to meet combatant commanders' requirements contained in the 2018 National Defense Strategy. Despite this, the Department has previously proposed cutting this platform, their most cost effective, without a program of record to replace it, which would further risk widening the ISR capability gap that General Milley talked about.

So Secretary Austin, what is the Department's plan for the MQ–9, and given its importance, cost effectiveness, and the requirement for combatant commanders for more ISR assets, why has the Air Force cut funding for this program without a program of record to replace it?

Secretary AUSTIN. Well, thank you, Senator. I think you heard General Milley talk earlier about the way combatant commanders view ISR, having been a combatant commander in a former life. I can tell you I agree with him. There is never enough ISR—I will always want more.

The Air Force has committed to taking off a number of lines of ISR, but they are not reducing the tails, the aircraft, that go with those lines. What they are doing is making sure that they upgrade and modernize their aircraft, where possible, and so that they can network the aircraft better. So the number of tails is not being reduced. The number of lines is being reduced slightly.

Senator ROSEN. So can you get to us some information about that so we know what the program of record will be going forward and how it can impact us?

Secretary AUSTIN. Absolutely.

Senator ROSEN. Thank you. I appreciate that.

I would like to move on to talking a little bit about Iranian aggression, how we combat that, because Iranian-backed militias, of course, are increasingly targeting United States installations, our servicemembers in Iraq, via rocket and drone attacks. Iran continues to be the world's leading state sponsor of terrorism, a threat to the United States allied interests all across the world, be its ballistic missile program, its support for terrorist proxies like Hezbollah, Hamas, kata'ibltezbollah (KH), Asa'ib Ahl al-Haq (AAH), and many others.

According to a recently released annual threat assessment of the United States Intelligence Committee, and I quote, "Iran-supported Iraqi Shia militias will continue to pose the primary threat to U.S. personnel in Iraq."

So to Secretary Austin and General Milley, with the constant threat to the United States and coalition forces in the Middle East posed by Iran and Iran-backed militia groups, what are we doing to counter them, and how are we proactively protecting our forces and personnel? Do we have what we need to do that and prevent them, prevent these militias and terrorists from targeting our U.S. troops in the region?

Secretary AUSTIN. Yeah. We certainly continue to demand that Iran cease its malicious behavior in the region, in terms of its support of the Iranian-backed Shia militia groups, and we demand that they cease providing them modernized equipment so that they can conduct these kinds of attacks. We are doing everything within our power and our capability to make sure that our troops that are forward deployed have adequate protection. We are engaging the

Iraqi leadership to make sure that the Iraqi leadership does what is necessary to help protect our citizens, who are there to help the Iraqi Government.

General MILLEY. So I would say, in addition to everything the Secretary said, is think offense/defense. So in terms of defense, the force protection of the force, the disposition of exactly where they are at, how many they are at, what the hardening of those sites, we are doing all of those measures. In addition to that, we have air defense capabilities—SeaRAMs, counter-rocket and mortar, and counter-unmanned aircraft systems that were put in place. Those have been proven quite effective, actually, against some of the Shia militia groups' capabilities. We are going to continue to reinforce all of that.

On the offense side, I will not discuss it here but I can discuss it in some detail in a classified session as to what we can do, what we are prepared to do, and what we have already done. All of that in combination we think is mitigating the risk. It certainly does not reduce it to zero. It is a dangerous environment. We all recognize that. But we have got to continue to work by, with, and through the Iraqi Government, because they are the first line of defense for the protection of our forces in their country.

Senator ROSEN. Thank you. I just want to be sure that we have assets on the ground to defend American installations in Iraq and Syria——

General MILLEY. We do.

Senator ROSEN.—and other places in the Middle East.

General MILLEY. We absolutely do.

Senator ROSEN. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Rosen. Senator Hawley, please.

Senator HAWLEY. Thank you, Mr. Chairman. Thanks to the witnesses for being here. Thank you for your service, as always.

Mr. Secretary, if I could just start with you. I asked you earlier this year if you agreed with the National Defense Strategy assessment that the U.S. military needs to be postured, and here is the quote, "to deter and prevent a fait accompli by an agile, opportunistic adversary." You responded to me in writing, which I appreciated, and I appreciated the response you gave, which was, you said, and I am quoting you now, "Yes, I agree with the Commission's finding. A combat-credible, forward deterrent posture is instrumental to our ability to deter, and if necessary, deny a fait accompli scenario." I assume you still agree with that.

Secretary AUSTIN. I do, Senator.

Senator HAWLEY. Very good, and would you also agree then, I assume that this would apply to our ability to maintain the ability to defeat a Chinese fait accompli against Taiwan. Is that accurate?

Secretary AUSTIN. That is accurate, Senator. I think nobody wants to see a unilateral change of the status quo with respect to Taiwan. You have heard us say that we are committed to helping Taiwan defend itself, in accordance with the Taiwan Relations Act, the three communiques, and the six assurances. Our position has not changed in that regard, and we will continue to help them develop the capability.

Senator HAWLEY. General Milley, if I could just get you on this as well. Would you agree that the United States should maintain its ability to defeat a Chinese fait accompli against Taiwan, if necessary?

General MILLEY. I absolutely would, but, Senator, frankly, I am not sure what a Chinese fait accompli in Taiwan is. If you are talking about a military invasion of Taiwan, crossing the straits, the Taiwan Straits, with a sizeable military force to seize an island the size of Taiwan against the military that they have and with the population that they have, that is an extraordinarily complex and difficult operation. Even against an unopposed force that is a very hard thing to do. But I can assure you that we have the capabilities if there were political decisions made in accordance with the Taiwan Relations Act and so on. But we do have military capabilities.

Senator HAWLEY. To defeat such an attempted invasion is what you are saying, General Milley.

General MILLEY. Yes.

Senator HAWLEY. Got it. Good. Would you agree, Mr. Secretary, if I can just come back to you, would you agree that we need to be, when we think about deterring China, that we need to be as focused on deterring China in the next 3, 5, 7 years as we are 10 to 15 years from now? I am asking this—the context for this is we have heard now from the outgoing United States Pacific Command (PACOM) Commander, from the incoming PACOM Commander, we just heard earlier this week from the former Deputy National Security Advisor that China is increasingly aggressive and that the window to deter that aggression may be shorter than we had thought.

So thus my question. Would you agree that we need to be focused on deterring them in the short to medium term, 3, 5, 7 years, including the longer term?

Secretary AUSTIN. We do, and I would say that those two issues are not mutually exclusive, Senator. As you know, they complement each other. While we are developing a future capability, we certainly have to bridge to that capability, and that is absolutely our focus.

Senator HAWLEY. Great. Great.

General MILLEY. Senator——

Senator HAWLEY. Yeah, General.

General MILLEY.—I would say the key here is deterrence. We are in a condition of strategic great power competition. It needs to stay at competition, and deterrence is key to prevent it from going from competition to incident or competition to war.

Senator HAWLEY. Yeah, very good. I am glad you mentioned that, and if I could just follow up on that, General. The adversary, the competitor in this case, China, knowing that we have the ability to deter them, we have the ability to do what you said a minute ago, which is if they should choose military aggression, we have the ability, should we choose, to deny that aggression, that is important for deterrence, is it not, them knowing we have the capability?

General MILLEY. Yeah. I mean, in simple terms, I mean, deterrence is actually a very complex thing, but in simple terms you have to have the capability, your opponent has to know you have the capability, you have got to communicate that capability to your

opponent and he has to know it, you have to communicate your will to use it, if necessary, and both actors have to be rational. If all of those components are there, in simple terms, you will be able to achieve a state of deterrence. Thus far, it is achieved.

Senator HAWLEY. Very good. Thank you for that.

Mr. Secretary, let me just ask you in this context then about the Department's request for the Pacific Deterrence Initiative. In your request you include, if I understand it correctly, $23 million for force design and posture improvements, out of the $2.2 billion that is required. I am trying to understand how providing our forces in the Pacific with just 1 percent of the funding they need for posture improvements to support those combat-credible, forward deterrent posture that we are talking about, how can we do that and say that we are going to maintain the ability to deter or deny a fait accompli?

Secretary AUSTIN. Yeah. So Senator, I would flag for you just a couple of issues. The first issue is that, as I said earlier, that our intent is to make sure that with respect to the PDI investment that we meet the congressional intent, and we believe we have invested in a number of things that meets that intent, and we will meet with your staff and explain where the investments are, to make sure that the language is not confusing.

The second thing is we have invested $5.1 billion in the PDI.

The third thing I would flag for you is that, you know, much of what we are investing in, in terms of capability is really focused on our efforts to counter the challenge presented by China. I would also say that when we speak of deterrence, we are not talking about just air, land, and sea. We are talking about using every capability across all domains, to include cyber and space. We are talking about integrating the capabilities of our allies, which I believe is very, very important. We are talking about using every lever that the United States Government has available to it to, in fact, effect that deterrence.

Senator HAWLEY. Thank you very much. I have got some more questions for you on this, Mr. Secretary. I will follow up with you in writing. But I appreciate the opportunity to engage with you on it. Thank you, General.

Chairman REED. Thank you, Senator Hawley. Senator Tuberville, please.

Senator TUBERVILLE. Thank you, Mr. Chairman. Thank you for being here today.

Chairman REED. Put your microphone on, please.

Senator TUBERVILLE. Hello. Hello. Does that work? Good. Thank you. I thought mine was worn out after this long day, Mr. Secretary.

I want to take a little different angle here. I have been a team-builder all my life, and I am on the Veterans' Affairs Committee, and I have been talking my first 6 months here with recruiters out in the field for the military. I am huge military person, military brat, and I grew up in a military family. We talk about missiles and bombs and ships, and you have got to have all of those. But if we do not have the people, the best people we can possibly get, we are going to be in trouble. It is like winning a football game—

the best players win games. There is no doubt the same thing within the military, and we have always had a strong military.

I hear a lot of comments about, "Why should I get in the military? They did not look out for the people in Iraq and Afghanistan on the burn pits." Gentlemen, we have got a huge problem. We are getting ready to spend hundreds and hundreds and hundreds of billions of dollars for veterans that have gone over and breathed that smoke and chemicals and all those things. We have got to make better decisions than that. You know, all that money we are going to get ready to spend, you know, it could have gone to you guys, to defense. But to me it is going to be hard to recruit good people, the best people.

I hear all this extremism stuff, and again, I have dealt with people all my life. You know, you don't have to like each other to be on the team. A lot of my players could not stand other guys on the team. You know, they just had personality conflicts. But at the end of the day, you have got to learn respect. You have got to earn the trust and dedication and all that from your teammates. I mean, you have got to learn that, and so I just hate for us to get off on this tangent of the people that we have in the military.

Now in football, for instance, it is your coaches, when you bring players in you have got to build a team. You have got to bring them together. Same thing in the military. You have got lieutenants, captains, drill sergeants, corporals, all those. Everybody's responsibility is to bring that team together. The things that I am hearing and seeing in the military bases I have been going to the last six months, and talking to recruiters, we are going to have a tough time. Then we have got to face the people in big tech of taking the best and brightest, because cyber is one of the things that we have really got to get into in the military and continue to grow and to build in all of our technology.

You know, that being said, I just want to make sure that we understand, you know, that when we talk about all this equipment and budget and all that—and I understand, we have got to have that. But if we do not have the people it does not make any difference.

We had the Selective Service here a few months ago. They sat right here and they told us that if we had a draft today we would have 35 million people that we could draft from, 35 million. Only 450,000 of those 35 million are eligible to be in the military, for one form or another. That is not enough. That is not enough. We cannot build a killing machine, which is what our military is—you can say anything else. We have got to be able to kill the enemy when they come at us, and so that is just something I have watched and listened, I have been on the road talking, and I want us to have the best military in the world, and we probably do. I want us to fund the best military, but we have got to fund our young men and women that are going to get in the military, and they have got to want to come in. They have got to want to be there. They have got to want to be there for the simple fact that they want to fight for the best country on the face of the earth.

Just one question I have got for you, Secretary Austin. I wrote you a letter, me and Senators Wicker and Cramer, and our concern was disturbing, about training materials coming from our military.

Let me be clear. Like you, we want to see good order and discipline in the ranks, for our military to remain the nonpartisan institution that Americans trust more than any other. But what emerged from some of the Services revealed is a disappointing partisan slant and a poorly defined First Amendment rights for military members.

This year we have seen multiple senior military leaders, in uniform, from official DOD channels, criticize individual members of the press. That ain't got nothing to do with the military. To me, you have just got to go about your business.

We have seen the National Guard march on elected officials here, just down from this building. We ask you to provide a report on what steps your office will take to reprimand officers who inappropriately engage in partisan behavior to ensure that the standdown training materials comply with the guidance issued by your office. We asked for that report no later than May 7th, and we still have not gotten it. I know you have been busy, but we would just like to know, you know, the steps that we are going to take to clamp down on people that do not deserve to be in our military.

I did not want to get up here and rant, but I have been a recruiter all my life, and we have got to be able to recruit people, to spend this money that we are going to appropriate you in the right way, because we are in dire straits. Secretary Austin, could I get that commitment?

Secretary AUSTIN. You certainly have that commitment, and I would also like to offer a thought on what you just said, Senator, and thanks for your continued support of our great military. Again, you have heard me say this a couple of times today. I do not want our force, or anybody else in this country, to be confused. It is the most lethal organization on the face of the planet, and it will remain so, and it will remain the most cohesive organization on the face of the planet.

You know, when I came in as the Secretary of Defense, I issued guidance to the force, and that guidance included three things. My focus is on defending this nation and protecting our interests, the second thing is taking care of our people, and the third thing is teamwork. Like you I have put a couple of teams together too, and I have employed those teams into combat, and I have watched these youngsters do amazing things, in support of their country and in support of each other. It is unbelievable.

I have a pretty good feel in terms of what it takes to create that kind of cohesion, and cohesion is what is most important to me, just like it is to you, Senator. I know you absolutely understand that, and you have demonstrated that you understand that with some tremendous success over the years.

Regarding the burn pits, you know, the welfare of our veterans is foremost in my mind. I mean, that is something that me and the Chairman both really care about. I would tell you that the Secretary of Veterans Affairs, Secretary Denis McDonough, shares that concern. He and I worked together closely on a number of issues, and we have vowed to make sure that we do not lose our veterans as a transition from Active Duty to retirement or get out of the military and go do something else.

I have inhaled those fumes from burn pits. The Chairman has inhaled those fumes from burn pits. We know it is important to

take care of our troops, and you have our commitment to remain focused on that.

But I would also say that this is not just the Army's problem. It is not just the military's problem. This is the issue for the United States of America. These are our troops, and we are going to do everything we can to take care of them, and I know that all the great resourcers and authorizers that are in this room share that same commitment, and we have felt that commitment going forward. I know that it is the reason that you asked that question.

But the question you have is, are we committed to it? Senator, I am absolutely committed to making sure that we do what we can to ensure that this issue is addressed, and I know that Secretary McDonough is working this issue very hard, as well.

Senator TUBERVILLE. Thank you. Thank you for your service. Thank you very much.

Chairman REED. Thank you very much, Senator Tuberville.

This is the second round. I will recognize Senator King, who will ask one question, and he will also preside and conclude the hearing, and then he will recognize Senator Sullivan for one question. I would ask both the questions and the responses be as concise and eloquent as they have been all morning. Thank you very much.

Senator KING. [Presiding.] Thank you, Mr. Chairman. First, just a very brief observation. There has been a lot of talk about budgets and comparisons of budgets and budgets with China. I yield to no one in terms of my determination to successfully compete with China on all fronts. I would point out, though, even though they have had significant increases lately, their budget this year is still less than one-third of ours. I think that is important just to have that context, because we have been talking about growth, but they were showing significant growth from a much lower base.

General Milley, I am gravely concerned about the men and women in Afghanistan who support and aided our troops, and that we are not moving fast enough to be sure that they are brought to safety. I think this is an essential moral commitment of this country, and also a practical one. If we leave these people to the tender mercies of the Taliban, I do not know who is ever going to cooperate and help us again in another setting.

So I hope that both the Pentagon, the White House, and all the agencies of the U.S. Government are committed to this as an urgent priority, an urgent priority, and that if we cannot repatriate all of these people to this country that we at least make arrangements to get them safely out of Afghanistan. Can you give me your thoughts on that, please?

General MILLEY. Well, Senator, first I think the President, Secretary of Defense, the Secretary of State, myself, others, have all commented on the importance of making sure that we keep faith with those that have supported us over the last two decades in Afghanistan, and that clearly is our intent, and we will do that.

In terms of specific actions, Department of State has the lead on the Special Immigrant Visa (SIV) program and some other programs with respect to those Afghans that have supported us. That planning is working through the system right now. But I can commit to you that it is my belief that the United States Government

will do what is necessary in order to ensure the safety and protection of those that have been working with us for two decades.

Senator KING. Thank you. The term "working through the system" is what gives me some concern.

General MILLEY. Sure. I understand.

Senator KING. This is an absolutely urgent priority over the next 6 to 8 weeks, I would say, as our troops draw down. So I appreciate your commitment on that.

Mr. Secretary, I assume you will make absolutely the same commitment?

Secretary AUSTIN. You are correct, Senator. This is very important to us, and we are pushing as hard as we can on our end to move as fast as we can. I know Secretary Anthony Blinken has asked for an increase in authorizations in terms of numbers to move into the SIV process, and I would ask your support in providing that authorization. Again, anything that you can do to expand our current capabilities in terms of authorizations would be very, very much appreciated.

Senator KING. I am sure the Members of this Committee will work to that end, and look forward to working with you.

Senator Sullivan.

Senator SULLIVAN. Thank you, Mr. Chairman, and I share your views, and I know most of the Members of the Committee do, on keeping faith with those who supported us in Afghanistan. Gentlemen, I appreciate you running the gauntlet today. It is an important element of our constitutional oversight responsibilities.

I have one final question. A growing and critical area of great power competition with Russia, certainly, but also with China is our strategy interests in the Arctic. Mr. Secretary, as you know, and General, each of the military services, in some ways prompted by this Committee, have now published an Arctic strategy. I think all of us view this as a positive development. Both of you, during your confirmation hearings, had committed to focus on this area of our national security, to fully resources each of the Service Arctic strategies. Deputy Secretary Kathleen Hicks, through her confirmation process, did the same.

In a Strategic Forces Subcommittee hearing yesterday I had the chance to ask General VanHerck, who is the United States Northern Command (NORTHCOM) Commander, in his role as the designated advocate for Artic capabilities, how he saw each of the Services implementing their respective strategies in the President's new budget submission. He told me that DOD resourcing for the various Service Arctic strategies was, quote, "inching along" but that DOD, quote, "did not move the ball very far down the field with the fiscal year 2022 budget."

So I want to ask both of you, do you share this view, and how can we work to fully resource the Service strategies that have been out, the DOD strategies that have been put out in this important area of great power competition?

Secretary AUSTIN. Thank you, Senator. You know, when we talked before, I indicated to you that the Arctic and Arctic strategy was important to me, and that has not changed. It remains so.

As you know, we are working on developing our National Defense Strategy overall, and also working through to refine our force

posture globally. As we develop that National Defense Strategy, certainly the Arctic will be an area that we will take into consideration and make sure that we have the right emphasis, the right focus, and that strategy will drive our resourcing.

Senator SULLIVAN. Thank you. General Milley, do you have a view?

General MILLEY. Yeah, absolutely. We are committed to the Arctic strategy, and, you know, this whole issue with the Arctic is a classic example of the strategic military impact of climate change. As the snowcaps melt, the ice packs melt, it is exposing further resources. The Russians and Chinese are realizing that, so they are clearly trying to exploit some of that. We are going to see increased, not decreased, great power competition in the Arctic over time, and we do need to resource, full resource the Arctic strategy.

Senator SULLIVAN. Thank you. Thank you, Mr. Chairman.

Senator KING. Thank you. I would like to associate myself with Senator Sullivan's questions on the Arctic. It is an incredibly important strategic area. I appreciate your commitments.

With no further questions, and I understand the decision has been made not to go to an additional closed session, so I want to thank our witnesses for their testimony today, for your forthrightness, for the information that you have shared, and most of all, for your service to our country.

With that this hearing is adjourned.

[Whereupon, at 12:55 p.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR GARY PETERS

DEFENSE COMMUNITY INFRASTRUCTURE PROGRAM

1. Senator PETERS. Secretary Austin, as co-chair of the Defense Communities Caucus, I was pleased to see Defense Community Infrastructure Program (DCIP) included in the budget request. As you know too well, our installations are no longer islands unto themselves and recent events like the pipeline disruption and severe winter storms make obvious the need for resilient and secure infrastructure, especially for our military bases. The DCIP program was specifically designed to provide you with tools to address these issues, while leveraging state and local dollars. Do you believe that the Department of Defense (DOD) is adequately using this program?

Secretary AUSTIN. Yes, the Department is using the Defense Community Infrastructure Program (DCIP) to competitively select projects that address deficiencies in community infrastructure, supportive of a military installation, in order to enhance military value, installation resiliency, and family quality of life. In fiscal year 2020, the DOD awarded sixteen grants totaling $49.8 million, and each of these projects is on schedule to start physical construction activities by the end of September 2021. DCIP is also on schedule to execute its fiscal year 2021 budget of $60 million. The proposal submission deadline for the fiscal year 2021 DCIP Federal Funding Opportunity closed on July 12, 2021, and submitted proposals are in the process of being screened, evaluated, scored, and ranked. Selected proposers will be contacted and offered the opportunity to submit a grant application.

2. Senator PETERS. Secretary Austin and General Milley, are you putting enough emphasis on working with defense communities to address critical issues facing our military today?

Secretary AUSTIN. The Department continues to build partnerships with our defense communities that are crucial to the viability, resiliency, and sustainability of our local installations, missions, and defense industrial base. Often, the same issues confronting our military (including but not limited to energy resiliency, public services, cybersecurity, and encroachment) are also challenging to our civilian neighbors and require a "whole of community" approach to solve. We welcome opportunities

to broaden these partnerships that underpin the quality of life and well-being of our servicemembers and their families.

General MILLEY. I recognize the value in equipping municipalities and cooperatives, the smallest elements of local government, with the tools necessary to enable successful defense of the homeland. I fully support the Secretary's Defense Community Infrastructure Program (DCIP), which is designed to address deficiencies in community infrastructure, supportive of a military installation, in order to enhance military value, installation resilience, and military family quality of life.

3. Senator PETERS. Secretary Austin and General Milley, while studying how cyber-originating disruptions can impact force projection, the Army Cyber Institute's Jack Voltaic Project developed a software-based framework for local governments to rehearse their cyber incident response capabilities. Do you see value in equipping municipalities with solutions like this through a DCIP-like process?

Secretary AUSTIN. This software, while still in development, has potential for use by non-DOD entities. We will engage our Federal partners, who have the lead in coordinating with these entities, to consider whether it would be complementary to their ongoing efforts to improve energy and cyber resilience.

General MILLEY. Providing communities programs like JACK VOLTAIC through a Defense Critical Infrastructure Program-like process is important not only to the communities involved but also to maintaining our national security. Events like the ransomware attack on Colonial Pipeline continue to demonstrate how interconnected our society is and how an attack on critical systems can impact our day-to-day lives. The ability to wargame these scenarios, identify weaknesses in our policies and procedures, and create solutions is vital to everyone. We believe that JACK VOLTAIC is a step in helping to improve our communities', and by extension, our Nation's resilience.

The Joint Staff recognizes the value in equipping municipalities and cooperatives, the smallest elements of local government, with the tools necessary to enable successful defense of the homeland. Building capacity to protect the homeland and enable a quick response from the Nation's defensive forces requires a multi-layered approach that considers authorities and the importance of other Government Departments in reaching solutions. The Defense Critical Infrastructure Program (DCIP) represents a successful process to support local initiatives and can provide a blueprint.

DOD SUPPORT TO THE DEPARTMENT OF HOMELAND SECURITY

4. Senator PETERS. Secretary Austin and Secretary McCord, in February 2021, the Government Accountability Office (GAO) released a report titled "Southwest Border Security" (GAO–21–356) which found that DOD developed unreliable cost estimates for its support to the Department of Homeland Security (DHS) at the southwest border. Since DOD is currently considering a request from DHS to extend the military's border mission, I am concerned DOD could inadvertently adopt the previous flawed estimate process. How are you factoring the border mission into the defense budget?

Secretary AUSTIN. Other than specified exceptions such as support for counterdrug activities and activities to counter transnational organized crime pursuant to 10 U.S.C. §284, the Department of Defense (DOD) does not program and budget for support of other Federal departments and agencies, including DOD support of the DHS border security mission.

DOD support of the DHS border security mission is provided in accordance with Chapter 15 of Title 10, U.S. Code, and Section 1059 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), as amended. DOD support provided pursuant to Chapter 15 is required to be on a reimbursable basis. However, Chapter 15 authorizes the Secretary of Defense to waive reimbursement if certain criteria are met, including if providing the support would result in a benefit to the DOD element or National Guard personnel providing the support that is substantially equivalent to that which otherwise would be obtained from military training. In such circumstances, training funds may be made available to fund such DOD support.

Reimbursement is not required for DOD support provided pursuant to Section 1059.

DOD appreciates—and shares—the GAO's interest in ensuring well-documented cost estimates are used when assessing DHS requests for assistance. Rather than use best practices designed for the acquisition process, as recommended by the GAO, DOD cost estimates for operational support are developed using the Contingency Operations Support Tool (COST) model. Informed by prior year actual cost data, DOD cost estimates have steadily improved. Armed with cost estimate data from

fiscal years 2018 to 2021, the cost estimate for DOD support in fiscal year 2022 and, if necessary, future years, will be much more accurate.

Secretary MCCORD. Other than specified exceptions such as support for counterdrug activities and activities to counter transnational organized crime pursuant to 10 U.S.C. §284, the Department of Defense does not program and budget for support of other Federal departments and agencies, including DOD support of the DHS border security mission.

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5. Senator PETERS. Secretary Austin and General Milley, how does the southwest border mission affect the readiness of the participating units?

Secretary AUSTIN. There is a manageable impact on readiness. Participating units continue to maintain high levels of readiness, as continually assessed by the Military Services. Nonetheless, DOD continues to work closely with the Department of Homeland Security (DHS) to address DHS capability and capacity gaps and, thereby, to reduce DHS reliance on DOD support to secure the southern border of the United States.

General MILLEY. There has been negligible impact on the unit readiness of forces participating in the southwest border mission. Over fiscal year 2020 to 2021, the majority of units have seen no change or increase to their pre-deployed readiness levels. Reserve Component (RC) personnel have benefited from valuable military training by gaining valuable experience from deploying to austere environments and being afforded the opportunity to exercise ground, aviation, and intelligence support of the interagency in a relatively-benign real-world environment under the command and control of U.S. Northern Command.

The Joint Staff and the Services work diligently to mitigate training and warfighting readiness concerns in the Global Force Management process. During this process, the Joint Staff coordinates with Force Providers to source the southwest border with qualified units and personnel whose support has the least impact on the Services, and ultimately, Joint Force operational readiness.

IRREGULAR WARFARE

6. Senator PETERS. Secretary Austin, will the forthcoming National Defense Strategy still aim to institutionalize irregular warfare?

Secretary AUSTIN. Yes. The Department of Defense will continue to institutionalize irregular warfare across the entire Joint Force, an effort that is in alignment with emerging strategic guidance including the Interim National Security Strategic Guidance. The Department has also published a comprehensive implementation plan. Our adversaries use indirect and asymmetric strategies in an attempt to erode our strengths and pursue their strategic interests. Irregular warfare provides valuable ways for us to shape conditions prior to conflict and maintain an integrated approach to deterrence alongside our high-end capabilities and the efforts of our allies and partners.

7. Senator PETERS. General Milley, a March 2021 article in Joint Force Quarterly by Heather M. Bothwell titled "Gray is the New Black: A Framework to Counter Gray Zone Conflicts" contends that current doctrine inadequately addresses gray

zone conflicts. How does the joint force plan a campaign against revisionist states that employ gray zone strategies?

General MILLEY. The Joint Force operates across the continuum of conflict and requires a whole-of-government approach to synchronize all our instruments of national power.

Currently under development, the Joint Concept for Competing will deliver a structured approach and expand the intellectual aperture for how the Joint Force will synchronize with other USG departments and agencies across the "gray zone" in pursuit of national interests. Secondly, the Department continues to institutionalize our understanding of irregular warfare across the Joint Force. By relooking how irregular warfare is defined, taught, planned, and capabilities thereof are developed, our military is better positioned to contend in the "gray zone."

These two efforts are fundamental to allowing the Joint Force to campaign plan against adversaries who have adopted irregular methodologies to challenge our interests.

AVOIDING MISCALCULATION

8. Senator PETERS. Secretary Austin, as we strive to maintain an edge in conventional deterrence for ourselves and our partners in the Indo-Pacific, the possibility of miscalculation increases. Secretary Mark Esper convened a Crisis Communications Working Group with the Chinese People's Liberation Army. Is that something you plan to continue?

Secretary AUSTIN. Yes. Our aim is to hold the Crisis Communication Working Group as an annual event.

UNITED STATES-ISRAEL OPERATIONS TECHNOLOGY WORKING GROUP

9. Senator PETERS. Secretary Austin, section 1299m of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Public Law 116–283) authorized the Secretary of Defense to establish, under the United States vice chairman of the United States-Israel Defense Acquisition Advisory Group, a working group to address operations and technology matters. This effort will help to ensure that the United States and its allies remain at the cutting edge of technological development. Have you taken steps to create this working group?

Secretary AUSTIN. Our allies and partners are a force multiplier and one of the greatest strategic assets we have in protecting our Nation. To this end, the Department works closely with Israel's Ministry of Defense (IMOD) to advance collaborative defense research, development, test, and evaluation of operationally-required weapons systems to increase the lethality of Warfighters in the United States and Israel. I support the intent of this provision. As such, the IMOD and the Department are developing the terms of reference for such a group for discussion at the Undersecretary (Acquisition and Sustainment)-led United States-Israel Defense Acquisition Advisory Group meeting.

ARMENIA AND AZERBAIJAN

10. Senator PETERS. General Milley, during the Nagorno-Karabakh conflict, Azerbaijan's drone fleet highlighted the vulnerabilities of sophisticated weapons systems. Has this affected how you prioritize counter-unmanned aerial systems' capabilities in U.S. European Command?

General MILLEY. Small unmanned aircraft systems (sUAS) technology trends are dramatically transforming making them less expensive, easier, and increasingly capable weapons in the hands of state actors, non-state actors, and criminals not only in USEUCOM but across the globe.

I am encouraged by how our new Directed Energy C-sUAS systems are performing in CENTCOM and AFRICOM and we will make appropriate allocation of assets based on our worldwide assessment of the threat.

The Department currently has capabilities to mitigate and/or defeat the current generation of sUAS but recognize that advances in artificial intelligence/machine learning will increase the challenges posed by sUAS with regards to swarming and other advanced techniques.

18 November 2019, the Secretary of Defense designated the Secretary of the Army as the DOD Executive Agent for Counter-sUAS (C-sUAS), Groups 1, 2, and 3. US technology to counter the sUAS threat continues to improve. DOD establishing the Joint small-Counter UAS Office to consolidate, coordinate, and expedite new capabilities in our C-sUAS portfolio is a critical step in tackling this threat.

11. Senator PETERS. Secretary Austin, is DOD able to confirm reports of abuse against Armenian prisoners of war currently being detained by Azerbaijan?

Secretary AUSTIN. DOD is aware of, but has not confirmed, reports of abuse against Armenian detainees currently held by Azerbaijan. The United States has called on Azerbaijan to respect its obligation under international law to ensure the humane treatment of all detainees in its custody, and has called for the release of all remaining Armenian detainees as soon as possible.

TRICARE

12. Senator PETERS. Secretary Austin, the Department has taken significant steps to keep costs down, but for several years we have known that one subset of Tricare beneficiaries - those who rely on brand name maintenance medications - face department imposed barriers when it comes to convenience and choice of where to access these needed prescriptions. Due to current Defense Health Agency (DHA) policy, and how they ask for certain rebates, Tricare beneficiaries who rely on these drugs are forbidden from picking up their prescriptions at a local, in-network pharmacy following their first (up to second) fill. At such point, they're forced to use a military treatment facility (MTF) or mail order. This also applies to Tricare retirees. In my home State of Michigan, access to MTFs with a pharmacy is extremely limited - as a matter of geography that leaves many of my constituents in a tough spot with no other option than to receive drugs by mail order. The current system offers them little flexibility and limited access to pharmacist care. We've been working in a bipartisan manner for several years to try and fix this problem. In fact, the National Defense Authorization Act for Fiscal Year 2021 includes optional pilot language on this issue. We want to make it easier for military families and retirees to access the medications they need. Do we have your support in this endeavor?

Secretary AUSTIN. The pharmacy pilot language in the NDAA for fiscal year 2021 directed that the pilot should be executed if the total costs of the pilot for beneficiaries to receive all medications at retail pharmacies would not exceed the overall total costs to the Department for beneficiaries receiving those same medications through the TRICARE mail order program. We have explored the costs of this pilot, and an independent analysis comparing the costs for this retail pharmacy pilot to the costs for the same medications through mail order showed that total costs to the Department for this pilot exceed the costs for the same medications at mail order by 13.4 percent, or $132M, with only a 25 percent beneficiary participation rate. Based on the results of the cost analysis, the Department has decided not to proceed with this pilot. However, we recognize how critical optimization of the TRICARE pharmacy benefit is and we are exploring how to leverage commercial best practices that promote patient safety, maximize access to covered medications, and deliver high levels of beneficiary satisfaction. This work continues.

QUESTIONS SUBMITTED BY SENATOR TAMMY DUCKWORTH

FACTORING PROGRAM PERFORMANCE FOR BUDGET PRIORITIZATION

13. Senator DUCKWORTH. Secretary Austin, it's absolutely critical that DOD leverage best practices to achieve its modernization efforts efficiently and deliver high-quality systems to our warfighters on-time, on-budget and in alignment with the 2018 National Defense Strategy and the 2021 Interim National Security Strategic Guidance. I remain encouraged by the Army's Future Vertical Lift Family of Systems, an example of the Department of Defense's ability to leverage the streamlined middle tier of acquisitions pathway to quickly generate highly competitive options at relatively little risk to the government and the American taxpayer. As modernization efforts continue across the joint force, are DOD and the military services factoring program performance into decisions about how to prioritize budget requests to adequately resource successful programs, such as Future Vertical Lift, and sustain their momentum?

Secretary AUSTIN. The Department's annual Program Budget Review process evaluates programs on many factors, including current performance metrics such as cost, schedule, and technical maturity. In addition, every program is evaluated for support to the National Defense Strategy to ensure programs prioritized for funding are both cost effective and aligned to our strategic requirements.

QUESTIONS SUBMITTED BY SENATOR JACKY ROSEN

MQ–9

14. Senator ROSEN. Secretary Austin, during the hearing, you mentioned that the Air Force is reducing the number of MQ–9 lines but not the number of tails. I'm curious why there is any reduction at all when the Air Force today still lacks the intelligence, surveillance, and reconnaissance capacity to meet Combatant Commanders' requirements contained in the 2018 National Defense Strategy. Can you elaborate and provide specific information detailing the impact of reducing the number of lines on the number of MQ–9 aircraft the Air Force will operate?

Secretary AUSTIN. In fiscal year 2022, the Air Force requested a reduction in combat lines. This reduction is less than 10 percent of the current force presentation (4 of 60) and does not equate to reduction in aircraft inventory. No tails will be divested and no squadrons will be reduced. We will continue to work with Combatant Commands to ensure daily intelligence, surveillance, reconnaissance, and strike capability requirements are fulfilled. Concurrently, we intend to continue development of future ISR platforms that can penetrate inside contested environments, persist in these locations, and be able to connect and share data in the advanced battle management system.

15. Senator ROSEN. Secretary Austin, can you also please expand on what this reduction strategy is and whether there is soon to be a program of record to replace the MQ–9?

Secretary AUSTIN. Starting with the 2018 NDS, and continuing with the March 2021 interim NSS, Services are directed to prioritize investments in capabilities needed in a peer conflict. The MQ–9 has very limited capabilities in contested environments.

In fiscal year 2022, the Air Force requested a reduction in combat lines. This reduction is less than 10 percent of the current force presentation (4 of 60) and does not equate to reduction in aircraft inventory. No tails will be divested and no squadrons will be reduced.

While the MQ–9 provides significant utility today, it was not designed for operation in a future highly-contested environment. Modifying the MQ–9 force presentation is about balancing near and long-term risk. Continued ISR modernization efforts seek to provide future warfighters the ability to access data and information at a moment's notice. Future systems must be able to penetrate inside contested environments, persist in these locations, and be able to connect and share data in the advanced battle management system.

The Department can offer more details on replacement ISR programs in a classified setting.

CYBERSECURITY

16. Senator ROSEN. Secretary Austin, you have noted DOD's continued challenges to address competitive requirements for certain key skill areas, such as those in the cyber and science, technology, engineering, and mathematics fields. Could a civilian cyber reserve corps of cybersecurity professionals with prior government or military service be of value to the national security enterprise as a means of supplementing existing agency personnel with additional cyber capacity expertise?

Secretary AUSTIN. The Department's demand signal for more technically skilled personnel will continue to increase, and DOD will continue to compete for technical talent with the private sector. DOD excels at developing technically trained personnel and is able to retain those personnel in the Services' reserve components, which help the Department fulfill its cyber missions. To the extent that retired or separated personnel wish to serve in other civilian capacities, their cyber skills can certainly be applied to the Nation's broader cybersecurity challenges. A civilian cyber reserve corps would, however, support such missions under civil authorities.

If called to support civil authorities in a major incident, a civilian cyber reserve corps could potentially relieve pressure on the Department from being asked to provide that civil support potentially at the expense of performing Title 10 mission. In such a scenario where a civilian reserve corps were available, the Department could remain focused on its core missions.

Congress directed a study in Section 1730 of the fiscal year 2021 NDAA to evaluate non-traditional cyber support to DOD, which is currently underway. The findings of that study will inform our understanding of alternative cyber support models.

CONTINUED SUPPORT FOR THE AFGHANS

17. Senator ROSEN. Secretary Austin, what is the plan for an enduring counterterrorism strategy that will be able to address and counter the influence of violent extremist organizations, which directly supports the stability of the Afghan Government?

Secretary AUSTIN. During the 28 September 2021 Senate Armed Services Committee hearing, Secretary Austin testified as follows:

Over-the-horizon counterterrorism operations are difficult but absolutely possible, and the intelligence that supports them comes from a variety of sources, not just U.S. boots on the ground. We recognize that transnational terrorists will migrate towards ungoverned spaces. We are also committed to not allowing Al-Qaeda to regenerate and be able to export terror from Afghanistan to the United States of America. We will do everything within our power to make sure that does not happen.

18. Senator ROSEN. Secretary Austin, will we establish or build up an existing presence elsewhere in the region to continue counterterrorism operations?

Secretary AUSTIN. During the 28 September 2021 Senate Armed Services Committee hearing, Secretary Austin testified as follows: In terms of military tools, we have the ability to offer a range of options depending on the President's objectives.

Additional details regarding discussions to enhance our regional presence were addressed during the closed session.

19. Senator ROSEN. Secretary Austin, what will U.S. assistance to Afghanistan look like after withdrawal?

Secretary AUSTIN. During the 28 September 2021 Senate Armed Services Committee hearing, Secretary Austin testified as follows:

Our servicemembers and civilians face a new mission: helping Afghan evacuees move on to new lives in new places. I know that you share my profound gratitude and respect for their service, courage, and professionalism.

20. Senator ROSEN. Secretary Austin, looking ahead, have we established any agreements to fly United States air assets from neighboring countries such as Tajikistan, Uzbekistan, or Turkmenistan in order to provide the Afghans with air support?

Secretary AUSTIN. Additional information regarding regional basing agreements was addressed by Secretary Austin during the closed session of the 28 September 2021 Senate Armed Services Committee hearing.

21. Senator ROSEN. General Milley, how much military equipment will be turned over to the Afghan National Defense and Security Forces?

General MILLEY. The Department of Defense has identified over $300 million in equipment and structures to be transferred to the Afghan Government via the Foreign Excess Property and Foreign Excess Real Property Programs. In addition, DOD has transferred a small amount of military equipment to the Afghan Government either as excess defense articles (EDA) or as sales from stock using the Afghanistan Security Forces Fund. This included 35 EDA MRAPs, 15 other EDA military vehicles, about $4 million of ammunition, several hundred small arms and small quantities of other items.

22. Senator ROSEN. General Milley, is there logistical support in place or plans to maintain that equipment, which is currently the responsibility of either Coalition Forces or contractors?

General MILLEY. The new Defense Security Cooperation Management Office for Afghanistan (DSCMO–A), which replaced the Combined Security Transition Command—Afghanistan (CSTC–A), has been established to continue the management of security assistance to Afghanistan. This includes advice and direct assistance to ensure proper maintenance for all donated military equipment to Afghanistan's National Defense and Security Forces. (ANDSF).

NORTH ATLANTIC TREATY ORGANIZATION FORCES

23. Senator ROSEN. Secretary Austin, is there a plan for North Atlantic Treaty Organization (NATO) forces to continue supporting Afghan Security Forces after the United States withdrawal? If so, what will that support look like in the fight to counter violent extremist organizations once we leave?

Secretary AUSTIN. During the 28 September 2021 Senate Armed Services Committee hearing, Secretary Austin testified as follows: As I engage my counterparts, they are very willing to work with us. They have been very thankful that we helped them evacuate their people.

24. Senator ROSEN. Secretary Austin, given the upcoming withdrawal and pending any future deterioration in Afghanistan's security situation, what is the threshold for re-establishing a NATO presence or involvement with the Afghan Security Forces in Afghanistan, should it be necessary?

Secretary AUSTIN. During the 28 September 2021 Senate Armed Services Committee hearing, Secretary Austin testified as follows: I do not think it is preordained that we are going to have to return to Afghanistan. We are committed to not allowing Al Qaeda to regenerate and be able to export terror from Afghanistan to the United States of America.

COUNTERING ADVERSARIES

25. Senator ROSEN. Secretary Austin, what have we seen regarding the status of women in territories where the Taliban has retained control or has already overthrown the Afghan Government?

Secretary AUSTIN. During the 28 September 2021 Senate Armed Services Committee hearing, Secretary Austin testified as follows: I share the concerns of Members of this Committee regarding the status of women and girls in Afghanistan. We will have to work to use economic levers and also international pressure to hold the Taliban accountable.

26. Senator ROSEN. Secretary Austin, what can we expect of the progress that has been made over these past 20 years once we withdraw, and how can we mitigate this?

Secretary AUSTIN. During the 28 September 2021 Senate Armed Services Committee hearing, Secretary Austin testified as follows: We provided the Afghan military with equipment and aircraft and the skills to use them. Over the years, they often fought bravely. Tens of thousands of Afghan soldiers and police officers died. But in the end, we couldn't provide them with the will to win. As a veteran of that war, I am personally reckoning with all of that. But I hope that we do not allow a debate about how this war ended to cloud our pride in the way that our people fought it. They prevented another 9/11, they showed extraordinary courage and compassion in the war's last days, and they made lasting progress in Afghanistan that the Taliban will find difficult to reverse and that the international community should work hard to preserve.

QUESTIONS SUBMITTED BY SENATOR JAMES M. INHOFE

AFGHANISTAN SAVINGS

27. Senator INHOFE. Secretary Austin, in your testimony you wrote: "In Afghanistan, the Department is working to conduct a deliberate, orderly, and safe withdrawal, as directed by the President. This is an important step in responsibly ending this two-decade-long conflict, and it offers us an opportunity to redirect our resources toward strategic competition." General Kenneth McKenzie testified to the Committee that to accomplish the mission from over the horizon that: "The ranges will be greater. The resources will be greater. The risks will all be greater . . . " This week, Acting Air Force Secretary John Roth said the Air Force budgeted for $10 billion in unspecified U.S. Central Command needs to deal with post-withdrawal missions. Your testimony about redirecting resources, an implied savings, seems to directly contradict what the combatant commander believes and what the Air Force is being required to execute. Approximately how much do your budget experts believe will be saved due to the withdrawal from Afghanistan and over what timeframe?

Secretary AUSTIN. Please reference the table below from DOD Comptroller. When compared to the fiscal year 2021 enacted funding levels, the Department of Defense's fiscal year 2022 savings related to the Afghanistan withdrawal is approximately ¯$9.4 billion comprised of $-4.0 billion in reduced Operation FREEDOM's SENTINEL direct war costs (mostly Afghanistan in-country costs) and from $-5.4 billion in reduced enduring requirements (mostly in-theater support costs) related to the withdrawal. The timeframe for the estimated savings is for fiscal year 2022 only.

The Department reinvested not only the Afghanistan withdrawal related savings of $9.4 billion, but the entire savings of $11.8 billion, as noted below, in decreased direct war and enduring theater requirements towards weapon system modernization and readiness in the fiscal year 2022 President's Budget request.

Operation/Activity	Fiscal Year 2021 Enacted	Fiscal Year 2022 Request	Delta	Related to Afghanistan Withdrawal
Operation FREEDOM'S SENTINEL (OFS) Direct War Costs	12.9	8.9	-4.0	-4.0
Operation INHERENT RESOLVE (OIR) Direct War Costs	7.0	5.4	-1.6	
Enduring Theater Requirements and Related Missions*	29.5	24.1	-5.4	-5.4
European Deterrence Initiative (EDI) and Ukraine Security Assistance Initiative	4.5	3.7	-0.8	
GRAND TOTAL	53.9	42.1	-11.8	-9.4

* Related missions include OSS, CT Ops, OEF-HOA, etc.

The Air Forces' fiscal year 2022 budget submission amount of $10.1 billion includes Operation Inherent Resolve, $1.6 billion; European Deterrence Initiative, $0.7 billion; and Operation Freedom's Sentinel, $7.8 billion of which $0.7 billion is direct war requirements and $7.1 billion is enduring requirements.

QUESTIONS SUBMITTED BY SENATOR THOM TILLIS

FORT BRAGG MILITARY CONSTRUCTION

28. Senator TILLIS. Secretary Austin and General Milley, as you are aware, the Immediate Response Forces (IFR) is the Nation's rapid response force, which is comprised of paratroopers from one of the 82nd Airborne Division's brigade combat teams and should be able to rapidly deploy within 18 hours. For the first time since 1989, the response force received rapid deployment orders on New Year's Eve 2019, following the Iran-supported Hezbollah militia attacks on the American embassy in Iraq. However, as paratroopers prepared for the deployment, they spent most of the day traveling across Fort Bragg from location to location gathering equipment instead of spending their limited time on briefings or preparing for the mission. Compounding this issue is that conventional forces at Fort Bragg have only been supported with a single military construction (MILCON) project since 2010, compared to the numerous MILCON projects that have supported special operations units at the same base. It is irresponsible of Congress, and I would argue of the Department of Defense and Army, to require the IFR to perform its duties if we are not going to provide the necessary support facilities to ensure mission success and soldier safety. While it is currently not on the unfunded priority list, do I have your commitment that you will support our IFR warfighters by placing their request for a strategic deployment complex and a tactical equipment maintenance facility on this year's list of unfunded priorities?

Secretary AUSTIN. According to departmental analysis, the Strategic Deployment Complex and the Tactical Equipment Maintenance Facility projects supporting the Immediate Response Force lack sufficient design status to be placed on the fiscal year 2022 Unfunded Priority List (UPL). While they do not met the 35 percent-design threshold required to be considered for the fiscal year 2022 UPL list. These projects may meet the design threshold to compete in a later budget cycle, and will be considered for inclusion in a future funding request.

General MILLEY. For President's Budget 2022, the Department will continue to evaluate the feasibility of the strategic deployment complex and tactical equipment maintenance facility moving forward, while the Army prioritized Soldier Barracks and Child Development Centers in their unfunded priority list.

29. Senator TILLIS. Secretary Austin and General Milley, taking it a step further, if the IFR is essential to the Department's ability to rapidly support America's national security in emergent crises, why is it not part of the DOD's requested budget?

If it is not essential, as it would appear based on the budget and unfunded priority list, why have it?

Secretary AUSTIN. The Immediate Response Force is an essential asset to the Department's ability to rapidly support America's national security in emergent crises. Army needs regularly exceed available resources. Based on departmental analysis, this project has not cleared the planning and design phase, it is not executable in fiscal year 2022.

General MILLEY. Forces within the Immediate Response Force (IRF) are manned, trained, and equipped to respond with short notice when called upon. Funding for the IRF is part of each Services' base budget request.

The IRF is a key capability of the Department of Defense's Global Force Management (GFM) framework. The IRF, consisting of wide ranging abilities from every Service, provides ready forces for proactive and scalable Joint Force employment whenever called upon.

READINESS AND RISK

30. Senator TILLIS. General Milley, in Defense News at the end of last month you stated that the fiscal year 2022 DOD Budget "strikes an appropriate balance between preserving present readiness and future modernization." I would argue that today our DOD is unable to meet present readiness requirements whether it be with personnel, ground vehicles, aircraft, ships, and infrastructure. For example, the V–22 Osprey, which has been in operational service since 2006 and is flown by three services, still fails to meet fleet-wide mission capable readiness rate set by the Defense Department. With that said, how do you envision we preserve current readiness, which we are not doing right now, with a budget that does not keep up with inflation and reduces spending on present readiness capabilities?

General MILLEY. President's Budget 2022 invests $122.1 billion in Readiness, a $1.2 billion increase over fiscal year 2021. We are also looking at readiness differently than in past years. For example, the budget improves maintenance data analytics and parts availability, which will enable military and civilian maintainers to repair ships, aircraft, and brigades in shipyards, hangars, & depots with greater agility.

Further, the SECDEF-directed 1-to-3 deploy-to-dwell ratio coupled with the Afghanistan retrograde allows for a flexible reallocation of the Joint Force and increases in our readiness posture.

While specific challenges remain, tools such as the Directed Readiness process aid the Department in balancing near term readiness with the need to modernize the force.

31. Senator TILLIS. General Milley, in your testimony to the House Appropriations Committee, you noted that this budget is geared toward 2030 or 2035. I'm concerned about the many years until we build the perfect military. What sort of risks are we taking in the near- to mid-term?

General MILLEY. The fiscal year 2022 presidential budget strikes an appropriate balance between preserving present readiness and future modernization. It's a down payment on investments of the future, with a bias toward the future operating environment.

Advanced technologies, such as Artificial Intelligence, 5G, Hypersonics, etc, will change the character of war. As such, the Department is investing $112 billion (more than any previous budget request) in Research, Development, Testing & Evaluation.

President's Budget 2022 directs a $25.7 billion investment in 11 key enabling technologies critical to building a more lethal force, that is capable of competing in a peer conflict. This is a $1.6 billion increase over fiscal year 2021 enacted levels.

President's Budget 2022 increases funding in:

- Space (+$2.6 billion from fiscal year 2021)
- Long Range Fires (+$1.4 billion from fiscal year 2021)
- RDT&E (+$5.6 billion from fiscal year 2021)
- Nuclear Enterprises / NC3 (+$2.6 billion from fiscal year 2021)
- Cyber (+$0.4 billion from fiscal year 2021)
- Readiness (+$1.2 billion from fiscal year 2021)

32. Senator TILLIS. Secretary Austin and General Milley, this budget takes risk in the near term with the promise of a better future force. The history of military conflict tells us that states will often undertake military aggression when they view

their relative advantage as maximized. Do you worry that this investment strategy plays into that dynamic?

Secretary AUSTIN. The Department is continually preparing the Joint Force for an immediate contingency, a potential near- to mid-term conflict, largely using today's extant force, and for a future conflict, where today's emerging technology will be critical. The President's Fiscal Year 2022 Budget strikes an appropriate balance of readiness, force structure, and modernization investments across these timeframes, in order to dissuade any potential adversaries from opportunism in the near, medium, and long-term.

With respect to a future conflict, the President's Fiscal Year 2022 Budget emphasizes longer-term modernization, including by investing in the Defense Industrial Base. The Department is also focused on making it easier for industry to work with the Department, increasing DOD's access to commercial innovation and creating opportunities for job growth in fields such as advanced manufacturing. This approach will help ensure the U.S. Joint Force maintains a competitive edge in key domains and warfighting functions, such as in space, 6th generation air power, cyber, undersea warfare, and long-range fires.

General MILLEY. As the key tasks of the Joint Force are 1) to fight and win, and 2) to be prepared to fight and win, we are focusing our efforts to adapt to the changing character of warfare. Modernization and readiness prioritization, as reflected in this budget submission, support the Joint Force's ability to adapt to this evolving environment.

BIOLOGICAL THREAT REDUCTION PROGRAM

33. Senator TILLIS. Secretary Austin, the Biological Threat Reduction Program finds and fights emerging global diseases that can threaten U.S. troops and, ultimately, the world's population. In fact, the Pentagon program funded a lab in Thailand that detected in January 2020 the first case of novel coronavirus outside China. Your budget wants the program's fiscal 2022 budget to be set at $124 million—or 45 percent lower than the current level, according to the your budget justification documents. I am baffled and extremely concerned with this as the world begins to emerge from the COVID–19 Pandemic. If anything, you as a Department, and we as a country should be fully invested in this program to facilitate the detection, minimize the spread, and quickly respond to future pathogens. Based on the 600,000 American COVID–19 deaths, how can the DOD justify cutting the funding for this program in half?

Secretary AUSTIN. Countering biological threats, whether from biological weapons or a naturally-occurring pathogen of security concern, is an important mission. The DOD Cooperative Threat Reduction (CTR) program continues to deliver impressive results through investment in foreign partner capabilities to prevent, detect, and report biological threat events. It is one, but not the only, program that the Department uses to address to biological threats. Moreover, DOD is not the U.S. Government's only Department or Agency with this mission.

The DOD countering weapons of mass destruction (WMD) enterprise requires balanced investment across the WMD threat spectrum. For fiscal year 2022, the Department requested $239.8 million for the DOD CTR program, which includes $124 million for biological threat reduction activities. This funding level is similar to program's fiscal year 2021 request, and aligns with validated, prioritized requirements. DOD decisions on DOD CTR program investments are based on several factors including, but not limited to, presence of a WMD threat as well as partner nation will and ability to sustain DOD-provided capabilities. To maximize threat reduction outcomes, DOD also partners with multilateral bodies and allied nations conducting similar work.

34. Senator TILLIS. Secretary Austin, is this a good example of where we're making bad choices simply because DOD's topline is artificially low?

Secretary AUSTIN. No. The DOD Cooperative Threat Reduction (CTR) Program has been and continues to be aligned to achieve the program's mission: reduce WMD threats to U.S. interests. The DOD CTR Program is one part of a broader, coordinated, whole-of-government and international effort to reduce these threats and improve global health security, with a specific DOD-focus on protecting the Joint Force and reducing risks to the homeland and our partner nations. The fiscal year 2022 budget request represents the amount the DOD CTR Program can effectively spend to fulfill its targeted mission with partner countries willing and able to sustain

these investments and capabilities and deliver high-priority threat reduction return on investments.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

TED STEVENS CENTER FOR ARCTIC SECURITY STUDIES

35. Senator SULLIVAN. Secretary Austin, you approved the establishment of the sixth DOD Regional Center, the Ted Stevens Center for Arctic Security Studies, on June 3, 2021 to bring increased focus and cooperation on topics pertinent to the unique challenges and security concerns related to the Arctic region. As of June 10, 2021, DOD is able to begin actions to stand up the center. You delegated final site selection authority to Under Secretary of Defense for Policy, Dr. Colin Kahl. It is my understanding that Dr. Kahl is considering sites in Alaska, Colorado, and the National Capital Region. The DOD Plan to Establish a Regional Center for Security Studies for the Artic—Report to Congress for fiscal year 2021, lists three criteria for site selection: proximity of a location to other academic institutions that study security implications with respect to the Arctic region; the proximity of a location to the designated lead for Arctic affairs of the U.S. Northern Command; and the proximity of a location to a central hub of assigned Arctic-focused Armed Forces so as to suitable advance relevant professional development skills unique to the Arctic region. Alaska is the only location that satisfies these criteria. Will you commit to having Dr. Kahl update my office on site selection progress, including how each of these criteria are weighted?

Secretary AUSTIN. Yes, I will commit the Under Secretary of Defense for Policy to provide updates to your office as the Department works through defining the site selection process it will use, including the criteria identified in the National Defense Authorization Act (NDAA) for fiscal year 2021 and the operational, logistical, and participation-related factors identified by the DOD.

36. Senator SULLIVAN. Secretary Austin, once a final decision is made on the location of the Ted Stevens Center for Arctic Security Studies, will you commit to having Dr. Kahl provide my office a brief on what locations were considered, how they scored on their respective evaluations, and what the execution timeline is?

Secretary AUSTIN. On 17 November 2021, the Department announced that it had identified Anchorage, Alaska as the sole candidate city to host the Ted Stevens Center for Arctic Security Studies, the Department of Defense Regional Center for the Arctic. The Department will continue to work through the Department of the Air Force Strategic Basing process to evaluate facilities within Anchorage to finalize the site selection. Once a final decision is made, I will commit to having the Department brief your office on the locations that were considered and the anticipated execution timeline.

QUESTIONS SUBMITTED BY SENATOR KEVIN CRAMER

PRESENTATION OF DEFENSE BUDGET MATERIALS

37. Senator CRAMER. Secretary Austin, the Fiscal Year 2021 National Defense Authorization Act Senate Report (S. Rpt. 116–236) included language that said "The Committee additionally directs that the amounts and shares for each military service or department reported pursuant to this direction shall not include amounts that are not directly related to the budgets of each service or department, such as funding that is subsequently redirected to general defense-wide needs or for other national security purposes." But this year's Office of the Secretary of Defense's Roll Out Brief did not differentiate the amount of topline budget a service received versus what they could control. Why wasn't this Senate report language executed?

Secretary AUSTIN. There are classified reasons why the budget presentation exists in its current form. The Comptroller takes care to avoid inadvertently exposing classified information to the public and continues to provide the annual classified budget extract report along with the President's Budget submission to the Committees in order to present a complete, classified picture to Congress. The Department was unable to provide the display requested by the Congress for the fiscal year 2022 Budget Request without adversely affecting counterintelligence, but is considering several options to do so in the future.

38. Senator CRAMER. Secretary McCord, broken out by service, how much "pass-through" money was put under each service's topline budget?

Secretary MCCORD. The amounts of "pass-though" money for each Service are classified and were provided in the annual classified budget extract report that accompanied the Fiscal Year 2022 President's Budget submission to the committees. A similar classified budget extract report will be provided for the Fiscal Year 2023 President's Budget submission. I understand that the classification issues involved here can hinder a full understanding of the defense budget structure by the public.

QUESTIONS SUBMITTED BY SENATOR JOSH HAWLEY

THE THREAT OF A FAIT ACCOMPLI

39. Senator HAWLEY. General Milley, the Defense Science Board assessed the following in June 2018: "Russia and China have each developed theories of victory that differ in important respects, but that have in common this idea of exploiting asymmetries in space and time and asymmetries in stakes. In particular, once it is clear that armed conflict is inevitable, they will attempt to achieve a decisive outcome very quickly, presenting the U.S. and its allies with a fait accompli. They will then seek to demonstrate that the U.S. and its allies will incur significant costs in seeking to reverse that outcome." Do you agree with the Defense Science Board's assessment?

General MILLEY. Yes. Asymmetry in space and time just means that adversaries are very close to the fight and can get there fast. During a crisis and as conflict begins, adversaries will work tirelessly in the information environment, communicating to the international community, to their own people, and to our citizens in an attempt to convince the world that their military coercion is just and reasonable, and that the outcome matters more to them than it does to us. This narrative will be coupled with operational concepts explicitly designed to make it difficult and costly for our military to move into the region. Adversaries' theories of victory explicitly attempt to win without fighting. This combat without (direct) conflict aims to cripple the Joint Force before it ever leaves the homeland. If they are unsuccessful in that effort, they plan to contest our global logistical enterprise so that our units are degraded by the time they reach the battlefield. Finally, they will demonstrate that the stakes in such a conflict are considerably higher with nuclear posturing and potentially threatening nuclear escalation if the conflict does not go their way.

40. Senator HAWLEY. General Milley, the National Defense Strategy Commission found in November 2018 that "successfully competing in Europe and the Indo-Pacific region, while also managing escalation dynamics, requires positioning substantial capability forward . . . to deter and prevent a fait accompli by an agile, opportunistic adversary." Do you agree with this finding by the National Defense Strategy Commission?

General MILLEY. Yes. Fait accompli attacks typically occur relatively close to an adversaries' homeland. This may require the Joint Force to rapidly project power far from the U.S. Homeland to counter them. However, we have to offset adversary positional advantage with a variety of forward forces that are credible, lethal, and can maneuver decisively to prevent a fait accompli in the manner of our choosing.

The Joint Force, along with its Allies and Partners, can deter and prevail against an attempted fait accompli with forward postured forces, as well as through rotational and periodic deployments of units with unique capabilities across all domains. The Joint Force's Dynamic Force Employment attempts to anticipate adversary actions and support U.S. interests with agility akin to or greater than that of our adversaries. The Joint Force supports Allied and Partner resistance to adversary coercion/aggression and prevents fait accomplish by supplementing them with complementary U.S. capabilities and working together toward high levels of interoperability—in planning and operations. The Department supports these actions through security cooperation initiatives including foreign military sales, bilateral and multilateral exercises, and joint/combined training.

I would add that our definition of what is 'forward' should expand as well, occurring not just in the land sea, and air domains, but also engaging in space and cyberspace, and through the electromagnetic spectrum. Our effective forward presence, exercises, and operations, backed by additional combat credible forces at home and superior power projection capacity enables the Joint Force to militarily compete and prevent successful fait accompli attacks in support of national interests.

41. Senator HAWLEY. General Milley, the National Defense Strategy Commission also found that "the United States must develop new operational concepts to achieve strategic advantage, including by addressing the ability of aggressive regimes to achieve a fait accompli against states on their periphery." Do you agree with this finding by the National Defense Strategy Commission?

General MILLEY. Yes. Adversaries are working hard to modernize their forces in ways that they believe can to deter the United States from intervening and if necessary, defeat the U.S. military so they can achieve their regional goals. New joint operational concepts are designed to work across competition and war—a distinction our adversaries do not recognize. New operational concepts will improve our ability to convince adversaries that military coercion short of war will not have the desired effect, while also ensuring that we have the military advantages needed to defeat adversary aggression when it occurs. Just as important, new operational concepts will support broader national efforts to convince adversaries that they cannot succeed. But the Joint Force cannot do this alone. We need to better synchronize the Joint Force with other USG departments and agencies to leverage all the instruments of national power against our adversaries' fait accompli strategies.

42. Senator HAWLEY. General Milley, you wrote the foreword for the December 2018 Army publication titled, "The U.S. Army in Multi-Domain Operations 2028." This publication states that "Army forces must demonstrate four capabilities in competition to deter the adversary," the first of which is the "[a]bility to immediately deny a fait accompli attack." Do you agree with the assessment in this document that Army forces must be able to "immediately deny a fait accompli" in order to demonstrate a credible deterrent?

General MILLEY. Yes. Denying the adversary operational success on short timelines can be a critical component in a campaign to defeat a fait accompli attack. Joint warfare is team warfare and each of the Services—to include the Army—have important roles to play in the mission to deter and defeat a fait accompli attack. Credible deterrence happens when we have a military that, every day, convinces the adversary that it can disrupt the success of any initial attack, while preventing the adversary from consolidating its advances and establishing an effective defense.

43. Senator HAWLEY. General Milley, the Department of Defense's 2019 "Indo-Pacific Strategy Report" stated, "If our competitors decide to advance their interests through force, they are likely to enjoy a local military advantage at the onset of conflict. In a fait accompli scenario, competitors would seek to employ their capabilities quickly to achieve limited objectives and forestall a response from the United States, and its allies and partners. DOD initiatives on force employment, crisis response, force and concept development, and collaboration with allies and partners are aimed to help address this critical challenge." Do you agree with the Department's assessment in the "Indo-Pacific Strategy Report" that a "fait accompli scenario" is a "critical challenge"?

General MILLEY. Yes. The U.S. military underwrites the global commitments our Nation has made to both defending allies and partners under threat from adversary coercion, but also the rules-based international order that that reflects our interests and values globally. As the PRC adapts its forces in a bid to more effectively coerce its neighbors and deter the U.S. from engaging in the region, the Joint Force also needs to adapt its combat capabilities. This includes improvements in how we operate closely and in concert with Allies and partners to ensure that the PRC cannot quickly, cheaply, or easily advance their aims through military force.

44. Senator HAWLEY. General Milley, the Tri-Service Maritime Strategy released by the United States Navy, United States Marine Corps, and United States Coast Guard in December 2020 stated, "In the event of conflict, China and Russia will likely attempt to seize territory before the United States and its allies can mount an effective response—leading to a fait accompli. Each supports this approach through investments in counter-intervention networks. Each seeks to shift the burden of escalation by reinforcing annexed territory with long-range precision-strike weapons and make a military response to an invasion seem disproportionately costly." Do you agree with this assessment by Navy, Marine Corps, and Coast Guard leadership?

General MILLEY. Yes. Adversaries have invested heavily in counter-intervention networks—sometimes referred to as "anti-access, area denial" capabilities. Basically, this means that adversaries are applying new long range precision weapons and other advanced capabilities to widen their defensive perimeter such that it holds the Joint Force at bay and allows their own operations to proceed without effective interference. They intend that their counter-intervention networks are so dense and

comprehensive that the U.S. will be forced with a difficult choice about whether to commit the U.S. military in a presumably costly campaign to roll the adversary back.

45. Senator HAWLEY. General Milley, Chief of Staff of the Army General James McConville released Chief of Staff Paper #1, "Army Multi-Domain Transformation," in March 2021. In this document, he states, "Our adversaries will attempt to achieve their strategic goals without fighting, or to seize their objectives quickly as a fait accompli." Do you agree with General McConville's assessment?

General MILLEY. Yes. Adversaries would prefer that they achieve their objectives—and that the United States loses—without having to fight at all. For this reason, adversaries work tirelessly to develop advantages early. They take coercive actions against neighbors that they believe are effective but still remain below thresholds that might trigger a U.S. military response. Failing that, adversaries aim to move quickly and decisively to avoid a longer and potentially riskier conflict and convince the U.S. that attempting to reverse their military seizure would be costlier than our Nation is willing to bear.

QUESTIONS SUBMITTED BY SENATOR TOMMY TUBERVILLE

NUCLEAR POLICY

46. Senator TUBERVILLE. Secretary Austin, there are reports that the Acting Secretary of the Navy would cancel a new Nuclear Sea Launched Cruise Missile after submission of the fiscal year 2022 budget, and before a Nuclear Posture Review. Will you commit to postponing that decision until after the findings of the Nuclear Posture Review have been delivered to this body?

Secretary AUSTIN. The sea-launched cruise missile—nuclear (SLCM–N) program will be examined during the upcoming U.S. Nuclear Posture Review (NPR). As you know, the fiscal year 2022 budget request included a small amount of funding to evaluate the next steps for a potential nuclear sea-launched cruise missile program as proposed by the 2018 Nuclear Posture Review. The upcoming review of U.S. nuclear posture and policy will re-examine if a nuclear sea-launched cruise missile is necessary for our national defense strategy.

AFGHANISTAN

47. Senator TUBERVILLE. General Milley, after 20 years we are leaving Afghanistan and with it, one of the world's largest airbases, Bagram Airfield. Is there any United States military aircraft that Bagram Airfield cannot accommodate?

General MILLEY. At the height of our military operations in Afghanistan, Bagram Airfield could accommodate the largest aircraft in the United States inventory. As we prepare the airfield for the departure of U.S. Forces and the handover to the ANDSF, we have ceased the manning and contracts for the radar approach system and air traffic control. In addition, we can no longer ensure the upkeep of instrument approach systems. Collectively, these changes will limit the airfield to Visual Flight Rules (VFR), causing our aircraft to operate in 'fair weather' conditions only.

48. Senator TUBERVILLE. General Milley, would you agree that an air base within 500 miles of both the Iranian and Chinese borders could be strategically invaluable?

General MILLEY. An airbase located within 500 miles of both the Iranian and Chinese borders could provide strategic advantage. However, that advantage is only relevant within the overall framework of US policy and strategy. Our ability to militarily support US national security policy priorities will not be significantly curtailed by the absence of such an air base.

49. Senator TUBERVILLE. General Milley, what is the feasibility of retaining Bagram Airfield as a United States base?

General MILLEY. President Biden has directed the withdrawal of United States Forces from Afghanistan by September 11. The withdrawal will include the transfer of Bagram Airfield to Afghan National Defense and Security Forces.

EXTREMISM

50. Senator TUBERVILLE. Secretary Austin, during the hearing, one of my colleagues claimed that 1 percent of those in the military are likely white suprema-

cists. That would suggest that 35,000 members of the military might be white supremacists. Do you think this is accurate? Explain your answer.

Secretary AUSTIN. I believe that the vast majority of servicemembers, civilians, and contractors in DOD honor their oath to support and defend the U.S. Constitution, and these individuals perform their duties with integrity. However, as we have seen, the actions of a few can have an outsized impact—which is why the Department of Defense prohibits extremist activity such as the use of unlawful force or violence to achieve goals that are discriminating in nature.

51. Senator TUBERVILLE. Secretary Austin, do you believe that accusations like the one above hinders the enlistment of minorities or white members? Explain your answer.

Secretary AUSTIN. As stated previously, I believe the vast majority of servicemembers, civilians, and contractors in DOD honor their oath to support and defend the U.S. Constitution, and perform their duties with integrity.

DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR FISCAL EAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, JUNE 15, 2021

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

ARMY POSTURE

The Committee met, pursuant to notice, at 9:30 a.m., in room SD–G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Rosen, Kelly, Inhofe, Wicker, Fischer, Cotton, Ernst, Tillis, Sullivan, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. The Committee meets today to receive testimony on the President's Defense Budget Request for the Army for fiscal year 2022. Our witnesses this morning are Christine Wormuth, Secretary of the Army, and General James McConville, Chief of Staff of the Army. Thank you both for your service and willingness to appear before us today. I would also, on behalf of myself and my colleague, the Ranking Member, wish the Army a happy birthday. It turned 246 years old yesterday, and we were in it long before its 246th anniversary, so happy birthday.

President Biden's Defense Budget Request for fiscal year 2022 includes approximately $172.7 billion in funding for the Army, a reduction of $3.6 billion from the fiscal year 2021 enacted budget. The Army's request focuses on taking care of its people, maintaining and enhancing military readiness, and innovating and modernizing, but it does so in the face of these significant reductions. Budget briefings indicate that the Army budget decreased while the budgets of the Air Force and Navy increased, primarily because of the focus on China as our pacing threat, and the decision to withdraw from Afghanistan. The Army has thus prepared a tightly crafted budget that prioritizes modernization efforts over procurement and military construction. With that in mind, I am interested in hearing about the Army's view of the mission globally, especially in the INDOPACOM [United States Indo-Pacific Command] theater, now and in the future. Further, we would like to understand the risk the Army is assuming with current funding projections.

The Army's most valuable asset has always been its people. This budget request would increase funding for military personnel by $1.2 billion and support a total force of just over one million soldiers. It also includes adjustments for retirement compensation reform, recruiting and retention incentives, and an across-the-board pay raise for military and civilian personnel of 2.7 percent, an important message to the workforce that begins to reverse years of pay freezes and benefit cuts on our civilian personnel.

The Army must continue to improve its readiness in the context of long-term strategic competition. The Army's ongoing focus on large training exercises, including the Defender series in Europe and the Pacific, and its leadership in the Project Convergence series, demonstrate progress in the right direction. These large-scale events not only test system capabilities and exercise critical skill sets to include mobilization and deployment of the force, they also facilitate joint and coalition training, reflecting how we would fight in future operations. The Army has also introduced the Regionally Aligned Readiness and Modernization Model, or ReARMM, to synchronize all Army components across regions and provide predictability to the formations within the service: regular Army, National Guard, and Army Reserves. This effort has great promise, and I would ask our witnesses to elaborate on how the budget request supports ReARMM and the Army's other important readiness exercises and efforts.

The Army's budget request includes an overall decrease in research, development, testing, and evaluation, RDT&E, but makes important increases in several cutting-edge technology areas. To remain competitive with China and Russia, it is critical that we continue to invest in these emerging technologies which will define future battlefields across all domains. The Army specifically has been pursuing modernization in the areas of long-range precision fires, air and missile defense, soldier lethality, next-generation combat vehicles, future vertical lift, and the communications network. These are ambitious and far-sighted objectives, but we must acknowledge that the Army has historically struggled to effectively modernize.

The establishment of Army Futures Command, and the associated reorganization of related commands, injected tremendous energy into modernization efforts, and Congress has provided the Army with wide latitude to make programmatic and structural changes. Secretary Wormuth, General McConville, I would ask that you update the Committee on the Army's modernization and RDT&E efforts and what resources are needed to effectively continue them.

Finally, as I said at the opening, the Army is fundamentally about people. In previous hearings before this Committee, you have both committed to the Army being a "People First" organization, not just for soldiers, but their families, Army civilians, and veterans. For too long, issues such as racism, extremism, sexual harassment, and sexual assault have, in too many instances, gone unchecked. As we progress through this legislative year, the Committee will tackle many important policy issues, including how we prevent and prosecute sexual assault and harassment in the ranks. More than anything, cultural change within the force is critical to

reducing the number of sexual assaults and related offenses. The President directed a review earlier this year, and I know the Department and the Army have been hard at work. I plan to incorporate the administration's recommendations into the mark and look forward to debate and votes on the issue.

Again, I thank the witnesses for their participation today, and I look forward to their testimonies.

Now let me now recognize the Ranking Member, Senator Inhofe.

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Thank you. Thank you, Chairman Reed. Ms. Wormuth and General McConville, thank you for being here today and for all the great contributions you have made for our safety in this country. I also want to recognize the 246th birthday. I will not tell you what the first birthday in the United States Army was that I celebrated. Well, yes, I will. It was the 172nd. I imagine it would have been a happier birthday had the Army fared better in the President's Fiscal Year 2022 Budget Request.

As I have often said, the world is the most dangerous place that I have experienced certainly in my lifetime, and we face a wide range of adversaries, the most dangerous of which are an increasingly aggressive China and belligerent Russia. At the same time, we must contend with rogue nations like Iran and North Korea, as well as violent extremist organizations.

Our strategic competitors have gone to school on the American way of war, and they are rapidly modernizing their militaries to exploit our vulnerabilities. China and Russia combined are spending more to modernize their militaries than we are. This is something that we have not been able to say before.

This request is a cut to defense, and the Army is bearing the brunt of it. This seems to always be the case every time an administration tries to cut defense, and yet, every time we cut the Army, we end up reversing those cuts soon after. It is a shortsighted approach that fails to recognize the strategic value the Army provides.

With this budget, the Army's top line decreases by $4 billion from the previous year, putting at risk the gains in readiness made after we hit rock bottom in 2017.

Procurement funding decreases $4.2 billion, a debilitating 11 percent cut, and military construction is cut by 15 percent. As we watch our strategic competitors make unprecedented investments in modernization, cuts like this just do not make sense.

So I look forward to understanding from our witnesses the impact of these cuts on the readiness and modernization of the Army, and how it could risk the Army's ability to accomplish assigned tasks from the National Defense Strategy. Mr. Chairman.

Chairman REED. Well, thank you very much, Senator Inhofe, and let me now recognize the Secretary of the Army, Secretary Wormuth. Madam?

STATEMENT OF THE HONORABLE CHRISTINE E. WORMUTH, SECRETARY OF THE ARMY

Secretary WORMUTH. Thank you, Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee. Thank

you for your continued support for our Army and our people. It is a distinct privilege to appear before you today. I would like to take a moment to thank General McConville for his lifetime of service to the Army and to our Nation. He is a great partner and we are off to a running start.

I am honored to be serving as Secretary of the Army and to be working with Secretary Austin and Deputy Secretary Hicks once again. I thank them for their continued leadership.

As I have stepped into the role, all of 3 weeks, I am impressed but not surprised to see the state of the Army and the professionalism, hard work, and continued sacrifice of our soldiers and leaders that make up the world's greatest land fighting force. I would like to highlight a few key observations on the state of our Army as I see them today.

First, the Army must continue to heavily invest in the development of its people. People are the strength of our Army. We are steadily working to enhance our force structure, build inclusive leadership, and invest in quality-of-life initiatives. Like my predecessors, I can assure you that the character, culture, and climate within our formations, at every installation, will reflect a continued focus on placing people first. The harmful behaviors of sexual assault and harassment, racism, and extremism cannot and will not be tolerated.

We will purposefully work to stem the tide of suicides. Our responsibility is to ensure every soldier and civilian has the right leadership policies and resources to be safe and successful among their teams so that they can continue to be successful in our Nation's defense.

Second, the Army is now a leader in new technology. From our Army Futures Command to the cross-functional teams to the Rapid Capabilities and Critical Technologies Office on down to fielding the next-generation soldier equipment for individual unit members, the Army is prototyping and experimenting with new capabilities and concepts. The Army is at the forefront of developing and fielding new technology in counter-UAS, directed energy, hypersonic weapons, next-generation assured positioning navigation and timing devices, pushing software coding to the edge, and in many other areas.

Third, the Army is opening doors in the Indo-Pacific, Europe, and beyond. The Army can be relied upon to engage with our allies, foster partnerships, maintain deterrence, and set conditions for success prior to, or while engaging in conflict. Deterrence requires boots on the ground, and the DOD [Department of Defense] must be present to succeed in crises. The Army is recognized around the world as an enduring, reliable partner that can directly contribute by bringing resources, training, and expertise. Our partnerships can lay the groundwork for access and cooperation in contingencies.

Fourth, the next fight will be an all-domain conflict. Future conflict will be in and across all domains with ground forces to secure terrain, penetrate defenses, and achieve objectives. The Army's transformation is directly aimed at supporting joint warfighting that will depend on joint all-domain command control, expeditionary joint logistics, and joint maneuver across domains. As the Army continues to modernize, we will maintain our overmatch

against near-peer adversaries, helping make future conflict less likely by ensuring the costs to our adversaries outweigh the benefits.

Finally, the Army's readiness gains in modernization procurement requirements must be prioritized to continue. The Army recognized years ago the need to modernize concepts and capabilities to sharpen our global competitive edge. Working in close coordination with you and Congress, we established a deliberate, achievable path to deliver a ready, modernized Army. Significant progress has been made, but success can only be assured through future and continued transformation. The Army has already made, and will continue to make tough decisions to ensure the best use of the resources we have to adapt to and to stay ahead of the capabilities of our adversaries, whether they are near-peer nations or newly emerging threats. The Army will also compete successfully below the threshold of conflict.

The President's Budget will help us to care for our people, maintain and enhance military readiness, and innovate and modernize. With your continued support we will pivot to next-generation capabilities to assure we can win now and in the future.

From what I have seen our Army is in great shape, but we have important work ahead. I want to use this window of opportunity to make certain that the Army will continue to provide modernized and ready forces capable of responding globally. I join General McConville in striving to ensure we provide the Army with the resources it needs to succeed. I know General McConville is eager to share his thoughts with you as well, and I look forward to your questions and our continued partnership. Thank you.

Chairman REED. Thank you, Madam Secretary. General McConville, please.

STATEMENT OF GENERAL JAMES P. MCCONVILLE, USA, CHIEF OF STAFF OF THE ARMY

General MCCONVILLE. Well, I would like to thank the Secretary for leading our Army during this critical time. Chairman Reed, Ranking Member Inhofe, distinguished Members of the Committee, thank you for the opportunity to be here today and for your continued support to the Army and our people, our soldiers, our families, our civilians, and our Soldiers for Life, our retirees, and veterans.

The Army currently has 485,000 Active Duty soldiers and a little more than 1 million in the total force. That is roughly the same size Army that we had on 9/11. Army soldiers are presently supporting combatant commanders around the world in more than 140 countries. They form the most lethal and decisive land force in the world, and they stand ready to fight and win the Nation's wars as part of the Joint Force. I could not be more proud of each and every one of them.

Since last October, the Army's priorities have been people, readiness, and modernization, making us well aligned with the emerging national security guidance. Putting people first means recruiting and retaining the best talent our Nation has to offer, maximizing their potential, and taking care of them. We are building a culture of cohesive teams that are highly trained, disciplined, and fit, where everyone is treated with dignity and respect. That is who we

prevent the harmful behaviors that hurt our soldiers and break trust with the American people, these being sexual assault and harassment, acts of racism and extremism, and death by suicide.

All three of my children, two sons and a daughter, plus my son-in-law, are currently serving in the Army.

Providing a safe and secure environment for our soldiers is not only my responsibility as the Chief of Staff of the Army, it is also a deeply held personal commitment. We win through our people, the best fighting forces in the world, to ensure that soldiers and their units are masters of their craft. This is why we are shifting to a foundational readiness model that prioritizes training at the company level and below first. The Army has rebuilt a high level of readiness with the support of Congress, but that readiness level is fragile. We must sustain that high level of readiness while continuing our most comprehensive transformation and modernization efforts in over 40 years. That is the only way we will maintain our overmatch against near-peer competitors and would-be adversaries.

This year we are turning our multi-domain operations concepts into real doctrine. We are not only developing but we are delivering our six modernization priorities, including our 31+4 signature systems. With new doctrine, organizations, and equipment, the Army is offering multiple options to our combatant commanders and multiple dilemmas to our competitors and adversaries. We are doing so alongside our sister services and alongside our allies and partners. The U.S. Army never fights alone. We are the strongest land force in the world, and a great source of that strength comes from our allies and partners. As a people-based organization, we are uniquely qualified to foster these relationships.

Thank you for your continued support to America's sons and daughters in uniform. I look forward to your questions.

[The joint prepared statement of Secretary Wormuth and General McConville follows:]

JOINT PREPARED STATEMENT BY THE HONORABLE CHRISTINE E. WORMUTH AND GENERAL JAMES P. MCCONVILLE

EVOLVED PRIORITIES

America's Army remains prepared to compete globally and fight and win the Nation's wars as a member of the Joint Force. As demonstrated repeatedly over the past year, we also remain the Nation's principal response force to protect our country and communities in the face of unexpected crises. We thank Congress for the consistent, predictable, and sustained funding you have provided. This funding enabled us to deliver a ready Army that responded promptly and superbly to a dynamic and unpredictable security environment, like the COVID–19 pandemic, Middle East tensions, civil unrest, cyberattacks, and south-west border mission. Our priorities are well aligned with the Interim National Security Strategic Guidance: investing in people, sustaining readiness, divesting of legacy systems to reinvest in cutting edge technologies and capabilities, mitigating the impact of climate change, and strengthening our alliances and partnerships.

Last October, the Army evolved its priorities to people, readiness, and modernization. This evolution reflects the achievements of a multi-year effort to rebuild readiness and accelerate modernization. Six years ago, we recognized that readiness had declined precipitously after years of reduced funding, uncertain budgets, and deferred modernization. We also recognized the need for new concepts, capabilities, and posture to compete aggressively in the Indo-Pacific and Europe. With your support, we rebuilt tactical readiness in our units and built strategic readiness in our power projection infrastructure. We deliberately executed internal reforms over the last four years by realigning over $35 billion within the Army budget to self-fund modernization priorities in support of joint all-domain operations.

Thanks to your continued support for Army modernization, we are successfully pivoting from the incremental improvements of the past to fulfilling the robust Army Modernization Strategy that Congress prescribed in the 2018 National Defense Authorization Act. Because of this strategy, and new Congressional authorities to streamline the acquisitions process, we are already beginning to field new systems in long-range precision fires, air and missile defense, and soldier lethality, with more on the way in next generation combat vehicles, future vertical lift, and the Army network. With these modernization capabilities, we are able to deliver multi-domain concepts,

capabilities, and formations that will give the Joint Force asymmetric, all-domain advantages against near-peer potential adversaries. Our gains are real, but fragile. With Congressional support, we established a deliberate achievable path to deliver a ready and modernized Army by 2028 and a transformed multi-domain Army by 2035. However, sustaining today's readiness and modernizing for tomorrow's readiness is only possible through your timely, adequate, predictable, and sustained funding.

STRATEGIC ENVIRONMENT

A dynamic global security landscape continues to challenge our Nation. These challenges include: (1) borderless threats, like COVID, cyber, violent extremism, and climate change; (2) the global siege on democracy to include an increasingly contested information environment; and (3) the changing distribution of global power that draws new lines and value propositions for many of our allies and partners. These challenges require an agile, ready, modern, and multi-domain Army that works alongside strong allies and partners. Strategic competitors and regional actors are testing American norms, institutions, and alliances. China, our pacing threat, increases its global assertiveness, while Russia increases its disruptive behavior. Threats from Iran, North Korea, and violent extremism and terrorism remain. While America's Army maintains a tenuous overmatch, it is fleeting. Future conflicts will manifest at longer range, across all domains, and at much greater speed, both physically and cognitively.

Climate change is altering the Army's operational environment and adding new mission demands; mitigating these effects has been an ongoing priority for the Army for several years. Climate change impacts Army installations globally and opens the Arctic as a new geographic theater for competition. The Army must consider alternative energy sources, improved energy storage, fuel-efficient design, more robust power distribution, and new technologies, such as weather pattern and terrain stability modeling to better inform operations.

The Army must also contend with threats from within. The harmful behaviors of sexual assault, sexual harassment, racism, and extremism hurt Soldiers and break trust with the American people. The Army is working diligently to solidify a culture of cohesion and intervention to protect our Soldiers, not only from the deliberate fratricide of these behaviors, but from the invisible danger of mental and behavioral health issues, and other stressors that can increase the risk of suicide.

PEOPLE FIRST

Listening to Soldiers led to our very deliberate decision to re-align our priorities. The Army's number one priority is now people. Our people are our Soldiers from the Active, Guard, and Reserve components, Army families, Army civilians, and retiree and veteran Soldiers for Life. At every echelon, the Army must promote and build cohesive teams (1) that are highly trained, disciplined, and fit, (2) that are ready to fight and win, and (3) in which each person is treated with dignity and respect. Cohesive teams are the foundation of all our people initiatives and how the Army can best sustain readiness and transform for the future. Three critical enablers from the 2019 Army People Strategy continue to set conditions for putting people first: Army Culture, Quality of Life initiatives, and a 21st Century Talent Management System.

Army Culture

Last December, the Army stood up the People First Task Force to address and implement the 70 Fort Hood Independent Review Committee recommendations, with the understanding that the issues identified are not unique to a single installation. Army leaders are stewards of a special bond of trust and confidence with the American people. We held accountable those leaders deemed to have broken that trust. We have fundamentally transformed our command selection process in order to improve the way we choose future leaders to assume positions with the most influence over Soldiers. We are piloting independent climate assessment teams of sub-

ject matter experts to identify unit climate trends early and respond before systemic problems emerge. We are listening to our people to learn and lead better. We conducted 96 listening sessions across 14 locations in addition to a special "Solarium" conference that asked junior- and mid-career leaders to develop solutions. The Army is now working to change policies and aspects of Army culture that impede prevention and response to harmful behaviors. The first policy change introduced "absent—unknown", an additional duty status code which affords missing Soldiers oversight not present in "Absent Without Leave (AWOL)."

"This is My Squad" is the foundational principle for Army culture. This initiative, led by the Sergeant Major of the Army, promotes cohesion by encouraging Soldiers to better know those around them, develop greater compassion, and intervene early to protect others. Implementation actions include increased non-commissioned officer professional military education, redistribution of experienced leaders, and better reception processes for integrating new Soldiers at each installation and unit.

Project Inclusion is a holistic effort to improve diversity, equity, and inclusion across the force. As of March of this year, the Army had conducted 83 Project Inclusion listening sessions with over 4,700 attendees. Separately, the Army reviewed its policy on official photos and removed official photos from all promotion boards. The Army later redacted race, ethnicity, and gender data from Soldier Record Briefs in accordance with the Secretary of Defense's direction. The Army is building relationships with influencers in diverse cities and communities to better acquire, develop, employ, and retain the best talent across the entire Nation.

Quality of Life (QoL) Initiatives

Putting people first also means creating a duty and installation environment that allows Soldiers to thrive. The Army continues to prioritize the QoL focus areas identified in 2019. The COVID era only reinforced how essential each of those initiatives is to the well-being and readiness of our Soldiers and their families.

Housing and Barracks. We continue executing the Army Housing Campaign Plan to shape policies, procedures, and processes at every echelon. The Army implemented 14 of the 18 tenets of the Tenant Bill of Rights in its Residential Communities Initiatives (RCI) projects. We expect the remaining four (common tenant lease, 7-year maintenance history, dispute resolution and rent segregation) to be available at the majority of installations with privatized housing by June 1, 2021. We implemented mechanisms that hold privatized companies accountable to residents for proper maintenance and customer service, hired additional personnel to provide quality assurance oversight, and implemented 100 percent change of occupancy inspections and quality assurance checks. To address environmental hazards (mold and lead), we developed educational materials, a response registry, and policies for habitability and displaced residents. Through the RCI, we are committing over $1.8 billion and reinvesting another $1 billion to improve residential housing. Additionally, the Army is projected to invest over $10 billion in the next 10 years, in both Restoration & Modernization and Military Construction funds, which will renovate or replace more than 1,200 barracks for all components and eliminate substandard barracks.

Healthcare. Army Medicine is partnering with the Defense Health Agency to deliver the best care for our beneficiaries across our installations. We are focusing on readiness as the Military Health System reforms. We will emphasize operationally oriented training, modernized capabilities, and innovative operational concepts. We are grateful to Congress for increases in Health Professional Officer special pay caps. This necessary investment ensures Army Medicine can recruit and retain the best quality healthcare professionals for the sustainability of the force.

Childcare. Childcare professionals serve on the front line of the Army's response to the COVID–19 pandemic as they allow mission essential personnel to maintain Army readiness. The Army has a multi-pronged strategy to maintain, and in some cases, increase access to care. With continued Congressional support, we plan to build 21 additional Child Development Centers by fiscal year 2030, adding approximately 4,000 spaces. We appreciate Congressional support for the three centers funded in fiscal year 2021, two in Hawaii and one in Alaska. We continue to invest in these professionals, adjusting compensation to recruit and retain quality staff. We are incentivizing the family child care program, like a $1,000 bonus for new providers and for families that stay in the program after a move. We implemented revised DOD priorities for childcare to grant more access to military families. Finally, we continue to invest in fee assistance to buy down the cost of off-post care when on-post care is unavailable.

Spouse Employment. With the support of Congress, the Army continues to make improvements in spouse employment. The Army reimburses up to $1,000 for professional licensing and certification in a new state, with Army Emergency Relief offer-

ing an additional $2,500. We thank Congress for its efforts to bolster the support of individual states in granting reciprocity. We streamlined the Home-Based Business application and approval system, improved policies for military spouse hiring preference, strengthened the Employment Readiness Program, and made the transfer of non-appropriated fund employees between installations easier. We continue to work with the Office of the Secretary of Defense (OSD) to promote workforce development scholarships, improve state license reciprocity and professional license compacts, and reduce overseas employment barriers.

Permanent Change of Station (PCS) Moves. Soldiers are now receiving PCS orders an average of 120 days before their report date, an improvement of 30 to 90 days. Families can now claim 100 percent of their costs for reimbursement when conducting a personally procured move. Our development and launch of the "Army PCS Move" app and automation of several business processes, including the Smart Voucher program, are helping families research, book movers, track progress, and file claims, expediting reimbursement. Though COVID–19 heavily impacted last summer's peak PCS season, we still executed over 70,000 moves with a 95 percent satisfaction rate.

21st Century Talent Management System

The Army continues to refine and implement its 21st Century Talent Management System in order to effectively acquire, develop, employ, and retain talent. We are maximizing the potential of each Soldier. We are evolving our marketing and recruiting with initiatives like Army Hiring Days and the "What's Your Warrior?" campaign to bring in the best talent from across the country, including cities and communities with populations who may be unfamiliar with the opportunities military service affords. This year the Army launched cutting-edge digital talent initiatives. Our Army Artificial Intelligence Center partners with Carnegie Mellon University to grow data engineers and data technicians, while our Software Factory leverages the extraordinary existing talent in our Army to grow coders to solve Army problems.

At the heart of the Army's 21st Century Talent Management System are new approaches, systems, and processes that leverage deep data about unit needs and Soldier knowledge, skills, behaviors, and preferences. The Integrated Personnel and Pay System—Army (IPPS–A) is on track to go live across all three components by the end of this calendar year. Release 2 is complete, having brought IPPS–A to the Army National Guard across 54 states and territories. Release 3, currently in testing, will integrate the Active and Reserve forces and complete the Army's transition to a single system across all components capable of identifying needed talent and managing Soldier careers from accession to transition.

Talent management starts with having the right Army leaders at the battalion and brigade-level. These are the Army's most consequential leadership positions in terms of affecting retention and attrition. In the biggest change to the Army's command selection process in fifty years, the Army now uses a Commander Assessment Program to select future battalion and brigade commanders, as well as command sergeants major. This intensive five-day program evaluates individuals for their temperament, cognitive fitness, physical health, and leadership skills. We are also expanding to build a system to assess and select our Army Acquisition Corps civilians at the same echelons. We are putting the right people in the right place at the right time to remain ready today.

READY TODAY

The Army stands ready today to compete globally and fight and win the Nation's wars in support of the Joint Force. This is only because we recognized six years ago that readiness had declined precipitously after three years of reduced funding and uncertain budgets. Since then, and funding from Congress, we rebuilt tactical readiness and built strategic readiness. However, readiness is fragile. We require continued support to maintain it, in order to reliably meet the needs of combatant commands without overstressing our people.

People are the Army's most important weapon system. The Army represents 25 percent of the Defense Budget, 35 percent of the Active Force, and 45 percent of the Active and Reserve forces, but meets over half of global demands. Today, the Total Army supports the Joint Force by supplying Soldiers to combatant commanders in more than 140 countries. Over 69,000 Soldiers are in the Indo-Pacific, including over 25,000 forward deployed on the Korean peninsula. Over 30,000 soldiers are in Europe supporting NATO and the European Deterrence Initiative, including the forward command post of our newly reactivated V Corps. We remain dedicated to our counterterrorism and train, advise, assist missions, providing over 21,000 soldiers in support of the U.S. Central Command theater. In our Nation's

Capital this year, over 26,000 National Guard soldiers mobilized from 28 states to assist with medical evacuation, communications, security, logistics and safety support. Last year, we executed 64 brigade-equivalent deployments and moved 45 thousand pieces of equipment through 55 ports of embarkation/debarkation in support of worldwide missions.

This past year highlighted the need for the Army to defend the Nation at home as well as abroad. In response, the Army continually demonstrated its capability and capacity to provide timely and effective support in crisis. The COVID–19 pandemic expanded the Army's existing mission set as DOD's leader in protecting the warfighter from biological threats and investigating infectious diseases that threaten public health. Since last March, Army scientists, medical professionals, engineers, and logisticians from all components have deployed nationwide to aid COVID prevention and response efforts. For its vaccine development and distribution initiative, America turned to an Army logistician to lead operations. Our National Guard and Reserve units across America supported both neighbor and nation in an unprecedented level of mobilization, not only for COVID support, but in response to civil unrest, hurricanes, and wildfires, all while continuing to train for wartime missions.

In 2020, the Army demonstrated strategic readiness through its series of DEFENDER exercises, despite the constraints of a pandemic environment. Strategic readiness involves installation capabilities to mobilize, train, and deploy formations and then sustain them from the Homeland. DEFENDER–Pacific 2020 witnessed the deployment of combat credible forces across the breadth of the Indo-Pacific theater from Guam and Palau to the Aleutian Island chain and mainland Alaska. Under the command and control of U.S. Army Pacific, combined joint forces executed strategic readiness operations that included cargo delivery, forcible entry operations, rapid infiltration of High Mobility Artillery Rocket System (HIMARS), operational maneuver of Army watercraft, and fighter combat patrols. DEFENDER–Europe 2021 is currently underway with over 30,000 multinational forces from 27 nations conducting nearly simultaneous operations across 30 training areas. This year's exercise will incorporate Security Force Assistance Brigades, the Army's new V Corps, and U.S. Air Force and

Navy assets. DEFENDER–Europe 21 is led by the Army's newly consolidated United States Army Europe and Africa Command.

The foundation of Army readiness is our people. The Army is moving to a foundational readiness model that prioritizes the training of individuals and small units at the company level and below. The best combat units in the world ensure their individuals and small units are masters of their craft. To foster individual readiness, the Army is also investing in holistic health and fitness. We continue to study the impact of the Army Combat Fitness Test in accordance with Congressional guidance in order to better connect individual fitness with combat readiness. A solid foundation of readiness enables unit agility and provides the greatest return on an investment of limited time and resources. We will continue to use the combat training centers to bring these highly trained, disciplined, and fit teams together for large-scale collective training that validates the combat effectiveness of our battalions and brigades.

The Army must balance the continuous demand for current readiness from combatant command requirements with the imperative to secure future readiness, all without overly stressing our people or our equipment. To this end, the Army developed, tested, and rehearsed a new unit lifecycle model that will go into effect October 2021: the Regionally Aligned Readiness and Modernization Model (ReARMM). ReARMM will harmonize historically conflicting Army priorities. It will take care of people by reducing operational tempo and maximizing predictability and stability to commanders, Soldiers, and families. ReARMM will sustain readiness by carving out dedicated windows for building readiness at echelon while aligning units with primary regions and functions. Regional alignment provides units deep wells of knowledge on the terrain, culture, and people where their units are most likely to operate. Joint force commanders also gain by leveraging habitual, trusted relationships between Army formations and Allies and partners. Finally, ReARMM will facilitate modernization by giving units dedicated windows to integrate new equipment, reorganize formations, and train on new doctrine. Adopting this model transitions the Army from small, incremental, evolutionary modernization of platforms to large-step modernization of our formations.

ARMY MODERNIZATION—TRANSFORMING FOR TOMORROW

The Army faces an inflection point that requires innovation, creativity, and entrepreneurship in the application of combat power. The battlefield is increasingly faster, more lethal, and more distributed. Overmatch will belong to the side that can

make better decisions faster. To meet emerging challenges, the Army is transforming to provide the Joint Force with the speed, range, and convergence of cutting edge technologies that will generate the decision dominance and overmatch required to win the next fight. We are leading the way in developing and fielding advanced technology in support of the Joint Force.

The Army's materiel modernization transformation—what we fight with—is based on the six modernization priorities announced in 2018: Long Range Precision Fires, Next Generation Combat Vehicle, Future Vertical Lift, the Army Network, Air and Missile Defense, and Soldier Lethality. The Army's conceptual transformation—how we fight—begins with our Multi-Domain Operations concept, which we are currently turning into doctrine. The Army is using Project Convergence, our campaign of learning and annual capstone event, to shape future concepts and capabilities. By 2035, the Army will realize its vision of a multi-domain force.

The Army is committed to seeing our signature materiel modernization efforts through to completion. Many are coming on line according to, or ahead of, our accelerated development schedule and being delivered to our Soldiers. Through continuous reform efforts, we have been able to redirect scarce resources to these key modernization efforts; however, we could not achieve this without Congressional support and authorities. Army Futures Command is providing unprecedented unity of effort across the modernization enterprise, having changed our business model and culture through public-private partnerships and a focus on Soldier-centered design. This allows us to gain immediate operator feedback, accelerating the development process and ensuring new systems are effective in operational environments. These reforms, combined with early experimentation through Project Convergence, are paying significant dividends. Judicious use of Middle Tier Acquisition and Other Transaction Authorities enable progress from characteristics to fielded capabilities in as short as three years, versus the five to seven years it took just to prescribe requirements in the past.

Long Range Precision Fires

Long range precision fires provide the capability to penetrate Anti-Access/Area Denial (A2/AD) environments, suppress air defenses and strike maritime targets at range from land, and establish our own A2/AD capability to open windows of opportunity for the Joint Force to exploit. In 2019, OSD directed the Army to develop a ground based long-range hypersonic weapon. In fiscal year 2023, the Army will field the first Long Range Hypersonic Weapon (LRHW) firing battery. The Army is also developing a ground-launched, Mid-Range Capability that will complement the LRHW and the Precision Strike Missile (PrSM) capabilities. The PrSM is on schedule to conduct its maximum range test in 3QFY21 and deliver 30 missiles in fiscal year 2023. It will provide greater range, lethality, and survivability at a lower cost per shot than ATACMS. The Extended Range Cannon Artillery remains on schedule for delivery in fiscal year 2023. It will establish overmatch against peer adversaries in the close and deep operational maneuver areas with an extended range out to 70km.

Next Generation Combat Vehicle

Next generation combat vehicles will increase the firepower, speed, and survivability of land forces, allowing them to maneuver into positions of advantage in the future operational environment. After rebaselining the Optionally Manned Fighting Vehicle (OMFV) program last year, the Army issued the final request for proposal for the concept design phase on December 18, 2020. OMFV is an example of how our new acquisitions process enabled the Army to learn early and recover before programs become too big to fail. The Robotic Combat Vehicle (RCV) effort envisions an unmanned platform that provides decisive mobility, lethality, survivability, and increased situational awareness to formations. RCV will undergo increasingly rigorous experiments and capability demonstrations with a decision to procure by fiscal year 2024. The Armored Multi-Purpose Vehicle (AMPV) is an adaptable and more survivable multi-variant vehicle that replaces the 1960s era M113 Family of Vehicles. Mobile Protected Firepower (MPF) is an armored combat vehicle that will provide, large caliber, long-range direct fires in support of Infantry Brigade Combat Teams. The first unit equipped with MPF will be in fiscal year 2025.

Future Vertical Lift

Future Vertical Lift platforms and technologies increase the maneuverability, range, endurance, lethality, and survivability of Army aircraft, providing joint commanders with increased operational reach and effectiveness against near-peer competitors. Our new acquisitions process has put the onus on industry to innovate and invest early, allowing the Army to "fly before we buy." The Future Armed Reconnaissance Aircraft (FARA) closes the gap left by retirement of the Vietnam-era

Kiowa. Two prototypes will fly in fiscal year 2023 followed by a year-long flight demonstration. The Future Long Range Assault Aircraft (FLRAA) will replace the UH60 Blackhawk with increased speed, range, payload, and endurance. We expect initial FLRAA prototypes in fiscal year 2025. Future vertical lift will leverage advances in Unmanned Aircraft System (UAS) technology to develop Air Launched Effects (ALE) with a wide array of payloads and extended communication mesh networks with a fielding plan in fiscal year 2024.

Army Network

The Army network modernization underpins Project Convergence as the Army's contribution to Combined Joint All-Domain Command and Control. It provides necessary information technology (IT) infrastructure to link the right sensors to the right shooters through the appropriate command and control node. In fiscal year 2021, we will field more than 150 units with new technologies while simultaneously developing the next capability set of equipment. The Army is also modernizing current Global Position System (GPS) receivers to meet current and emerging threats by providing the Joint Force with advanced assured precision, navigation and timing (APNT) systems. Included are modernized receivers that meet congressional mandates to transition to M-code GPS and integrate alternative APNT technologies for our ground combat platforms, dismounted Soldiers, precision weapons and munitions, and aviation systems. We are fielding the first generation mounted APNT systems to our forward deployed formations with a second generation ready not later than fiscal year 2023. Additionally, the Army continues to invest in space-based technologies that close operational gaps in deep sensing and targeting activities. We are coordinating with partners in the Intelligence Community and private industry to enhance Army access to Low Earth Orbit (LEO) space-based sensing and link with national-level capabilities to provide tactical-level sensor to shooter capability to combat formations.

Air and Missile Defense

Air and missile defense capabilities defend the Joint Force, allies, and partners against manned and unmanned air and missile threats. The Army's integrated air and missile defense capabilities will protect joint forces from adversary aircraft, missiles, and drones to protect the force and enable operations. This includes both theater systems and tactical / short-range air defense like the Maneuver-Short Range Air Defense (M–SHORAD) which defeats aerial threats to the maneuver force with a mix of kinetic capabilities. The Rapid Capabilities and Critical Technologies Office (RCCTO) is developing a Directed Energy (DE) M–SHORAD variant that utilizes a 50kW class laser. We will field four DE prototypes for experimentation and further development. Indirect Fire Protection Capability (IFPC) will defend fixed and semi-fixed assets primarily against cruise missiles and Unmanned Aircraft Systems as well as fixed and rotary wing aircraft. Based on the authorization in the 2021 NDAA, the Army is currently preparing two Iron Dome batteries for operational deployment at the end of fiscal year 2022. This spring the Army will conduct a shoot-off to inform our decision on the enduring IFPC solution. RCCTO is also working on two IFPC variants, a High Energy Laser (HEL) and a High-Powered Microwave (HPM). The IFPC–HEL uses a 300kW-class HEL to defeat Rocket, Artillery, and Mortar (RAM) threats and is on track for demonstration. The IFPC–High-Powered Microwave is being developed with the Air Force to produce the Tactical High Power Microwave Operational Responder (THOR) in fiscal year 2021 with a prototype expected in fiscal year 2024. The Integrated Air and Missile Defense Battle Command System (IBCS) initial operational capability is 3QFY22 with fielding. IBCS is a revolutionary command-and-control system that streamlines sensor to shooter linkages for air and missile defense engagements—and once fielded with enable optimized employment of the Patriot force. This enhanced tracking system delivers an unambiguous view of the operating environment, allowing commanders and air defenders to make critical decisions within seconds. The Lower-Tier Air and Missile Defense Sensor (LTAMDS) will deliver the next generation sensor that leverages the capabilities of the Patriot Missile Segment Enhanced (MSE) interceptor and is fully integrated into IBCS.

Soldier Lethality

Soldier Lethality improvements to weapons, sensors, body armor, and training will deliver decision dominance and overmatch at the level where it matters most, allowing individual Soldiers to quickly understand and react to emerging situations. With ReARMM, we are incorporating Guard and Reserve units into the fielding schedule much earlier and more broadly than in past modernization efforts. The Army seeks continued Congressional support for the rapid prototyping, development, and procurement of the Next Generation Squad Weapon (NGSW) Rifle and

Automatic Rifle, Enhanced Night Vision Goggles (ENVG), Integrated Visual Augmentation System (IVAS)—Heads-Up Display (HUD) 3.0, and the Synthetic Training Environment (STE). By 1QFY22, we'll equip the first unit with IVAS. In 4QFY22, we will equip the first unit with the Next Gen Squad Weapon Rifle and Automatic Rifle, as well as General Purpose Ammo. STE efforts that complement IVAS include the Squad Immersive Virtual Trainer (as part of IVAS) and the STE Information System that includes: One World Terrain, Training Simulation Software, and Training Management Tools.

In addition to our six priorities, the Army understands the need for considerable investment in long-term research to deliver science and technology solutions. The Army is aligning its laboratories towards modernization and partnering with over 250 research institutions. The Army's priority research areas are: disruptive energetics, Radio Frequency (RF) electronic materials, quantum research, hypersonic flight, artificial intelligence, autonomy, synthetic biology, material by design, and advanced manufacturing.

The Army is also investing in deep sensing and analysis to provide intelligence support to long range precision fires and commanders' situational awareness during Joint All-Domain Operations. We will continue to drive intelligence modernization by acquiring capabilities and capacities across the Space, Aerial, Terrestrial, and Foundation Layers nested with and in support of the Army's six modernization priorities.

We will continue to leverage the Intelligence Community (IC), other Services', and commercial partner enterprise-level Intelligence, Surveillance, and Reconnaissance collection programs to provide timely, accurate, and relevant intelligence to support Army targeting efforts and enhance commanders' decision making.

The Army is not just modernizing concepts and materiel. We require continued budget support to modernize infrastructure and execute workload in our Organic Industrial Base (OIB) of depots, arsenals, and ammunition plants, along with our power projection and Mobilization Force Generation Installations to better project power from and into contested environments. We must be able to address the risk of new and emerging cyber, information, and physical threats that can thwart our ability to project power by disrupting installation operational capabilities and the supply chains supporting our forces, whether from malign actors or nature. Our installations must be resilient to disruption and modernized in support of the modernized Army force. The Army is investing significant time and resources to mitigate the effects of climate change on our installations. We are establishing energy and water resilience, efficiency, and affordability across our installation enterprise. In the past five years, energy programs, partnerships and initiatives recognized a cost avoidance or savings of more than 14 percent, every installation has added a full-time energy manager position, and 16 of 26 Army OIB depots, arsenals and ammunition plants have transitioned from fossil fuels to clean energy alternatives. We are also partnering with private industry to implement energy and utility savings contracts that maximize the latest technology to drive efficiency and reduced costs, with 99 agreements currently in execution.

The Army is also not modernizing in a vacuum, but in partnership with our sister Services. We have completed two Army-Air Force Warfighter Talks and one Army-Air Force-Navy joint session to ensure the Army's Project Convergence initiatives remains synchronized with the Air Force's Advanced Battle Management System and the Navy's Project Overmatch to meet the unique needs of each Service. As we work to stand-up a Multi-Domain Task Force (MDTF) in Europe later this year, our Indo-Pacific aligned MDTF continues to synchronize effects with the Joint Force during multiple exercises. The MDTF's All-Domain Operations Center enables Joint training, to include hosting

Carrier Strike Group-3 for the Navy's Fleet Synthetic Training—Joint exercise and connecting to the Navy's Continuous Training Environment network. During INDOPACOM's Pacific Fury 21, the MDTF validated its ability to virtually synchronize long range fires and effects with the Joint Force. The MDTF will participate in USINDOPACOM's upcoming Northern Edge and Joint All Domain Command and Control (JADC2) Simulation Experiment (SIMEX) in May before rotating into the Indo-Pacific later this summer to participate in joint exercises with PACAF, PACFLT, and MARFORPAC.

STRENGTHENING ALLIANCES AND PARTNERSHIPS

America does not fight alone. Alliances and partnerships are among the greatest sources of our military strength. This global landpower network is DOD's foundation for competition, creating inroads and maneuver space for Joint and whole-of-government strategic engagement. As a people organization, the Army is uniquely quali-

fied to maintain and expand this vital network, especially given that partner militaries and their senior leaders are predominately land force-centric. Our roadmap for building and strengthening relationships spans a range of activities that include military and key leader engagements, education and training programs such as the Department of State's International Military Education and Training (IMET) and International Professional Military Education (IPME), security assistance through Title 22 Foreign Military Sales, and advise and assist capabilities. Boots on the ground deter would-be adversaries, and small, scalable engagements with our Allies and partners open doors to the access and presence we need to compete effectively. The Army's new Security Force Assistance Brigades (SFAB) demonstrate our commitment to alliances and partnerships and our capability to compete.

Last year we completed the activation of all six SFABs, five in the Regular Army and one in the Army National Guard. Since then, 5th SFAB has already completed missions with multiple partners across the Indo-Pacific theater, including elements of the Thai, Indonesian, and Indian armies. Later this year, many of those partners will join their American counterparts in combined exercises at the National Training Center. Engagements such as these are vital, not only for interoperability, but in recognition that Cold War-era exclusive allegiance to a single great power no longer exists. Many if not all of our allies and partners maintain concurrent relationships with both the United States and our competitors and potential adversaries. We cannot take for granted these relationships and the vital access and presence they provide us.

CLOSING

The men and women of the United States Army are the greatest Soldiers in the world. The Army is cultivating cohesive teams, maximizing talent, sustaining tactical and strategic readiness, progressing through our greatest transformation in over 40 years, and strengthening our alliances and partnerships. We are leading the way in developing and fielding high technology for the Joint Force. We are opening operational and strategic doors in the Indo-Pacific and Europe. We are succeeding through calibrating our force posture around the globe to assure our partners and deter would-be adversaries, and we need your continued support. With timely, adequate, predictable, and sustained funding, we will remain ready to fight and win our Nation's wars—now and into the future.

Chairman REED. Thank you, General McConville. As I mentioned in my opening statement, and as is obvious to all, the focus on Chinese as the pacing threat is taking a lot of your attention and time. Also with the decision to withdraw from Afghanistan that is adding additional, I think, emphasis to the Indo-Pacific region.

Secretary Wormuth, with your policy and strategy expertise, what do you see is the appropriate role of the Army in Indo-Pacific?

Secretary WORMUTH. Thank you, Chairman. I think there are a number of roles for the Army in the INDOPACOM AOR [area of responsiblity] across the full spectrum of competition, if you will. First, I think the Army is uniquely well positioned to serve our Nation in the competition phase. You know, many of the chiefs of defense in the countries in Asia are actually Army generals, and so they are particularly interested in partnerships with our Army, and I know General McConville has seen that in his many visits with his counterparts.

We can use those relationships to increase our alliances and partnerships to deepen our relationships with those countries so that, as I said in my opening statement, in a time potentially where tensions are rising, we may be able to leverage those positive relationships for access that can be very helpful, and we are doing that with things like our Security Force Assistance Brigades, with elements of our multi-domain task force that right now is working out of JBLM [Joint Base Lewis-McCord] in Washington, and that we are going to build on in the future.

Then moving up the spectrum of competition into conflict, the Army, particularly with the modernization programs we are pursuing, can do a number of things: provide long-range precision fires, again through the numerous programs we have there to go after maritime and air targets. We can provide a layered air defense, which will help us in terms of the anti-access and area denial capabilities we face there. We are pursuing making sure we have a survivable, resilient network, which we know we are going to need given the counter-space capabilities that we face.

So I think, again, as part of the Joint Force, the Army can be very, very useful in terms of bringing options to the combatant commander in INDOPACOM.

Chairman REED. Thank you very much, Madam Secretary. General McConville, how do the Army modernization efforts complement and support the strategy that the Secretary just talked about?

General MCCONVILLE. Yes, Chairman. As we take a look at our modernization priorities, what they provide us is speed, they provide us range, and they provide us this concept of convergence, when we bring together all the Army's systems and the joint systems and the future, even our allies' and partners' systems, and that gives us the decision dominance that we need, and quite frankly, the overmatch we need to deter competitors and potential adversaries. I would argue that we get deterrence through strength. That strength comes from a strong Joint Force working together, and it comes from strong allies and partners, and we have strong allies and partners, as the Secretary said, in the region.

Chairman REED. Thank you very much. Madam Secretary, you just returned from Fort Hood. Senator Inhofe and I went there in the wake of the serious situations that developed there. There are many factors involved, but obviously command climate, leadership engagement—one of the more disconcerting comments that I heard was from a sergeant major, saying that the troops do not trust the commanders and the commanders do not know the troops. That might be a function of constant deployments and constant activity, but still it cannot be tolerated.

Can you give us your comments and observations about the positive changes that you have made and will make?

Secretary WORMUTH. Certainly. We are very focused on building cohesive teams down to the lowest level. So we have launched the This is My Squad initiative, and the Sergeant Major of the Army is our point man on that effort. We are, as you know, completely redesigning the SHARP [Sexual Harassment Assault Response and Prevention] program. We are also restructuring our Criminal Investigative Division so that, among other things, we will have more experienced investigators to handle these kinds of special victim crimes.

I want to share—well, one other thing I will touch on before I share just an observation. A very important piece we have also undertaken is the Command Assessment Program that really is revolutionizing how we are selecting future leaders, and takes into account their past performance on command climate. But I did a sensing session with soldiers, myself alone in the room, and one of

the things I heard strongly was they feel that their commanders do care. I think they think their commanders have a lot of things on their plate that makes it hard for them to have time to care, but there was a sense of caring that was very clear.

Chairman REED. Thank you very much. Senator Inhofe, please.

Senator INHOFE. Thank you, Mr. Chairman. First of all, let's get another shot at the Army budget cuts. As I stated in my opening remarks, the Army bears the brunt of the disappointing President's Budget Request that prioritizes a domestic agenda over national defense. I am reminded also of the amendment that I had on there for parity between defense and non-defense. I will have to go back and check, but I think this is the first time in 10 years or so that we have actually come out and said parity is not something that is going to be pursued, and that is the first time the statement has been made in a recorded vote.

General McConville, please describe the impact—I will give you another shot at the same thing that you were just now talking about—and the risk of these cuts on the Army's ability to modernize the force for competition, and if necessary, if it should become necessary, conflict with China and Russia, and to fulfill its obligation to the other combatant commanders, which they would have to do at the same time. Talk about capacity. Where do we stand with that now?

General MCCONVILLE. Well, Senator, as I said in my opening statement, the end strength of the United States Army is 485,000 on the Active and a little over 1 million when it comes to the total force. That is the same size Army that we had right before 9/11. As we all know, we go to war with the Army we have, and we had to grow that Army during the conflicts in Afghanistan and Iraq, and so we have frozen that end strength at 485,000. Would we like to have a bigger Army, depending on the strategy? Absolutely. But with the budget we have we are trying to bring forward the best Army that can fight tonight and win.

But also what I would argue, more importantly in the future, as we watch our strategic competitors continue to improve their capabilities, the budget gives us the most efficient capability when it comes to readiness. If we are going to send forces into harm's way they have got to be ready. As the Secretary talked about, we are focusing on the squad, platoon, and company level, to make sure that all those soldiers are ready to go.

Then we have to modernize the Army. I would argue every 40 years the Army has to transform. It did in 1940, right before World War II, it did in 1980, when I came in the Army. Most of the weapons we are using are 1980 vintage, and quite frankly, I think in 2020 we must do the same. So we have done all we can with the Secretary and myself to protect the modernization of the Army, and we believe we must do that. I have outlined in my unfunded requirement letter to you those unfunded requirements that were not met within the budget.

Senator INHOFE. Yeah. Well, in general, I am the first to admit, with the budget that we have, you guys are just doing great. We do not have an adequate budget. That is the problem that we have. Let's look into the future of the cuts. It always seems like when the administration wants to cut defense it goes after the Army

first, and when President Obama reduced defense he cut the Army's base budget by $70 billion and cut end strength by nearly 90,000. So that was a problem that we were dealing with at that time. These cuts left the Army with only one brigade combat team at the highest level of readiness. It took nearly half a decade, and $100 billion of additional funding to fix it.

Now, Secretary Wormuth, while we the Army has worked hard in this request to preserve end strength and limit reductions to its highest modernization priorities, would this be possible with additional budget cuts the next year and the year after that? We all tend to look at where we are today, and I am concerned right now, with the trends that are out there, where we are going to be with budget cuts in the near future. What do you think?

Secretary WORMUTH. Thank you, Senator Inhofe. As you know, Secretary Austin has undertaken both a new national defense strategy review as well as a global posture review, and we, of course, in the Army, are participating in both of those efforts. I think it will be very important in terms of looking to the future to look at how that new strategy is developed and what it requires the Army to do. I would agree with you certainly that we are in a very, very tough international security environment. There is no shortage of threats.

So I think as General McConville and I go forward into future POM [program objective memorandum] builds we are going to have to be looking carefully at what does the strategy call upon us to do, what do we think are the current demands from combatant commanders, and can we meet those current demands while also protecting our modernization efforts, which is going to be critical? Particularly having seen everything we are doing at Fort Hood, and again, the challenge of taking care of our people while also meeting current mission requirements, I think we are having set end strength at 485,000, we are still under stress, particularly in certain areas like air defense, as you know. So we are going to be strong advocates going into the future budget discussions.

Senator INHOFE. Yeah. Well, I do not have any doubt of that, and I know that you are fully aware of the problems that exist if we have reductions, which a lot of people, including myself, are concerned with. So I appreciate the fact that we have the two of you at the helm at this given time, but it is going to take more resources.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Inhofe. Senator Shaheen, please.

Senator SHAHEEN. Thank you, Secretary Wormuth and General McConville, for being here this morning and for your service.

The National Guard plays a critical role both in adding to the total force of the Army but also in the welfare of each of our states. I do not know how New Hampshire could have gotten through the last year and a half with the pandemic without the National Guard. We had the highest percentage of our force structure per capita activated in response to the Guard, and it has come to my attention that there was a recent letter sent by members of the Florida, California, and Texas congressional delegations to the Secretary of Defense that requested larger Guard end strength levels

in line with the per capita size of their states. For a small state like New Hampshire, that is especially troubling to think about what that means for the future.

So can you talk about how we strike the balance between the needs of those large states and small states that have our Guard both working on state missions but are also being activated for the national missions as well?

Secretary WORMUTH. Certainly, Senator Shaheen, and I would ask General McConville to expand on this. When it comes to looking at the National Guard, first I want to agree that they have done a fantastic job all around the country this year. It has really been incredible, whether it has been helping us respond to COVID, natural disasters, or securing the Capitol here more recently.

We need to look at both what the overseas requirements are for the National Guard and how they fit into our contingency plans around the world, whether it is Europe or in Asia. That is part of what we think about when it comes to looking at the size. But we also, of course, look at their support to civil authorities here at home, and try to look at that very holistically. That is something we look at each year as we go through our total Army analysis, and I think, you know, we would want to look carefully at making adjustments, particularly significant adjustments.

But, General McConville, you may want to add to that.

General MCCONVILLE. I think the Secretary—you know, one thing that I do want to say about the National Guard, this has been the year of the Army National Guard. I could not be more proud of what they have done in their communities. They have been there. They have been all over the place. I just could not be more proud of them, and I think, Senator, it comes to balance. We have big states and we have little states. What we want to do is work with each of the states, make sure we know what their requirements are. As we transform the Army, we are working very closely with their leadership. You know, we have certain states that would like to have certain type units that are more beneficial for how they operate within their state, but also the type of people that want to serve in the Army, there are some states that have better opportunities than others.

So as the Secretary said, we need to work very, very closely with them, with you all, and come forward with what the Army looks like, what the National Guard, what the total force looks like in the future.

Senator SHAHEEN. So we should not expect to see an announcement any time soon that will dramatically cut the size of small states' Guard forces to the benefit of large states?

Secretary WORMUTH. Senator, I would not expect—you should not expect to see that. Again, if we are going to make adjustments to the distribution of Guard force around the country, that is something that the Chief and I are going to want to look at carefully.

Senator SHAHEEN. Consult with Congress, I assume.

Secretary WORMUTH. Absolutely.

Senator SHAHEEN. Thank you. Secretary Wormuth, in your opening statement you talked about future conflicts being all-domain conflicts. Do you see hybrid warfare as an all-domain conflict?

Secretary WORMUTH. Senator, I think certainly hybrid conflict or gray zone conflict, as some people refer to it, can take place in multiple domains. So, for example, you may have the little green men that we saw that Russia put into Ukraine——

Senator SHAHEEN. That we are still seeing in Ukraine.

Secretary WORMUTH. Correct, while at the same time you see cyber warfare and information operations, for example. So I do think that hybrid or gray zone conflict can be multi-domain.

Senator SHAHEEN. Well, where I am going with this is concern about how we are preparing to respond to that kind of hybrid or gray zone warfare, because so far we have not been as successful as I would like to see us. So how do we address that, going forward, as we are looking at preparing our Army?

Secretary WORMUTH. I think we do need to do more in that area, and I would anticipate that that is something, again, that in the strategy review it is going to be looked at, because I think we need to build out our thinking about how to operate effectively in that zone. In particular, in the Army, we first of all had been investing for some time now in additional cyber capabilities, for example. We have been paying attention to cybersecurity but also building out or cyber protection teams and doing a lot of work with Army Cyber Command.

We also see, in the Multi-Domain Task Force formation an information operations capability, an electronic warfare capability, and those are the kinds of capabilities I think that we can bring to bear in gray zone situations. We, of course, also have Special Forces, who can go back to the more traditional unconventional warfare that was sort of some of their roots in the Cold War.

So those are, I think, all things that the Army can do, but again, the Chief may want to add.

General MCCONVILLE. So I think you make a very important point, and I think we find ourselves at an inflection point right now. Over the last 20 years we were really focused on irregular warfare, counterinsurgency, counterterrorism. We have to be ready for gray zone, hybrid, but really being contested in what we call every single domain. So, we are going to be contested in cyber, and then the question becomes is that conflict or how does that work? We are going to be contested with a lot of type of systems that we use, all the way back to the United States, and so we are preparing for that.

The second thing is the information influence operations are going to change the way we operate in the future. I would argue, in some cases, information advantage may be more important than even the type of operations that are going on on the ground. We go back to some of the, "Sun Tzu", winning without fighting. You can do that, in some cases, with information operations. Our competitors are not constrained the way they operate in that sphere, and we have to take that very seriously when it comes to cyber information operations and some of the other domains, and we are preparing our forces and our troops to be able to operate in that environment.

Senator SHAHEEN. I could not agree more, having just come back from Europe where they are very concerned about those operations in Russia.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Shaheen. Senator Ernst, please.

Senator ERNST. Thank you both very much for coming to the Committee this morning and for testifying in front of us, and most certainly and most importantly, for your service to our great United States.

I appreciate the efforts that you are truly making to put our people first. I think that is extremely important. But you also must meet mission requirements, modernize the force, and adapt to the new challenges and threats that we see presented before us. As we withdraw from Afghanistan, which will be a significant emotional event for those that have been involved in actions there, as well as their families, I want to commend the force very much and thank them for their service, and your leadership, for the tremendous efforts and accomplishments that we have seen in that theater of operations. For 20 years, the Army, along with our Joint Force, our allies and partners, have kept those threats at bay and away from our Homeland.

So now, of course, the Army does face new challenges, and I am very concerned about this administration's budget as it comes to meeting the needs of the Army. So, Madam Secretary, the Army is executing its modernization strategy, per the 2018 NDAA [National Defense Authorization Act], You state that the gains you have made are real, but fragile, and I agree.

As the only service that is facing real budget cuts this year, how do you intend to keep the gains that you have made?

Secretary WORMUTH. Senator Ernst, I think to preserve the gains that we have made we are going to have to balance multiple dimensions of the Army, inside of its budget. First we are going to have to continue to seek, wherever we can, efficiencies and reforms. As you know, my predecessors and General McConville have done a few cycles of what was called "night court" to be able to identify funding that we could move internally. We have, the big fish have been fished out of that pond. At this point there are more small fish and minnows left there. But we need to keep seeking those efficiencies where we can.

I think we need to work with the Secretary and the combatant commanders to really scrub our current operational requirements, to see if we can find places where we may be able to take pressure off of the Army. Then I think we will have to look carefully at how we make sure, with the resources that we have, that we continue to put people first but really protect those modernization programs. We are playing the long game now, and we have some time to be able to pursue our modernization program. But we really need to keep that, I think, front and center, because our soldiers are our most important asset and they need those new capabilities, those new next-generation weapons systems to be able to execute their missions in the future.

So we are going to have to look very carefully across the whole budget, going forward.

Senator ERNST. Yes, and I think this will be a very delicate balance as we move forward.

So both for you, Secretary, and for you, General McConville, as well, the budget significantly reduces the R&D [research & development] funding, meaning that development, experimentation, and advancement as we are modernizing our force will be hamstrung, even as we are facing continuing evolving threats. So as we are making that balance, you have mentioned the unfunded requests that have gone forward, how would you prioritize, if you could today, if we had unlimited dollars to send your direction, what would those priorities be, and why?

General MCCONVILLE. Senator, one of the things on the research and development—and I will come back to priorities—is we have aligned about 74 percent of our science and technology against the 31+4 systems. We have really moved everything we can do.

So as far as priorities, we have some installation priorities. We often talk about what would be the top priorities. We have some people priorities right now that we would like to finish. We have barracks, we have housing, we have some child development centers that are all in there. It is about people first, and we would like to get those completed. They are in the unfunded requirements.

We also have what we call "enduring systems." We have focused on the 31+4, the modernization systems, but we also have Abrams tanks, we have Paladin howitzers, we have Apache helicopters, we have Black Hawks, we have other weapons systems that are going to be here enduring, that we need to modernize our forces, we need to modernize the National Guard with, so they have the forces when they go off to conflict. Those systems are going to be around for the next 20, 30, 40 years, and so we are improving them, and as the new systems come on, some of those systems will be divest and some will not. Those are where the priorities are, at least for the Army.

Senator ERNST. Thank you very much. I think that is an important point is that while we are seeking to modernize the force, we do have legacy systems as well that will need to be maintained until we see the realization of modernization.

So again, thank you both very much for your service. Trying times for all of us. We certainly are here to support. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Ernst. Senator Hirono, please.

Senator HIRONO. Thank you, Mr. Chairman. Secretary Wormuth, first of all congratulations on your well-deserved confirmation.

Let me start with, we have all acknowledged the importance of sensing our allies, and so what unique tools is the Army investing in to enable joint interoperability with our allies, and what can the Army do to further strengthen U.S. military relations with our allies and partners in the region? I am talking about, in particular, within the Indo-Pacific region.

Secretary WORMUTH. I understand, Senator Hirono. It is very nice to see you in person, and thank you for your well wishes.

A few things in terms of interoperability with our partners. First of all, again, many of the countries in the INDOPACOM AOR are led by chiefs of defense who come from their armies. So one thing that we have that I think helps us build our alliances and partnerships is those army-to-army relationships. They very much want to

train with us, to exercise with us, to learn from us, and in many cases, purchase our various weapons systems. So those are all things that we can build on. Those exercises are part of what helps us with building interoperability.

We are moving, with our Project Convergence campaign of learning, that started last year and was largely Army centric, this year it will be a joint undertaking, but we are building towards bringing together some of our allies and partners from the INDOPACOM AOR to be able to work with us and experiment with us and look at using prototypes. So we also are working to try to bring our allies and partners in on the ground floor of developing these new, joint warfighting concepts.

Senator Hirono. I think the mil-to-mil relationships have always been the area where we have strong alliances, and would you acknowledge also that diplomacy plays a major part in all of this?

Secretary WORMUTH. Absolutely, and frankly, my own view is that to make the kind of progress that we would like to see, particularly in terms of access and being able to have more presence in the region that has to be led by our diplomats. The Department of Defense, the Department of State, the White House, we all need to work together, and frankly, we need to work with our agencies that have economic and trade responsibilities as well. But I think we need to have a whole-of-government approach to really help us get to where we want to be in that region.

Senator HIRONO. I agree. So moving on, on the issue of sexual assault and harassment, Secretary Wormuth and General McConville, for a number of years now senior DOD leaders have briefed us, basically from my seat countless times, on the need to eliminate the scourge of sexual violence in the military. To the credit of the DOD and the military, yes, a number of attempts have been made, but we still are confronted with the scourge, and, in fact, the Fort Hood report that came out at the end of last year described the installation as having, "a permissive environment for sexual assault," where junior enlisted personnel did not trust the chain of command. I think you mentioned that there is a need to increase trust in the military, and it is not just in the sexual assault situation, of course, but in other instances.

So for both of you, do you think moving sexual harassment investigations, for example, outside the immediate chain of command would help to restore trust in the system?

Secretary WORMUTH. Senator Hirono, I had the opportunity to go and visit Fort Hood last week and see first-hand, frankly, a lot of the steps that the Army is taking, at that installation in particular, to try to really get after the command climate issues. I think where we are really going to see results in terms of driving down the prevalence of sexual harassment and sexual assault is through prevention. So I am very interested in seeing things like the redesign of our SHARP program, doing This is My Squad initiative that really tries to bring leaders taking care of our soldiers down to the lowest level.

That said, accountability is an important piece of the issue as well and I think can play a role. I am open-minded to looking at how best to do that. I think increasing the specialization of our folks responsible for prosecuting these kinds of crimes would be

beneficial, and I am open to looking at this, and have been asked to be a part of the conversation with Secretary Austin on this matter.

Senator HIRONO. Mr. Chairman, if I could just do one short follow-up.

Chairman REED. Yes, ma'am.

Senator HIRONO. So I mentioned sexual harassment because right now that is not a separate charge under UCMJ [Uniform code of Military Justice], and I do have a bill to move in that direction. I certainly welcome your support of that, and yes, we want to move toward prevention. But there will be an effort to remove the prosecutorial discretion on investigations and prosecutions out of the chain of command. There will be an effort to do that relating to sexual-related offenses. I mentioned that because that is the direction that I think we need to go.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hirono. Senator Cotton, please.

Senator COTTON. Thank you, Mr. Chairman, and thank you both for your appearance.

Secretary Wormuth, when you were here for your confirmation hearing you agreed with me that the Army University Press should not remove the term "Union Army" from its publications. Have you had a chance to address that issue yet?

Secretary WORMUTH. Senator Cotton, I apologize. I have not had the chance to address that yet, given that I have been here 3 weeks, but as I said to you in my hearing, I will look into that and talk to the folks at Army University Press.

Senator COTTON. Thank you. I understand it has been a short time and you have got a lot of other pressing issues, but as I said then and I will say again, if it was good enough for U.S. Grant, I think it is good enough for our troopers today.

For both Secretary and General McConville I want to speak to you about the nearly decade-long effort to replace the Army Physical Fitness Test with the Army Combat Fitness Test, to test our soldiers on physical fitness that is a bit more applicable to the tasks on the battlefield, and also to make it gender neutral. There are reports of further Combat Fitness Test redesigns and changing standards associated with the test have made for a somewhat confusing story and heated debate. Can you clarify for us the obstacles that are currently facing the Combat Fitness Test, whether it will remain gender neutral and how the Army is seeking to implement the test now?

Secretary WORMUTH. Certainly, Senator, and again, I would ask General McConville to build on my answer. But first of all it is very important that we have our soldiers be physically fit for a demanding environment on the future battlefield, and one of the reasons that the Army has pursued the ACFT [Army Combat Fitness Test] is to try to raise our overall fitness level while reducing injuries. So that was the impetus.

We are continuing to look at how to finalize the design for the ACFT. We are continuing to have gender-neutral standards. We have made some changes, as you know, moving from the leg tuck to making the plank an option. But we are waiting for the results

of a study from RAND that has been required by Congress, and we are not going to make any final decisions about the test until we have the results of that and we can understand how the test is going to both improve our fitness but also potentially what it might do in terms of our ability to recruit specialized skills like cyber and doctors and things of that nature. But why don't I let the Chief build.

Senator COTTON. General?

General MCCONVILLE. I think the science behind the Army Combat Fitness Test is really about reducing injuries. As we have taken a look at the Army Physical Fitness Test over the—in fact, I was there when it was implemented, I hate to say, it was 40 years ago, and it is time to transform that test, to take advantage of the capabilities we have today. As we take a look at it, as the Secretary said, we are examining the impact on the force. I took it last week, for the record. I think it is a good test. What we want to do is move forward in implementation, based on the study. I think it is going to have a more fit force, which is something that we need as we move in the future.

Senator COTTON. Do you want to share you score, for the record?

General MCCONVILLE. Four hundred seventy-eight, for the record.

Senator COTTON. That is good. I am sure all your joes around are going to try to beat that now.

General, are you committed, as well, to maintaining gender neutrality on the test?

General MCCONVILLE. I am.

Senator COTTON. Is there any consideration to pegging scores towards branch or MOS [military occupational specialty]?

General MCCONVILLE. Well, I think the future, at least if I could make a recommendation in the future, is as we move to more of a talent management model in the Army, if you are an airborne ranger, which is a fitness type organization, if you are in the 101st Airborne Division or the 82nd, I would say from talent management you want people with a certain level of physical fitness. If you are doing something else, you are a neurosurgeon, you might be more concerned with that person that can operate at a Level VI level than, you know, lead the battalion in PT.

So I think what we want to get to—at least I do—is move away from an Industrial Age personnel management system to a 21st century talent management system where we recruit people, we select people, and we, quite frankly, promote people based on the knowledge, skills, behaviors that they have within their specialized area. But we still want a certain level of fitness in the Army.

Senator COTTON. Yeah. I think the Army needs to consider that. You know, loading a round into a tank gun or a Howitzer has to be done, whether you are a man or a woman.

General MCCONVILLE. That is right.

Senator COTTON. It requires a certain level of physical fitness. But that is a different level of physical fitness than it takes to be a flight surgeon or to be a cybersecurity specialist.

One last question for you, General. In the last decade, I think maybe when you were Vice Chief, the Army stood up the Security Force Assistance Brigades.

General MCCONVILLE. Yes.

Senator COTTON. They were primarily active in Afghanistan. Now that we will be out of Afghanistan in a few weeks and our national security strategy has postured towards competition against near-peer rivals like China and Russia, what do you see as the future of those SFABs [Security Force Assistance Brigades], and what role are they going to play for the Army in the future?

General MCCONVILLE. They are in tremendous demand. You know, the question was what are you doing in Indo-Pacific. The 5th Security Force Assistance Brigade is active. They are employed. They are building partner and allies capacity and capability, and quite frankly, they are one of the hottest items that are out in each combatant commanders, providing great options to professionalizing the force within these countries. As we talked about, we are getting our strength, not only from having a strong military but through our allies and partners, and they are instrumental in doing that, and they are building tremendous relationships for us right now, as we speak.

So each of the Security Force Assistance Brigades is oriented to a combatant commander and they are using them very well.

Senator COTTON. Thank you, General. Thank you, Secretary.

Chairman REED. Thank you, Senator Cotton. Senator Kelly, if you are ready, you could be recognized.

Senator KELLY. Thank you, Mr. Chairman, and I appreciate you having this hearing today. Thank you to Secretary Wormuth and General McConville.

Secretary Wormuth, Arizona is home to some of the Army's most capable test ranges, like Fort Huachuca's Electronic Proving Ground and the Yuma Proving Ground. Both installations play an important role in the mission of our Army Futures Command and also an important role for DEVCOM [Development Command].

At Yuma alone, 30 percent of the workload is dedicated to DEVCOM developmental testing. Yuma is also the host of Project Convergence, a critical modernization project designed to further integrate the Army into the Joint Force and test the effectiveness of concepts and equipment that will prepare us for future conflicts.

The defense contractor workforce at these ranges works side-by-side with uniformed and civilian personnel to execute the mission. Now I am concerned by reductions in funding for these range support functions. Electronic Proving Grounds at Fort Huachuca and Yuma Proving Ground is seeing some of these funding reductions.

These are premier testing sites for the advanced systems that will modernize America's Army. It is critical that we invest not only in programs but in range infrastructure—it is often the thing that is left out—but also investing in the workforce that allows us to make leaps in technology, providing our soldiers with the best equipment to meet the challenges of tomorrow.

Secretary Wormuth, what would be the risks involved in decreasing funding for test range support, including for the government and contractor workforce, at a time when modernization is a top priority of the Army?

Secretary WORMUTH. Thank you, Senator Kelly. As you mentioned, Arizona, and Yuma, is going to be the host for Project Con-

vergence. Has been. I am excited to go out there this fall and see the next Project Convergence, which we are scaling up.

To your question, given the budget that the Army has, we have made some difficult choices. But we have done everything we can to protect our modernization programs and the testing facilities and ranges that we believe are needed to support those programs, as well as the contractors to support that kind of testing. That said, I have not yet been able to come out to Yuma and Fort Huachuca, and would welcome doing that in the future and talking with you about your concerns, because again, it is very important that we preserve adequate ranges to do the kind of testing that we need for the future. So this is something I would be happy to work with you on and have a dialogue about.

Senator KELLY. I appreciate that. I would love to visit with you at Fort Huachuca, at Yuma Proving Ground. If we are going to stay ahead of our adversaries, we are going to do it by out-innovating them, and to innovating our near-peer adversaries we need to test the equipment. So we need ranges and test centers that can support those functions.

General, for the past 20 years the Army has focused efforts and resources on conflicts in the Middle East. At the same time, our adversaries were focused on outpacing us through military modernization efforts. Modernization is critical to staying ahead of our adversaries, and when done effectively can function as a deterrent. We know that future wars will look different than current conflicts, and the Army will need to use resources and equipment efficiently across a range of domains to meet tomorrow's challenges.

Knowing the important role that basic research plays, are you concerned about the decreases to Army science and technology funding, and is there a plan to reinvest in this area for future years?

General MCCONVILLE. As we take a look at the budget we are always concerned about making cuts, and what the Secretary and myself have to do is we have to look across the portfolio and determine what are the must-must-dos. For science and technology, we have reoriented our resources so they are focused on our top priorities. I think it is like 71 or 72 percent of our research and development, our science and technology dollars are focused on delivering the 31+4 top systems. Could we use more money in those other areas? Absolutely. But the Secretary and myself have got to make tough decisions, and those tough decisions are based on the priorities we need to be effective in the future.

Senator KELLY. Thank you, General, and thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Kelly. Let me now recognize Senator Blackburn.

Senator BLACKBURN. Thank you, Mr. Chairman. Madam Secretary, just a quick question for you. Kingsport, Tennessee, has the Holston Ammunition facility, and it is a main supplier of explosive materials to the Department of Defense, and Holston is on the Army's unfunded priorities list, along with similar facilities there in Virginia, Missouri, Pennsylvania, and Iowa. Total request for modernization is $40 million. And these are basically World War II-era facilities, and we need that money for modernization of these

facilities. So I would call this to your attention, and I would ask that you commit to me that you will work on this, to modernize these facilities.

Secretary WORMUTH. Thank you, Senator Blackburn. It is nice to see you in person, first of all.

As General McConville developed the unfunded requirements list, those are obviously things that we would like to have if we had additional funding, and we have tried to give you a sense of how we would prioritize them. As the Chief just said, with the resources we have had we have had to make difficult choices, but certainly going forward I would commit to you to look into the ammunition facilities there and try for myself, develop a better idea of how it fits in with other places in the country that provide similar capabilities to us.

Senator BLACKBURN. I think it is appropriate that we review that but that we make certain we have modernized these facilities, because they are a part of our supply chain, if you will.

General, good to see you. There are a lot of people from Fort Campbell that fondly remember your and Ms. McConville's time on post, and so we thank you for that.

O&M [Operations and Maintenance] cuts and our concerns that are around these, given the aviation mishaps that have occurred, not only with the Guard but also with the 160th SOAR [Special Operations Aviation Regiment], and I know that you are very familiar with these incidences. So talk to me a little bit about how we are going to get in behind this equipment. I know that you have heard, I have heard it from some of our men and women, where they get the order to make it work when they are doing maintenance and repair or find a way to get to yes. We want to be smart. Sometimes shortcuts do not serve us well, and our men and women in uniform deserve to know that when they get into that equipment that that equipment is going to allow them to fulfill their mission.

General MCCONVILLE. First of all, Senator, thank you, and I have got a special place in heart for Fort Campbell, and I have two kids serving there, and it is very special. You make a great point on Army aviation. Pilots have to have the flying hours to train. They have to have that, and our maintainers have to have the time to maintain those aircraft, and they have to have the resources. As we pressurize the budget, as we push on these type things, we start—especially with trends, as the Secretary talked about. I worry about trends, because trends start moving you in a certain direction, and you slowly start taking away things, just a few less hours, a few more this, a few more those type things, and then you find out you have some very serious concerns.

So I am concerned about that. I am committed to making sure that our units have the flying hours that they need to be proficient, and really more than proficient, that they can do their job in combat, and I am committed to making sure that they are getting the parts and they have the expertise to maintain those aircraft.

Senator BLACKBURN. Well, and as you know, I went to bat more than once to get dollars for those flying hours and to make certain that those were there.

I have got additional questions for each of you, but my time is going to be running out. I will submit these to writing. General, I

am going to come to you with a question on end strength as it relates to this budget. I am very concerned about the impact that that is having on our military personnel and their families, the uncertainty that that has inserted into their lives.

So I thank each of you for your time and your service, and Mr. Chairman, thank you.

Chairman REED. Thank you, Senator Blackburn. Let me now recognize Senator Blumenthal, please.

Senator BLUMENTHAL. Thank you, Mr. Chairman. Thank you both for being here this morning. Thank you for your service.

I do not know whether you have seen the report by the Associated Press on weapons belonging to all of the military services that have been lost or stolen, and apparently have been unaccounted for. I hope you have. I commend it to you. This report is absolutely blood-curdling. The idea that pistols, assault weapons, grenade launchers are missing from armories of the United States military because they have been lost or stolen, without any apparent account, without any reporting to Congress or to the FBI [Federal Bureau of Investigation] or to the agency, Alcohol, Tobacco, and Firearms, that may have jurisdiction as well, is just incredibly alarming and astonishing. I would like to get from both of you what you know about it and your commitment that you will, in fact, investigate these reports.

Secretary WORMUTH. Senator, I did see that report in the press, and certainly we take this situation very, very seriously. You know, we train our soldiers to maintain accountability of their weapons. That is a basic skill and responsibility that we expect from our soldiers. My understanding is that the cases of weapons from any branch of the services being unaccounted for and getting into the hands of civilians is likely to be a small number, but particularly given these reports I commit to you that this is something that we will look into and certainly make sure we have situational awareness of that situation in the Army.

Senator BLUMENTHAL. Well, this is a public report, and 1,900 firearms is not exactly a small number. Apparently, a substantial number are used in crimes, have been recovered at crime scenes, which is really mind-boggling and blood-curdling. I would like to know whether you will commit, as the Pentagon used to do, sharing annual updates about lost or stolen firearms with Congress, whether you will resume that regular reporting?

Secretary WORMUTH. Senator, again, we do take these reports very seriously, and I absolutely commit to you to look into this and share what we know, and get back to you on that.

Senator BLUMENTHAL. I do not mean to interrupt, and I apologize, but will you commit to reporting to Congress, as was the practice?

Secretary WORMUTH. Senator, I think what I can commit to is we can share with you everything we in the Army understand about our weapons.

Senator BLUMENTHAL. Will you support a reporting requirements, generally, to the Department of Defense?

Secretary WORMUTH. I think we would be open to a reporting requirement.

Senator BLUMENTHAL. This report says that the Army and the Air Force could not answer basic questions about missing weapons. It says also, "The Army sought to suppress information on missing weapons and gave misleading numbers that contradict internal memos." Will you report back to us about that claim?

Secretary WORMUTH. Senator, I would be happy to look into how we have handled this issue.

Senator BLUMENTHAL. Do you know whether it is true?

Secretary WORMUTH. I do not, Senator. I do now know what our past practice, going back years, has been on this matter.

Senator BLUMENTHAL. The report says, further, the AP [Associated Press] began asking the Army for details on missing weapons in 2011, and filed a formal request a year later for records of guns listed as missing, lost, stolen, or recovered. Apparently the reports quote an official as saying, "You are dealing with millions of weapons, but we are supposed to have 100 percent recon, right? We are not allowed a discrepancy on that, but there is so much room for discrepancy," which indicates to me that there is systemic failure at every level, a failure to keep track of the weapons, a failure to report up the chain, a failure to report to Congress, a failure to report to law enforcement. Do you disagree?

Secretary WORMUTH. Senator, I am not, again, familiar with the details of the story so I do not want to speculate. You know, I do not want to characterize how the Army has handled it to date without having the facts. But I would certainly commit to collecting the facts and continuing to talk with you about this important issue.

Senator BLUMENTHAL. Thank you. Well, I really appreciate it, and I know that you are new to the job. Welcome to your first Committee hearing. Sorry to hit you with this topic, but I think you will agree with me that it is profoundly important that the military keep track of stolen or missing weapons. I hope we can agree on that.

Secretary WORMUTH. Of course.

Senator BLUMENTHAL. Thank you. Thanks, Mr. Chairman.

Chairman REED. Thank you, Senator Blumenthal. Senator Hawley, please.

Senator HAWLEY. Thank you, Mr. Chairman, and Madam Secretary, General McConville, thank you for being here. Thank you for your service.

Let me just start with one of our priorities in Missouri, which is to ensure that all of our servicemembers have the best possible quality of life. One of the challenges that we are facing in Missouri, at Fort Leonard Wood, is to make sure that the homes that were built there in the 1960s that are overdue for replacement get replaced in a timely fashion, and that we are able to provide quality housing. So could you just give us an update on what the Army is doing to facilitate replacements for these homes? Madam Secretary, we will start with you. General, you can add as you see fit.

Secretary WORMUTH. Certainly, Senator. Thank you. General McConville probably can speak to the details at Fort Leonard Wood better than I. But as you know, we have reorganized how we are dealing with privatized housing, to basically make a four-star general responsible, and we meet now weekly to go over the family housing at each of our major installations. We now have 37 out of

44 installations that have privatized housing have fully implemented the Tenant Bill of Rights. We expect to have the other 7 compliant with the Tenant Bill of Rights by the end of July. So this is something that we are working on very, very hard.

I would ask General McConville to speak directly to the Fort Leonard Wood installation.

General MCCONVILLE. Yeah, just from a priority standpoint, the reason we came out with people is our number one priority was that kind of drives for the resources, and then within the people portfolio, housing in the number one priority. A couple of things that we have been working, as the Secretary talked about, is we have privatized housing. We are putting billions of dollars back into that. Probably about 25 percent of our housing right now needs to be fixed. Some of that is privatized, and we are working with the privatized housing, and they have raised money to put additional money to improve that housing.

The Army housing that the Army owns, which is about 10 to 15 percent—we had historical housing. It was not historical housing. It was old housing, and to me "old" is not "historical." You know, you have a 100-year-old house that needs to be fixed, and for a while there we were trying to fix it at historical rates, put old windows back that looked like old windows, those type of things. So we have got an exception to that so we are putting more money into that. We are also putting additional funds into housing to get after that, because we want quality housing.

I will need to come back to you on precisely what we are doing there, and we will come back to you on that.

Senator HAWLEY. Great. Thank you very much. Thanks to both of you. Thank you, General. We will follow up with you on that.

Let's shift to our pacing theater, if we could. General, you released the Chief of Staff of the Army Paper Number 1 this past March. One of the things the paper said that caught my attention, and I am quoting you here, "Our adversaries will attempt to achieve their strategic goals without fighting or to seize their objectives quickly as a fait accompli." I want to commend you for highlighting that scenario in the paper.

Along those lines, give us a sense of how you see the Army's long-range precision fires and their enablers being able to help deter or, if we have to, defeat a Chinese fait accompli in Taiwan.

General MCCONVILLE. Yeah, I think when we talk about long-range precision fires, and when you think about the threats that we could face, as far as deterrence, many of our strategic competitors have set up what we call an anti-access air denial capability within integrated air and missile defense capabilities. So you need something that can penetrate that and suppress that. By having land-based, long-range fires you start to provide options to the COCOM [combatant command] commander to do that. Part of our portfolio and the long-range precision fires is also having a land-based, anti-ship capability, so then again, you have the ability to hold competitive ships at risk. They all come together to give that combatant commander multiple options, and really to present multiple dilemmas to those who may be wishing us harm, and then by doing that and having those capabilities 24/7, you can deter certain types of behavior from a strength standpoint.

Senator HAWLEY. Let me just ask you, as a follow-up to that, TRADOC's [Training and Doctrine Command] December 2018 publication, which was called "The Army Multi-Domain Operations in 2028," stated that the Army must demonstrate the ability to immediately deny a fait accompli in order to deter an adversary like China. You still agree with that, I assume?

General MCCONVILLE. I do.

Senator HAWLEY. Along those same lines, Madam Secretary, when you and I visited last month you highlighted—and I thought this was really good—one of the things you said was that China would like to pull off a fait accompli because it would be much harder for us to dislodge them from Taiwan than to stop them from getting to Taiwan in the first place. Can you just elaborate on that? I thought that was such a crystal-clear explanation of the dangers of the fait accompli scenario. So can you just elaborate on that a little bit?

Secretary WORMUTH. Yes, Senator. Happy to do that. You know, essentially given the anti-access area denial capabilities that China now possesses, if they are able to achieve a lodgment on Taiwan, we will not have the kind of air superiority, for example, that we have had in things like the Gulf War in the last 20 years. It will be much harder to essentially eject Chinese forces from Taiwan once they land there than it would be to stop them coming across the straits to begin with.

Now I am not saying it is impossible to dislodge them, but it will be a tougher fight. So my own view is we want to develop the kinds of capabilities that we are pursuing in the Army, along with the rest of the Joint Force, to basically present a sufficiently strong deterrent force to make the Chinese continue to think twice, year after year, about whether they want to actually undertake that amphibious landing.

Senator HAWLEY. Very good. My time has expired. General, I wanted to ask you about the PACOM's [Pacific Command] 1251 report and what that means for the Army's posture in that region, so I will give that to you as a question for the record, and I will follow up with you about the Fort Leonard Wood.

Thank you both very much. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hawley. Now let me now recognize, via Webex, Senator Gillibrand.

Senator GILLIBRAND. Thank you, Mr. Chairman. Secretary Wormuth, you and I have talked about the scourge of sexual violence in the military at length, and you understand that for the last 8 years this Committee has been trying to have a vote on a bright line to take out all serious crimes from the chain of command, to create a more professional system, to create an unbiased system, to create a system where our trained military prosecutors can make the first judgment about whether a case should go to trial.

As you know, about 3 percent of commanders have the right to make this decision about whether a case should go to court martial. So if the prosecutor decides a case should not go forward it will go back to that 3 percent of commanders, who then will have the opportunity to do a summary, a court martial, or a special court mar-

tial, or charge a related or a lesser crime, and get NJP [non-judicial punishment].

So given this, I would like your assessment of whether this is a recommendation that you will support, number one. I know in your written testimony you intend to take all 70 recommendations from the Fort Hood Independent Review Commission, which, as you know, suggests taking sexual assault out of the chain of command and creating an independent SHARP program. So you have already said you support that.

What is your assessment of a bright line on all serious crimes, and as part of your analysis I would like you to consider the data that has been developed by the military and the report by Protect Our Defenders that showed that black and brown servicemembers are up to 2.5 times more likely to be punished for serious crimes than their white counterparts? So I would like you to talk a little bit about how you see reforming the military justice system so that it is fair, unbiased, and guarantees civil rights and civil liberties for all servicemembers.

Secretary WORMUTH. Thank you, Senator Gillibrand, and thank you, first of all, for your leadership on this issue. You have been working on this issue for years. It is a problem that we all want to solve, that I know all senior leaders and all leaders in the Army want to solve, so I appreciate everything you have done.

A few thoughts. As I said earlier with Senator Hirono, I do think that focusing on prevention, and doing more on the prevention side, is, I think, where we will really see more success in reducing the prevalence of sexual harassment and sexual assault in our military. But accountability is important. I think——

Senator GILLIBRAND. Secretary Wormuth, can you speak to why you think prevention is the panacea here? Because we have passed over a dozen laws to implement prevention measure, and the GAO [Government Accountability Office] reviewed all the laws we have passed on prevention and what they found was that more than 30 recommendations and prior works, specifically related to DOD's effort to prevent sexual assault and address the needs of certain populations in the sexual assault prevention and response efforts. What they found that a lot of the recommendations and laws that we passed just have not been implemented.

So what change do you imagine would have to happen for the command and the DOD to take the prevention measures seriously, given that we have given you 8 years of prevention measures and they are not being implemented?

Secretary WORMUTH. Senator, first, I do not think prevention is a panacea. I think we have to pursue this problem across a spectrum, from prevention to accountability. So I want to be clear on that.

I think really what we have to focus on is pushing responsibility for a positive command climate, caring for our soldiers down to the lowest level possible, and that is what we are trying to do through the This Is My Squad initiative, through the redesign of our SHARP program, and also through, frankly, selecting our leaders, looking more closely at their previous command climate performance. So making sure the people we put in charge are people who have been able to create positive command climates. I think all of

that will be helpful, and that is something we are going to have to work hard on, and work hard on year after year after year, not just sort of when there is a crisis and then we become complacent.

Senator GILLIBRAND. But do you not think that actually prosecuting sexual assailants who are predators, who are often recidivists, and putting them in jail would also prevent crimes, since we have many examples of sexual assaulters who were not prosecuted in the first instance and went on to not only assault others, including children as one of the most recent examples. Don't you think it would be far better to actually treat these cases appropriately and put sexual predators in jail?

Secretary WORMUTH. We do absolutely have to hold perpetrators and predators accountable, and it is for that reason that one of the things I think makes a lot of sense is increasing the specialization of the individuals in the Army and in the military writ large, who prosecute these cases. You know, I think one of the recommendations that we have seen is to basically help both our investigators and our prosecutors build more specialization in special victims crimes, and given the complexity and sensitive nature of those kinds of crimes, that is something that I am open-minded to and think would be beneficial for us.

Senator GILLIBRAND. Will you review, for this Committee, the issues of racial disparity and the recommendations that by giving the decision-making to trained prosecutors you can also eliminate bias with regard to racism?

Secretary WORMUTH. Senator, what I have been focused on in my time in the job so far has been specifically the sexual harassment and sexual assault set of crimes. So that is where I have been focused. It is clear that there are disparities in our justice system for people of color. I have not been able to look into that in depth, but my initial assessment of this issue, or I should say my initial sense of this issue is that some of those disparities may be happening more on the investigation side of the ledger rather than on the prosecution side. But this is something I would want to study further.

Senator GILLIBRAND. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Gillibrand. Now let me now recognize Senator Tuberville.

Senator TUBERVILLE. Thank you, Mr. Chairman. Thank you both for being here today. General, in your family service, you have got all of your kids in the military. That's awesome.

I am a people person. You had your budget cut, and we need things to fight with. But the number one thing we need is people. With the cuts, how do we address pay and pay raises for our troops? With this inflation rising every day 5 percent, it looks like there is no stop to it. Number one, how do we recruit, and how do we pay our troops with the cuts that we are having? Both of you.

Secretary WORMUTH. Senator Tuberville, good to see you. Why don't I start. I would say on the recruiting side, it is a tough environment. As you said, we are competing against all sorts of companies that are starting to increase their wages and so on. We are trying to bring in 61,000 soldiers this year. We think we are on track for that. But we are sending out a large number of recruiters to really showcase all of the things that the Army can offer to peo-

ple all around the country who want to join. As part of that, in the President's Budget 2022 we have a 2.7 percent pay increase for our soldiers, and that is a pretty good pay increase. I think we looked carefully at that issue. We also have, as you know, our Tuition Assistance Program, which is very popular with soldiers.

So we really try to use a range of the things that we do to be able to bring in the quality best and brightest that we need in the Army every year, to keep us healthy and at the size that we need.

General, do you want to build on that?

General MCCONVILLE. Yeah, thank you, and, I am very thankful that our soldiers and our civilians got a pay raise this year, and we are very appreciative of that, and we think that is extremely important. But as the Secretary said, we are in a war for talent, with young men and women. The advantage we have in the Army, and we have to continue to work this, is they want purpose in their life and they want to belong to a team, and we can do both for them. Once we get them in we have to compete for their talents and make sure that we are putting them in a place where we are taking full advantage of their talents. We are actually being fairly successful at that.

We wake up every day making sure we can maintain the all-volunteer force. We want a force where there is no harmful behaviors, so parents are looking at us, and hey, this is a good place that I want to send my kids, and this is a great place to get ahead, for working class people. They can go to school and get an education, they get discipline, and all those wonderful things. So that is what we are doing, Senator.

Senator TUBERVILLE. Thank you. Thank you very much. Speaking of recruiting, Secretary, you probably did not have anything to do with this, but last month the Army released an animated marketing campaign titled "The Calling"—I am sure you are familiar with +that—which was aimed at reaching the Generation Z audience with its storylines. This campaign cost approximately $4 million to produce. The campaign received so many negative comments, the Army took the comments section down.

The Army should seek to recruit the best and brightest to protect our country, regardless of their background, because it is the generals' the captains' and the lieutenants' jobs, once they get there, to build them into a fighting force. My staff has asked for performance metrics on the campaign. Can I get your commitment that we will be given a thorough briefing on quantitative measures?

Secretary WORMUTH. Senator, we would be happy to brief you on the campaign, and what we know about how well it has performed. I would also just like to emphasize that as the general said, we are in a war for talent. We are trying to reach young people around America, all across the country, from all sorts of different backgrounds. We are trying to recruit Generation Z and those younger than them, and the days of Super Bowl ads maybe have been replaced by YouTube and other things.

So part of what we are doing is trying to also figure out which innovative recruiting techniques is most successful and resonates with all sorts of folks around the country. But I would be happy to come back and brief you on the campaign, at your convenience.

Senator TUBERVILLE. Thank you. It is important that we get the best, because they do not make a lot, and as the general said here, we are fighting big tech, you are fighting people that are going to be paying a lot more money. I have got buddies in the Army, been in there for a long time, and they struggle, them and their families, as a lot of people across this country struggle, especially with the times that we are in right now. We have just got to take care of our people first, because that is our life blood. We were talking to the Selective Service not too long ago. We discussed this. Thirty-five million people are eligible for the draft and only 450,000 eligible to serve in our military. That is scary. That is really scary. So we have got to do everything possible to sell the point that the military is somewhere that they can come, get a great education, get a great life, raise their families, and be great Americans.

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

Chairman REED. Thank you, Senator Tuberville. Let me now recognize Senator King, please.

Senator KING. Madam Secretary, my first piece of advice is don't talk about Super Bowl ads not working to a former football coach.

Secretary WORMUTH. Good point.

Senator KING. I want to welcome you to the Committee and congratulate you on your nomination and confirmation.

Page 4 of the charts that you gave us, I am a little confused, and I want to get to the terminology to really get a fix on how this budget really works. OCO [Overseas Contingency Operations] seems to have disappeared. OCO was a significant part of the budget over the last 4 or 5 years. It is not in your chart. There is a little dotted line, but you talk about direct war costs and enduring costs of about $18 billion. Is that what we used to call OCO? General, you are nodding.

Secretary WORMUTH. Essentially, yes, Senator King. I think there has been a debate, as you undoubtedly know, for years, about trying to ensure we were providing sufficient transparency into the budget.

Senator KING. Listen, I agree. I have always been skeptical of OCO as a kind of slush up and down. So what you are really proposing is a higher base budget with less OCO, and I presume part of it, OCO last year was about $24 billion, under your formulation it is about—what we are thinking of as OCO, direct war and enduring costs, $18 billion. Does that reflect, in some measure, the reduction of costs in Afghanistan, for example?

Secretary WORMUTH. There is a small reduction in costs associated with our retrograde out of Afghanistan, Senator, but I do not believe it is a large one.

Senator KING. Okay. Hopefully we are going to have a little more transparent budget in the future, where OCO, the expenditures on war costs are part of the budget. Is that correct?

Secretary WORMUTH. That is the goal, yes.

Senator KING. Okay. Thank you. General McConville, you used the word "convergence" in one of the answers to your question, in terms of joint operability. One of your colleagues the other day said he had to pry data out of one of the other service branches. We have got joint operations. That was Goldwater-Nichols. My sense is, however, we need more in the way of joint compatibility of soft-

ware and capability acquisition. Is that a sensible thing to be talking about?

General MCCONVILLE. Absolutely, Senator, and one of the things that we have done, and I have done it in conjunction with the other service chiefs, is we have stood up what we call the Joint Systems Integration Lab at Aberdeen. Because the future of convergence is really the ability to pass data from system to system, and to do it in a contested environment. If you want to pass an F–35 to some type of weapons system on the ground or some type of sensor, what that allows us to do is go up there, figure out how to move that data, test it, and then we go out into Yuma and do Project Convergence in the dirt. You have already got a way to do that.

Senator KING. But this is sort of the 21st century version of the phones not talking to each other in Grenada, where we could not communicate.

General MCCONVILLE. Well, I think what we are doing, Senator, is making sure that we can pass data between all the different types of systems we have in the joint system. That is what the intent is, and then next year we go to make sure we can do it with our allies and partners.

Senator KING. I look forward to working with you on that, because I think that is a very important point going forward.

Missile defense and deterrence. Iron Dome appears to be a very effective system as it has been operating in Israel. It has saved a lot of lives. We were involved in the development of Iron Dome. Are we taking advantage of that capability, and is that something——

General MCCONVILLE. Yes, Senator. As I think you know, we have two batteries right now. We are going through the process of training our soldiers on that. That is the interim program, and what we are working with them and some others is how does that fit into our integrated air and missile defense system. We want to be able to pass data from all the different systems. The future is you have multiple sensors, and you have multiple shooters, and you use an integrated battle command system for integrated air and missile defense. It will take the information from the different sensors, it will pick the right shooter, and then you get the most efficient capability when it comes to protecting forces against air threats.

Senator KING. So we are back to convergence of data and software.

General MCCONVILLE. Yes, we are, Senator.

Senator KING. My final question is, my concern is defense against hypersonics. That strikes me as a significant strategic challenge for this country. Is this something that is in your area, with the Army, or is this again a joint enterprise, because certainly the Navy has to worry about hypersonics?

General MCCONVILLE. Well, we are all concerned about that, and I think we could take that in a different form with the Missile Defense Agency and talk through, probably in another forum, where we are on that, Senator.

Senator KING. Fine. Thank you. Thank you both. Thank you for your service. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator King, and now let me now recognize, via Webex, Senator Rosen.

Senator ROSEN. Well, thank you, Chairman Reed, of course Ranking Member Inhofe. I really appreciate you holding this hearing, and I would love to thank the witnesses for testifying today and for their service.

I would like to speak a little bit about Hawthorne Army Depot which is located in Nevada. So Secretary Wormuth, Nevada's Hawthorne Army Depot, it is the world's largest—the world's largest—ammunition depot and demilitarization facility. The depot stores and demilitarizes munitions, it ensures munitions readiness for DOD, amongst other things. It also supports the Services by hosting military training. It has very unique terrain. All throughout Nevada we have, with the Air Force Nevada Test and Training Range and, of course, up in northern Nevada Fallon Naval Air Station. So we have unique Afghanistan-like terrain throughout Nevada.

In 2005, there were attempts to close Hawthorne, but it is mission critical, and again, it is the world's largest ammunition depot. I am grateful that its closure did not come to fruition. So given Hawthorne's contributions to our national security, will you commit to working with me to ensure that the depot continues its important work serving our warfighters?

Secretary WORMUTH. Senator, I would be happy to work with you on making sure that we continue to keep the capabilities at Hawthorne that we need. It sounds like they offer a variety of capabilities to our Army, and I would look forward to gaining a more in-depth understanding of Hawthorne, and again, making sure that it fits into future Army requirements.

Senator ROSEN. Thank you. I would like to move on to a little bit of tactical cybersecurity, because, of course, Senator King brought that up. We are going to have convergence of data, of software, hardware, software, firmware, all of it. Multiple points of vulnerability. Every time we add something on we can create a new stress point or a new access point.

So, General McConville, in recent years Army Cyber Command, you have been fielding units to enhance our ground commanders' tactical cyber capabilities, such as intelligence, information, cyber, electronic warfare, and space detachment and the 915th Cyber Warfare Battalion. So, General McConville, what are the Army's plans for the growth of this mission, and in which theaters do you see the Army employing these cyber units? Is it something that you envision for the Indo-Pacific with our NATO [North Atlantic Treaty Organization] allies, or possibly in Iraq, Syria, or Afghanistan? I am just curious how you see it expanding.

General MCCONVILLE. Well, Senator, right now, when you talk about—we have to use an acronym, but it is I2CEWS which is intelligence, information, cyber, electronic warfare, and space. We are standing up the new multi-domain task force that has that capability at Joint Base Lewis-McChord with the focus on the Indo-Pacific. The second multi-domain task force is being stood up inside of Europe, and we are looking at third for the Pacific, and we are in the process of developing that also.

We see this capability as extremely important for the future. We see, in the competition space, in the crisis space, the notion that we are going to have to have these type of capabilities, and we are

in the processing of standing those organizations up and bringing them to fruition.

Senator ROSEN. Well, I would like to build on that, because how do you envision retaining these high-skilled cyber soldiers when NCOs [Non-Commissioned Officer], warrants, and even officers can find more lucrative and more balance work-life opportunities in cybersecurity jobs in the private sector? So you not only have to grow up your staff, train them, retrain them, and upskill them—there is always new technology, obviously—but how are you going to keep the people you have?

General MCCONVILLE. Well, I think that is a great question. With some of the people that are willing to stay in the Army, sometimes they surprise me. I was just down at the software factory at Austin, Texas, and we just stood this up because we are going to need people with these types of capabilities. There is a specialist, an E–4 down there, that, quite frankly, was a medic in our Army, and when we put out a call for coders he answered the call and he is probably one of the best in the Army, and the other people in that organization that have master's and Ph.D.'s recognize him as one of the very, very best we have.

So we have got to have a talent management path for him and for others like him that they may become warrant officers or they may become incentivized, based on their level of experience. What we find is, if we can give them a good wage, and have them doing what they want to do, they will stay in the Army and they really like the mission that they have. Even though they could go outside and probably make a little more money, they really appreciate the mission. That is the feedback I get from the cyber operators that we have within Cyber Command.

Senator ROSEN. Well, thank you. I hope that we can help you. Senator Blackburn and I introduced a Civilian Cybersecurity Reserve Act to help you with a Civilian Cyber Reserve Corps, and so I look forward to working with you on that soon. Thank you.

General MCCONVILLE. Thank you, Senator.

Chairman REED. Thank you, Senator Rosen. Senator Sullivan, please.

Senator SULLIVAN. Thank you, Mr. Chairman, and I appreciate the witnesses being here. Thanks for your service.

Last week I shared this chart with Secretary Austin and General Milley on the prioritization of the Biden administration with regard to our military, and asked them the question, how do you tell our troops that you are prioritized when you clearly are not? If you can see this—and I will make sure you have a copy for the record—almost every Federal agency in the U.S. Government is getting double-digit increases with inflation, which is now, unfortunately, creeping up to 5 percent. The U.S. military budget, homeland security budget is actually getting decreased. I find it completely unacceptable.

[The information referred to follows:]



I asked the two leaders of the Pentagon, how do you tell the troops that you are prioritizing our military? They tried to answer. It was a tough question, because I am sure that they probably did not like the budget that they had to come to the Hill and defend.

Madam Secretary and General, digging deeper, the Army—I mean, you guys are getting gutted. Let's call it like it is. Madam Secretary, in your confirmation hearing you told this Committee

you do not want the Army to be the bill-payer for everybody else. You are the bill-payer right now, 4 percent cuts without inflation, with inflation you are almost double-digit numbers. This is like 2015, when the Obama-Biden administration was trying to cut 40,000 troops from the U.S. Army, Active Duty. They did it.

How do you explain this to your forces? This is tough on you. I know you did not like this. I know you did not like being the bill-payer, but you are. How are you telling your troops right now that the U.S. Army is prioritized, and why do you think you are taking it on the chin, in terms of your budget? Madam Secretary, I will start with you.

Secretary WORMUTH. Thank you, Senator Sullivan. I think what I tell our soldiers when I talk with them is that I am confident that at the budget we have we are able to——

Senator SULLIVAN. Is this the budget you wanted?

Secretary WORMUTH. Certainly, I think——

Senator SULLIVAN. Almost 10 percent cut in the Army, with inflation.

Secretary WORMUTH.—I would certainly welcome additional funds. Having seen, for example, you know, barracks at Fort Hood, I would absolutely welcome additional funds.

Senator SULLIVAN. General, is this the Army you advocated for? Sorry to interrupt.

General MCCONVILLE. Well, Senator, I did——

Senator SULLIVAN. This is a huge issue. It is not getting nearly enough attention.

General MCCONVILLE. Yeah.

Senator SULLIVAN. The Biden administration is blowing out the Federal Government, $6 trillion in spending. Okay? But with regard to the U.S. Army they are saying, "Sorry, guys, ladies. You are getting nothing." So this is a real problem. General?

General MCCONVILLE. No, I just—I said I laid out our requirements. We have our budget and we have our unfunded requirements that I sent a letter to this Committee and all the other committees that lay out, if we can get additional money that is where we want to put it, and we would like to get that additional money.

Senator SULLIVAN. Well, I am going to advocate strongly for additional money for the U.S. Army. I think this is dangerous, and I think it is clear that the Biden administration does not prioritize the military, but it really does not prioritize the Army.

Let me ask, you know, a lot of your testimony—I have been watching it all morning—talks about tough choices. I agree with you, you have tough choices. General, you have done a phenomenal job, your leadership, on addressing what is a huge challenge with the U.S. Army in Alaska. In the last 5 years we have had 32 suicides. You know, we have only had 41—and every death is horrible—combat deaths in Afghanistan in the same time frame. I just want to get your commitment that when you make tough choices, the work you are doing on addressing suicide, in one of the most important places in the country, my state, is not going to be one of these tough choices that you leave on the cutting room floor, because the Biden administration will not fund the damn Army. Can I get your commitment on that? Lives are at stake.

General MCCONVILLE. Absolutely. It is about people first, Senator. You have my full commitment on that.

Senator SULLIVAN. Madam Secretary?

Secretary WORMUTH. Yes. Yes, you have my commitment as well.

Senator SULLIVAN. Let me finally ask, can I just get a quick update? I know, Madam Secretary, you committed to meet, you and General McConville, to brief me on the Arctic plan from the Army. We are getting mixed messages. Secretary of Defense, in his confirmation hearing, said he was going to fully resource Arctic strategies of all the Services. General Milley said the same last week at the hearing. But General VanHerck, in his hearing last week, he mentioned that the DOD budget, this budget, is inching along, did not move the ball very far down the field in terms of military Arctic strategy, and as you know, as NORTHCOM [Northern Command] Commander he is the advocate.

Can I just get an update from the two of you on that strategy, which I think you have done a great job on, and I look forward to the briefing I am going to be getting from both of you here in the next couple of weeks.

Secretary WORMUTH. Senator Sullivan, we have resourced, in this year's budget, the strategy, the Arctic strategy that the Army put forward to you, and I have not lost track of my commitment to come and brief you, so I am looking forward to doing that as well. I do not know if General McConville has anything else to add.

General MCCONVILLE. I think, Senator, you and I talked about the strategy is focused on being able to operate in the Arctic, which is a little different than operating from Alaska. We are putting that together. We will have more of an operational command up there. You tend to have an administrative command right now, but as you take a look at the fact that you are going to want to compete up there, we are taking a look. We have talked about the type of organizations we will put in there. We have got some more coordination to do, but we have a vision of where we want to go, and that is funded in the resources we have right now. There is some other collaboration that needs to be done on the type of units. We have a Stryker brigade up there, and as we take a look at what the future of that brigade looks like, that may change, and that is where we are having discussions right now.

Senator SULLIVAN. Good. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Sullivan. Senator Kaine, please.

Senator KAINE. Thank you, Mr. Chair. I want to continue along the lines of my colleague, Senator Sullivan, on budget issues, and I think the key is this Committee has to make a decision. The President has given us a budget and we have to make a decision about what we think is right. But I want to dig into this question of the Biden administration proposal and is it a "cut." I am looking at a document, and it is the FYDP [Future Years Defense Program] that the Trump administration sent to us last year in April, April 2020. Page 195, table 616, this was the Trump administration's proposal for Army funding. Fiscal year 2021 it was $177 billion. But in this table, the Trump administration predicted, their projection was that in fiscal year 2022 they were going to make the Army undergo a 10 percent cut. I am looking at this table and it shows

fiscal year 2021 $177 billion, but they project that the Army was going to drop to $164 billion in fiscal year 2022. That was the Trump administration's plan that they submitted to Congress last April.

The Biden administration did not follow the Trump plan for $164 billion. My understanding, and I think I am correct, is that the top line that is now before us is $173 billion. Am I right about the top line in the President's Budget, that it is $173 billion, not $164 billion?

Secretary WORMUTH. Yes, Senator. That is right.

Senator KAINE. At what point in your budget deliberations did you switch from the Trump-era projection of $164 billion to the dollar amount that was submitted in the President's Budget of $173 billion?

Secretary WORMUTH. Senator Kaine, I think I am going to have to let General McConville speak to that because I was not yet the Secretary during the budget deliberations.

General MCCONVILLE. Yes, Senator. As far as the budget discussions, I was not aware, as far as we were planning through the process, on how that was going to play out, what was enduring OCO, what was OCO, and all those type things. So I cannot give you a good answer to that but I will take a look and come back to you.

Senator KAINE. Yeah, I would like to ask that for the record, and, Mr. Chair, if I could, I would like to submit the FYDP that was submitted to us last April 2020, for the record.

Chairman REED. Without objection.

[The information referred to can be found in the Appendix.]

Senator KAINE. Because I think what it shows is that contrary—again, the question of what is the right dollar level for the Army is a very legitimate one, and we may well decide, as a committee, that the President's request is not sufficient. I have done that before and I may do it again. But if I am thinking about who is proposing to cut, I am sure glad that President Biden recommended a $173 billion top line instead of $164 billion top line, which was suggested by the FYDP that the Trump administration gave us over a year ago.

That is the only questions that I have, Mr. Chair, and I will yield time back.

Chairman REED. Thank you very much, Senator Kaine, and I believe that we have concluded all of our colleagues who wished to speak. At this point let me thank the Secretary for her comments and General McConville for your comments, both of you for your extraordinary service. With that I will call the hearing adjourned.

[Whereupon, at 11:20 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

INTEGRATED VISUAL AUGMENTATION SOLUTION RADIOS

1. Senator SHAHEEN. Secretary Wormuth and General McConville, in the fiscal year 2022 budget request, the Army appears to request that funds intended for IVAS radios be transferred from the IVAS funding line to the Handheld, Manpack and Small Form Fit (HMS) line. This is a new program and new start in fiscal year

2022. Can you ensure that the funding requested will support a full and open competition and procurement process for the IVAS radios?

Secretary WORMUTH and General MCCONVILLE. Procurement of the single channel IVAS radios is not a new program start. The Fiscal Year 2022 President's Budget Request outlined the intent to manage the IVAS radios within the HMS program. The single channel radio (IVAS) requirement will be executed through a January 2021 approved Middle Tier of Acquisition (MTA) Rapid Fielding pathway. An Other Transaction Agreement (OTA) Indefinite Delivery, Indefinite Quantity (IDIQ) contract was awarded on 25 March 2021. The program office will continue to utilize competitively awarded contracts using best value source selection procedures.

ENHANCED NIGHT VISION GOGGLE-BINOCULAR (ENVG–B)

2. Senator SHAHEEN. Secretary Wormuth and General McConville, the fiscal year 2022 request for ENVG–B is approximately $218 million, however, according to last year's budget justification documents, the projected budget request for ENVG–B procurement in fiscal year 2023 would be about $6 million. That is a significant cut to a program that is being fielded and receiving positive feedback. Does the Army still plan to request $6 million in procurement for ENVG–B in fiscal year 2023 or will that number be revised?

Secretary WORMUTH and General MCCONVILLE. The Army will consider an appropriate revision to the Army's fiscal year 2023 budget request for the ENVG–B in order to prioritize resources in accordance with the National Defense Strategy and our Modernization Priorities. Following the Night Vision Modernization Strategy, the Army is initially focusing on the IVAS, which is expected to be the night vision device of choice for our Close Combat Force Soldiers, while the ENVG–B systems will be used by the Close Area Combat Force units. While the ENVG–B has received very positive feedback and is a leap forward from older night vision devices (such as the PVS–14), it does not necessarily provide overmatch against current and future adversaries.

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

ARMY MULTI-DOMAIN TRANSFORMATION AND THE INDO-PACIFIC

3. Senator HIRONO. General McConville, the Army's #1 modernization priority is long-range precision fires—including missiles you're planning to base in the Western Pacific—can you provide a general status update on the progress of getting allies and partners in the Region to agree to host these weapon systems?

General MCCONVILLE. Rather than seeking permanent basing, the Army (with United States Army Pacific in the lead) is prioritizing the necessary agreements and infrastructure to ensure rotational access for Long Range Precision Fires (LRPF) and other Army capabilities inside the first island chain during competition. At this time, the Army is not seeking permanent basing of LRPF in the Western Pacific, but it is seeking the necessary access to posture LRPF in competition and for contingency.

ARMY'S HAWAII INFRASTRUCTURE READINESS INITIATIVE (HIRI)

4. Senator HIRONO. Secretary Wormuth and General McConville, I'm concerned about the Army's long-term effort to modernize installations in Hawaii through MILCON, known generally as the Hawaii Infrastructure Readiness Initiative—the only two projects funded in this year's budget are for the West Loch ammunition storage annex and a veterinary treatment facility at Pearl Harbor. Three other projects—an Aviation Operations Building and a Rotary Wing Parking Apron at Wheeler Army Airfield and a Command and Control Facility at Fort Shafter—are on your unfunded requirements list. Given the Army's focus on supporting the joint force to deter China in the Pacific, why aren't these three high risk MILCON projects that you identified on your unfunded requirements list in the base budget request?

Secretary WORMUTH and General MCCONVILLE. The Army is concerned about the condition of its infrastructure in Hawaii and the impacts that substandard facilities have on readiness and Soldier quality of life. The Army must balance these requirements against all requirements, across all installations, in support of quality of life, readiness, and modernization. The Army intends to address the Rotary Wing Parking Apron, the Aviation Operations Building, and the final increment for the Command and Control Facility in future budget cycles if they are not authorized and appropriated in this budget.

RENEWAL OF TRAINING LAND LEASES

5. Senator HIRONO. General McConville, the Army is negotiating renewals for several training area land leases in Hawaii that are set to expire in 2029, including the Pohakuloa Training Area (PTA), which is critical for joint and partner nation readiness. It's important for the Army to conduct respectful engagement with local community leaders, especially the Native Hawaiian population. Is the Army Corps of Engineers' plan to stand up a Training Lands Retention Office by August of this year to work with the local community still on track?

General MCCONVILLE. Yes, the plan to stand up a Training Lands Retention office is on track and a program manager is expected to be hired by the end of August. This employee will work directly for the U.S. Army Pacific, Director of Training, as well as working in close partnership with both U.S. Army Hawaii and the U.S. Army Garrison Hawaii to accomplish program objectives. The position will enable a close working relationship with the local community.

ARMY MULTI-DOMAIN TASK FORCE

6. Senator HIRONO. General McConville, the Army's Multi-Domain Task Force (MDTF) is focused on defeating an enemy's anti-access/area denial capabilities. Is the Army still planning to stand up additional MDTFs beyond the one at Joint Base Lewis McCord in Washington State, and if so, where will they be located?

General MCCONVILLE. The Secretary of Defense announced in April that the Army will activate the second MDTF in Germany in September 2021. We are reviewing options for additional MDTFs, including added support for USINDOPACOM. However, given competing demands and available force structure, the Army has not yet made final decisions on where and when to grow additional MDTFs.

7. Senator HIRONO. General McConville, what steps is the Army taking to ensure the MDTFs can work closely with our allies and partners?

General MCCONVILLE. The Army has incrementally introduced MDTF concepts and capabilities with select countries interested in multi-domain operations. We are also initiating a Capability Gap Analysis to identify which Joint and Multi-Domain Operations (MDO) capabilities and linkages are required to integrate MDO with our allies and partners.

In the Indo-Pacific, United States Army Pacific (USARPAC) shapes force design and employment concepts. USARPAC and the Headquarters, Department of the Army will incorporate MDTF concepts with select allies and partner countries through Indo-Pacific Pathways exercises, joint exercises, concept development, and wargaming.

In Europe, the Army will activate a MDTF in mid-September 2021. This capability has received significant interest from allies and partners. As MDTF–Europe comes on-line, U.S. Army Europe-Africa (USAREUR–AF) will engage with specific allies and partners to refine region-specific requirements.

8. Senator HIRONO. General McConville, what additional MILCON projects do you anticipate being necessary to support the establishment of future MDTFs?

General MCCONVILLE. In the immediate term, no additional MILCON projects are necessary. The Army is using Operations and Maintenance (O&M) Restoration and Modernization (R&M) funds to adapt existing facilities to meet experimental or interim stationing of MDTFs. The Army will evaluate several stationing alternatives before making permanent stationing decisions in accordance with applicable laws and regulations. The Army is also conducting a facility Requirements Analysis to scope future MILCON submissions. Once the evaluation of permanent stationing alternatives (pursuant to NEPA and Army Regulations) is complete, the Army will be in a better position to identify and request future MILCON projects.

QUESTIONS SUBMITTED BY SENATOR TIM KAINE

DEPARTMENT OF ARMY BUDGET CHANGE FROM FISCAL YEAR 2021 FYDP PROJECTION TO FISCAL YEAR 2022

9. Senator KAINE. Secretary Wormuth, when did the Army begin to plan to a top line budget of $173 billion for fiscal year 2022?

Secretary WORMUTH. The Army conducted concurrent planning for different top lines throughout the POM 22 build in fiscal year 2020; however, it was not until the second quarter of fiscal year 2021 that the Army received specific guidance of

a $173 billion top line. At this time the Army began deliberate planning based on that number.

QUESTIONS SUBMITTED BY SENATOR GARY C. PETERS

STRYKER

10. Senator PETERS. Secretary Wormuth and General McConville, the Stryker combat vehicle has proven itself to be one of the Army's most versatile platforms and continues to expand its missions beyond its core function as an infantry carrier. For example, Stryker was selected as the platform for critical fielding of urgently needed short-range air defense systems using both traditional missiles and cannon, as well as cutting-edge technology lasers. Stryker is also the platform for the Army's next generation of Electronic Warfare and Signals Intelligence systems and mobile command posts outside the Stryker Brigade formations. The key to being able to perform these expanded missions is the Army's decision in 2018 to upgrade to the newest Stryker A1 configuration that provides more engine and electrical power, a digital network, and a much heavier suspension. Does the pace of modernization outlined in your budget request reflect the Stryker's expanding missions?

Secretary WORMUTH and General MCCONVILLE. Yes, it does. The modernization efforts for the Stryker portfolio represent the Army's commitment to preparing Stryker Brigade Combat Teams (SBCT) to fight and win in a dynamic and complex operational environment. All aspects of the Army's budget request are nested and synchronized to develop a modern force capable of meeting worldwide contingencies. The lethality upgrades for the Common Remotely Operated Weapon Station- Javelin, the Medium Caliber Weapon System, and the Anti-Tank Guided Missiles Vehicle prepare the SBCT to meet its expanding mission set on the future battlefield. These upgrades will yield six DVHA1-equipped, very capable, and lethal, SBCTs by the end of fiscal year 2030.

The Army budget request also accelerates funding for the SBCT's Stryker platform to incorporate the Terrestrial Layered System (TLS), which integrates Electronic Warfare, Signals Intelligence, and Cyber Warfare at the tactical edge of battle. We are funding four and one half SBCT sets of TLS between fiscal year 2021 and fiscal year 2022. Additionally, the Army is funding 96 Mobile Short Range Air Defense (M–SHORAD) integrated Stryker vehicles in fiscal year 2021 and fiscal year 2022 to defend Army Brigade Combat Teams (BCTs) against manned and unmanned aircraft systems.

11. Senator PETERS. Secretary Wormuth and General McConville, I am concerned that a planned effort to test two Active Protection Systems (APS) on the Stryker continues to be delayed and is listed in the Army's unfunded requirements list. How would not funding this testing impact the procurement of an APS for Strykers?

Secretary WORMUTH and General MCCONVILLE. The $21 million unfunded requirements list request would support multiple efforts. Specifically, $16 million is required to complete Phase 2 Iron Fist Light Decoupled (IF–LD) Urgent Materiel Release (UMR) documentation on the Bradley Fighting Vehicle (BFV) and $5 million is required to execute Limited Characterization (LC) of two Hard-Kill (HK) Active Protection System (APS) solutions informing the APS requirement on the Stryker vehicle. If the $16 million for BFV is not resourced, then logistic product development and verification, engineering change proposal release, vehicle software updates, and the UMR will not be completed. This will result in a day-for-day slip in procurement and fielding of a hard kill capability in support of the Directed Requirement. If the $5 million for LC is not resourced, the Army will be unable to determine if either HK APS solutions meet the specifications, or if integration of either system onto a Stryker platform is feasible without the performance data captured during the characterization effort. Therefore, the Army will be unable to proceed with the planned procurement of a HK APS solution for Stryker if the unfunded requirement is not resourced.

M–1 ABRAMS

12. Senator PETERS. Secretary Wormuth and General McConville, the Abrams Main Battle Tank as currently upgraded to the M1A2 SEPV3 configuration remains the world's best tank and is the backbone of the Army's most powerful formation, the Armored Brigade Combat Team (ABCT). I am concerned to see a 30 percent reduction in "version 3" upgrades when Russia is another year closer to fielding and exporting the T–14 Armata. What is affected by the 30 percent reduction reflected in the budget request?

Secretary WORMUTH and General MCCONVILLE. The 30 percent reduction will reduce Abrams production from one ABCT per year to three fourths of an ABCT per year and will reduce the number of brigade field modifications from two BCTs to one BCT in fiscal year 2022. The reduction in funding is due to the significant amount of funding placed in Abrams production over the past four years, the necessity to fund other critical Army modernization priorities, and the reduction in the Army's fiscal year 2022 budget.

13. Senator PETERS. General McConville, is this an acceptable level of risk?

General MCCONVILLE. The production at three fourths of an ABCT per year places Abrams at a moderate programmatic risk (which can be mitigated through Foreign Military Sales) and a low operational risk due to the significant amount of Abrams M1A2SEPv3 production in past years. As the Army is modernizing tanks at a faster rate than the rest of the combat vehicles in the ABCT, this allows the ability to focus on other critical Army modernization priorities.

CRITICAL INFRASTRUCTURE

14. Senator PETERS. Secretary Wormuth and General McConville, as co-Chair of the Defense Communities Caucus, I believe the Defense Community Infrastructure Program (DCIP) to be invaluable. But at the same time, I believe it could do more to strengthen communities' critical infrastructure to prevent cyber-driven disruptions that impact force projection and readiness. While studying how cyber-originating disruptions can impact force projection, the Army Cyber Institute's Jack Voltaic Project developed a software-based framework for local governments to rehearse their cyber incident response capabilities. Do you see merit in equipping municipalities with solutions like this through a DCIP-like process?

Secretary WORMUTH and General MCCONVILLE. Yes, providing communities programs like Jack Voltaic through a Defense Critical Infrastructure Program-like process is important. This is true not only to the communities involved, but also to maintain our national security. To help local governments prepare for potential crises, Jack Voltaic was created to bring the whole-of-community together. This program ensures industry and the national security enterprise, as well as federal, state, and local governments are brought together in an unclassified exercise environment to understand the challenges for communities, to develop incident response plans, and to them capture lessons learned. The ultimate goal of this program is to develop an exportable framework that communities throughout the United States can use to run an exercise for themselves and to ensure DOD preparedness for Defense Support to Civil Authorities (DSCA) requests.

Past efforts illuminated cyber response challenges for financial institutions in New York City; addressing attacks against multiple infrastructure sectors after a hurricane in Houston; city-wide cyber responses in eight locations, as well as disruption of Army force projection via highways, railroads, and the ports of Savannah and Charleston. The Jack Voltaic planning tools show great potential through a DCIP-like process, both to exercise the cyber resilience of communities near military bases, but also for the Army to exercise force projection with critical infrastructure owners and operators. This software framework is at an initial operating capability, but needs additional development and testing before wider distribution.

15. Senator PETERS. Secretary Wormuth and General McConville, will you explore ways to translate the institute's work into something useable for communities?

Secretary WORMUTH and General MCCONVILLE. The Army Cyber Institute (ACI) has already begun the work needed for communities to conduct independent Jack Voltaic-like events. Currently, ACI has issued grants to universities for development of exercise planning tools that will allow communities to create their own scenarios, conduct their own exercises, and share data and lessons learned among various communities. The work is expected to be fully operational and ready to transfer to communities in fiscal year 2023, depending on future funding.

PROFESSIONAL DEVELOPMENT

16. Senator PETERS. Secretary Wormuth, the budget request shows a significant reduction in Army Tuition assistance, citing an "anticipated reduction of intake rates" into the program. Will this translate to less funds available to soldiers pursuing off-duty civilian education (e.g., lowering $4,000 limit per fiscal year)?

Secretary WORMUTH. The Army Cyber Institute (ACI) has already begun the work needed for communities to conduct independent Jack Voltaic-like events. Currently, ACI has issued grants to universities for development of exercise planning tools that will allow communities to create their own scenarios, conduct their own exercises,

and share data and lessons learned among various communities. The work is expected to be fully operational and ready to transfer to communities in fiscal year 2023, depending on future funding.

17. Senator PETERS. Secretary Wormuth, is the reduction in any way related to the current problems stemming from the transition to ArmyIgnitED from GoArmyEd?

Secretary WORMUTH. No, the current challenge with bringing ArmyIgnitED fully online is unrelated to the President's Budget Request. ArmyIgnitED replaces the outdated legacy system and supports participation by allowing Soldiers to request tuition assistance through an automated process.

18. Senator PETERS. Secretary Wormuth, when will the ArmyIgnitED-related problems be resolved?

Secretary WORMUTH. ArmyIgnitED opened, Army-wide, for tuition assistance enrollments on July 19, 2021. The transition to ArmyIgnitED continues to progress as technical issues are resolved. Soldiers are able to use ArmyIgnitED for those educational institutions that have uploaded their institutional degree files into the system. Currently, there are 92 schools with successful integration into the ArmyIgnitED platform. Soldiers will continue to gain greater access to the ArmyIgnitED platform as more educational institutions successfully enter into the system. As an interim measure, while schools continue to enter into the system, the direct enrollment option with educational institutions through an exception to policy is still available should any Soldier be unable to enroll through ArmyIgnitED. The Army will continue working with those participating schools who have not yet uploaded their institutional degree files as well as with our Soldiers who need to use the exception to policy process to enroll.

MULTI-DOMAIN TASK FORCE

19. Senator PETERS. Secretary Wormuth and General McConville, the Multi-Domain Task Force is the organizational centerpiece for Army modernization, yet its Intelligence, Information, Cyber, Electronic Warfare, and Space (I2CEWS) Detachment and the All-Domain Operations Center are on the list of unfunded requirements. As these are relevant in competition, crisis, and conflict, why are they not in the base budget?

Secretary WORMUTH and General MCCONVILLE. The Army's fiscal year 2022 budget request reflected the Army's highest priorities. Recognizing the importance of the Multi-Domain Task Force, the Army would welcome an opportunity to accelerate the Intelligence, Information, Cyber, Electronic Warfare, and Space (I2CEWS) Detachment and the All-Domain Operations Center requirements in fiscal year 2022, if additional funding is available.

AMPV

20. Senator PETERS. Secretary Wormuth and General McConville, the Armored Multi-Purpose Vehicle (AMPV) is listed by the Army as one of its 31+4 key modernization programs but received a cut in funding of over $500 million from last year's budget position and there is no Unfunded Requirement listed for AMPV in the Army's request. Additionally, the budget exhibits highlight that this funding will be used for non-production activities and not actually procure any vehicles in fiscal year 2022. The Public Affairs Officer for the PEO who owns AMPV published a statement that identified the reason for the cut and that the program was rebaselined to support moving the Full Rate Production (FRP) decision to fiscal year 2023; however, by not including the Future Years Defense Plan (FYDP) in the Army's budget exhibits, this Committee is unable to validate that the PAOs statement is true and whether AMPV actually remains a priority for the Army. When will this Committee see the FYDP for AMPV?

Secretary WORMUTH and General MCCONVILLE. I understand that the Department of Defense intends to submit a fiscal year 2023 FYDP during the Fiscal Year 2023 President's Budget submission next year. That decision will be informed by the National Defense Strategy review process.

The single year budget was submitted because the transitioning administration was developing its policies and strategic guidance necessary to inform the out-year budget plans. For the last two Presidential transition year budgets, for fiscal year 2010 and fiscal year 2018, DOD only submitted the next year Fiscal Year President's Budget.

21. Senator PETERS. Secretary Wormuth and General McConville, AMPV is the only Next Generation Combat Vehicle in production. Is it still a priority?

Secretary WORMUTH and General MCCONVILLE. Yes, the Armored Multi-Purpose Vehicle (AMPV) is managed by the Next Generation Combat Vehicle (NGCV) Cross-Functional Team (CFT) and is included in the Army's 31+4 modernization priorities. Additionally, the Optionally Manned Fighting Vehicle is in development and is fully funded in fiscal year 2022. It is scheduled to begin replacing the Bradley Fighting Vehicle no earlier than fiscal year 2029.

22. Senator PETERS. Secretary Wormuth and General McConville, the Army and contractor have highlighted significant investments made for this program to include the first ever use of robotic welding on combat vehicles. Given our soldiers are currently using a Vietnam era vehicle, will Full Rate Production still occur at a rate to support the investments made for this program, which the Committee understands is at least 1 brigade set per year?

Secretary WORMUTH and General MCCONVILLE. The Army remains fully committed to divesting the Vietnam-era M113 family of vehicles from our ABCTs as quickly as fiscally possible. For the Armored Multi-Purpose Vehicle (AMPV), the Army awarded four Low Rate Initial Production (LRIP) contracts for three and half Armored Brigade Combat Teams' (ABCTs) worth of AMPVs (or 457 vehicles), and those are being produced and will begin fielding in fiscal year 2023. The Army elected to re-baseline the AMPV program last winter to provide the vendor more time to establish the production line and not because of any change in priority. AMPV remains an extremely important Army modernization effort. The next contract and the first Full-Rate Production (FRP) contract under this re-baseline is scheduled for fiscal year 2023.

TACTICAL ELECTRIFICATION

23. Senator PETERS. Secretary Wormuth, during your confirmation hearing you testified that electrification of combat and tactical vehicles, as well as associated battery technology development would be focus areas for you if confirmed in order to better understand how deeply the Army could pursue tactical electrification noting operational benefits in fuel efficiencies and overall power management. The Administration has also placed emphasis in supporting the transition of the commercial automotive fleet to all-electric fleets through recent Executive Orders. As such, please provide more details on:

- The Army's near and long term strategy for tactical electrification.

Secretary WORMUTH. In the near term, we are partnering with U.S. industry through multiple initiatives to share knowledge and to learn from our collective investments. We are also investing in the technologies required to reduce our dependence on fossil fuels, including power storage, rapid recharging, and integration of new capabilities into existing systems. Progress to date has

demonstrated the potential for smarter use of power to improve mileage of our tactical wheeled vehicle fleets and the potential for hybrid power options to fulfill some of our vehicle power requirements. Fully electric options for our heaviest combat platforms are not currently feasible with existing and emerging technologies.

The Futures and Concepts Center of U.S. Army Futures Command is developing a long-term electrification strategy for the Army. It is informed by national policy and strategies, industry plans and progress, and military requirements to implement the defense strategy. The strategy will describe the future Modernized Army Energy Ecosystem and identify ways and means to achieve it.

- How you are working with commercial industry to leverage the significant levels of internal research and development investment being made by automotive companies?

Secretary WORMUTH. Our Ground Vehicle Systems Center (GVSC) within U.S. Army Futures Command's Development Command (DEVCOM) is co-located with the commercial automotive industry in southeastern Michigan. The GVSC leverages its proximity to automotive technical centers through Cooperative Research and Development Agreements (CRADAs) with many of these automotive partners to leverage commercial efforts and investments in areas such as electrification. To date, we have established 11 CRADAs and Test Service Agreements with automotive Original Equipment Manufacturers and suppliers of electrification components. Additionally, the GVSC has hosted five electrification forums attended by dozens of companies working in electrification to share information on the Army's unique operational environment and to gain their input on our electrification plans and architecture. These forums allow the GVSC to share the Army's electrification needs and challenges with commercial industry partners. The GVSC has an established track

record of working with America's research universities and leveraging groups such as the Automotive Research Center (ARC), partnering with 15 industry organizations and 9 universities from around the country. These collaborative efforts between the Army and the commercial automotive sector are informing future vehicle requirements.

Finally, the Army Applications Laboratory (AAL) in Austin, Texas, is working with the automotive sector nationwide to find industry solutions in relevant areas, such as the mobile charging infrastructure needed to support future military electric systems. As part of this effort, the Army has received technical input and solutions from over 70 different non-traditional partners, ensuring that commercial best practices are being leveraged to address the unique military challenges with vehicle electrification.

ELECTRIC LIGHT RECONNAISSANCE VEHICLE (ELRV)

24. Senator PETERS. Secretary Wormuth, regarding the electric light reconnaissance vehicle (eLRV) program, I understand the Army has an identified unfunded requirement in fiscal year 2022 of $5.6 million and that if left unfulfilled could significantly impact the Army's ability to award up to 4 other transaction agreements to initiate this critical program. What steps are you taking internally to ensure this program remains on schedule?

Secretary WORMUTH. The Fiscal Year 2022 Budget Request reflects the Army's best effort to balance allocated funding against our requirements while assuming the least anticipated risk. The electric Light Reconnaissance Vehicle (eLRV) program was not funded in our budget request. If additional resources become available, we will consider funding the eLRV to avoid a one-year slip in its program.

QUESTIONS SUBMITTED BY SENATOR TAMMY DUCKWORTH

FACTORING PROGRAM PERFORMANCE FOR BUDGET PRIORITIZATION

25. Senator DUCKWORTH. Secretary Wormuth and General McConville, DOD, particularly the Army, must leverage best practices to make sure our Nation delivers high-quality systems to our warfighters on-time . . . on-budget . . . in alignment with the National Defense Strategy and Interim National Security Strategic Guidance. I'm encouraged by our progress to date in key programs, like Future Vertical Lift, or FVL. The Army's embrace of a streamlined—so-called, "middle tier of acquisition" pathway—is proving effective in efficiently generating highly competitive options, while minimizing program failure risk to the government and the American taxpayer. Secretary Wormuth, can you address how the Army is factoring program performance to prioritize budget requests, especially in regard to doubling down on proven programs that work, such as FVL?

Secretary WORMUTH and General MCCONVILLE. Program performance is just one factor that is considered for budget priority. Programs are prioritized based on the importance of the capability gap they are filling and the timeframe in which that gap must be closed.

For instance, Long Range Precision Fires is the Army's number one acquisition priority because we are currently outranged by our near peer competitors, and we need to close that gap as soon as possible. Other gaps may not need to be closed as quickly, so they fall lower in priority and can be developed and procured at a slower rate. This frees up budget for higher priority programs. Programs that have a poor performance record, on the other hand, typically result in lower budget priority and offer an opportunity to shift funding within the budget, across the Future Year's Defense Program, because underperforming programs typically cannot execute their full budget due to program delays.

We are, however, very proud of the combined Army teams' approach to the FVL programs, including their responsible use of new procurement and acquisition authorities granted by Congress, the focus at all echelons on affordability, and the continued emphasis on stable and achievable requirements.

26. Senator DUCKWORTH. Secretary Wormuth and General McConville, another aspect of FVL that warrants a compliment is the Army's discipline in making sure the service implements a "modular open systems architecture" approach to maximize the Army's flexibility in managing operation and support costs over the program's lifecycle. Actively avoiding vendor lock-in is absolutely vital to enable DOD to provide warfighters with cutting-edge technology, while lowering overall costs through competition. Secretary Wormuth, as the Army continues to embrace modular open systems architecture in the FVL family of systems, will you commit to

working with me to make sure this acquisition best practice is adopted and replicated across all Services?

Secretary WORMUTH and General MCCONVILLE. The Army is committed to Modular Open Systems Architecture (MOSA) as a warfighting imperative and has developed policy and implementation guidance to apply and certify the appropriate level of MOSA implementation in all Army programs. Accordingly, each of the Army Program Executive Officers (PEOs) have written MOSA guidance specific to their portfolio of programs. PEO Aviation has established a MOSA Transformation Office to ensure a disciplined approach to MOSA. It is currently identifying lessons learned in applying MOSA to Future Vertical Lift (FVL) and across the entire aviation portfolio of programs.

The Army is actively engaging with industry to identify means to enhance competition, avoid vendor lock-in, accelerate and streamline technology insertion, and reduce support costs over a program's lifecycle. The Army is also an active participant in the Office of the Secretary of Defense (OSD) Modular Open Systems Working Group and the associated Tiger Teams, where best practices are identified, established, and shared across the Services. We will continue to work with OSD to assist in the adoption and implementation of MOSA across the Department of Defense.

BALANCING MODERNIZATION EFFORTS WITH READINESS INVESTMENTS IN THE INDO-PACIFIC REGION

27. Senator DUCKWORTH. Secretary Wormuth and General McConville, I've been encouraged to see expanding roles for organizations such as the 5th Security Force Assistance Brigade and the National Guard's State Partnership Program. Forging long-standing relationships with SFABs and Guard units gives international partners a more local view of the U.S. in a way that presents a unique diplomatic opportunity, in addition to building partner military capabilities and interoperability. Bottom-line: enhancing relationships increases deterrence and opens doors to the access and presence we need to compete in the region. General McConville, how does the Army properly balance the need to invest in modernization with resourcing critical readiness and mil-to-mil initiatives with our partners and allies, particularly in the Indo-Pacific Region?

Secretary WORMUTH and General MCCONVILLE. The Army seeks to balance investment in modernization with resourcing critical readiness and mil-to-mil initiatives with our partners and allies, particularly in the Indo-Pacific Region, through a series of detailed analytic processes that consider requirements, funding, and risk across all programs. Army leadership uses these processes to ensure investments are balanced across all portfolios based on the National Defense Strategy and other service requirements, including the Indo-Pacific region. The Army continues to evaluate, contribute and invest in readiness and capabilities that support the Army's efforts in the Indo-Pacific region to build partnerships and allies.

For example, the Army instituted a new unit lifecycle model—ReARMM (Regionally Aligned Readiness & Modernization Model)—to generate ready forces for SECDEF validated requirements, which include exercises and engagements with our allies and partners, while allocating force elements to undergo deliberate modernization. ReARMM maximizes readiness while allowing the Army to continue its modernization. This model provides predictability to units and commanders and better aligns the many moving parts required to modernize a combat formation while simultaneously allowing the Army to program the right units to support exercises and mil-to-mil engagements.

28. Senator DUCKWORTH. General McConville, will you commit to exploring opportunities to expand the National Guard State Partnership Program in the Indo-Pacific to sustain presence and build partner nation capacity?

General MCCONVILLE. Yes. I fully support the National Guard's State Partnership Program. The State Partnership Program is one of our strongest tools for building partnership capacity and we continue to grow the program by two to three partners per year throughout the world. As the Pacific Defense Initiative is established, the USINDOPACOM Area of Responsibility will receive significant attention. We look forward to adding to the current 13 partnerships within the Indo-Pacific, which are critical to maintaining relationships in the region and avoiding conflict with China.

QUESTIONS SUBMITTED BY SENATOR JACKY ROSEN

RESERVE COMPONENTS & NEW ARMY FITNESS TEST

29. Senator ROSEN. General McConville, the Reserve Components face their own set of challenges as citizen soldiers, with two careers to manage and without access to the day-to-day services available to active duty troops on military installations. One such challenge will be the transition to the Army Combat Fitness Test (ACFT). While active duty soldiers will have ACFT equipment at their everyday place of work, Reserve Component soldiers will not, no matter how much equipment is fielded to Reserve/Guard units. These soldiers are not at their units every day to train on the equipment. This will require Reserve Component soldiers to have to pay for, and have access to, specialized gym equipment in order to train for the ACFT, whereas every soldier can train for the current Army Physical Fitness Test from their own home. How does the Army plan to address this disparity as they implement the ACFT?

General MCCONVILLE. The Army Reserve Components will continue to lead by example in ACFT implementation. The efforts by the Reserve Components ensure that no Soldier has to pay out of pocket in order to prepare for and then pass the ACFT. The ARNG has fielded 15,854 complete sets of ACFT testing equipment to over 1,400 cities and towns across all 54 States and Territories. This equipment is distributed to maximize Soldier access and is dispersed in a manner to provide at least one full lane of equipment for every 21 Soldiers assigned, which aggregates to nearly six lanes of equipment per ARNG facility. The Army Reserve has placed 8,020 sets of equipment in the field for Soldiers to use. Army Reserve analysis indicates 84 percent of USAR Soldiers have homes of record within 25 miles of an equipment facility. An additional 13 percent are within 50 miles.

Furthermore, Master Fitness Trainers are expertly advising and coaching Reserve Component Soldiers to train for the ACFT utilizing dozens of exercises that can be accomplished with only body weight, with simple equipment, or with the equipment Soldiers typically have on hand. All of these exercises are illustrated in the Army Training Publication 7.22.02, "Holistic Health and Fitness Drills and Exercises." The identified exercises in this reference allow Reserve Component Soldiers to train for the ACFT despite geographic dispersion or limited access to DOD fitness facilities, though all Reserve Component Soldiers have access to Department of Defense gyms and equipment. Finally, an additional 5,000 lanes of equipment are being distributed by TRADOC across the country to recruiting stations, ROTC schools/universities, and other TRADOC posts.

Lastly, the ARNG reports that 21 States are currently piloting Holistic Health and Fitness initiatives and partnership programs with access rights to equipment and facilities, such as YMCAs, schools, and community centers that will specifically enable ACFT training.

IRON DOME

30. Senator ROSEN. Secretary Wormuth and General McConville, I applaud the Army's decision to acquire two Iron Dome batteries and its successful integration of Iron Dome components as part of the Indirect Fire Protection Capability (IFPC) program. Despite the ongoing rocket attacks against U.S. Forces and facilities in Iraq showing gaps in the U.S.'s ability to defend against rocket attacks, the Army has eliminated having the current ability to defend against rocket attacks as a criteria in the IFPC selection, only requiring the future ability to have such a capability. This raises concerns about leaving our forces unprotected against these threats that adversaries are already using against the United States and allies like Israel. Why has the Army eliminated counter-rocket capabilities from being a requirement in the IFPC program?

Secretary WORMUTH and General MCCONVILLE. The Army has not eliminated counter-rocket capabilities as a requirement in the IFPC Increment 2 program. The enduring IFPC Increment 2 system will be fully integrated into the Army's Integrated Air and Missile Defense architecture to defeat not only cruise missiles, as directed in the Fiscal Year 2019 National Defense Authorization Act, but also rockets, artillery, mortars, and unmanned aircraft systems (UAS).

QUESTIONS SUBMITTED BY SENATOR ROGER F. WICKER

ARMY DECISION TO ELIMINATE MALARIA DRUG AND VACCINE RESEARCH

31. Senator WICKER. Secretary Wormuth, Senator Durbin and I recently sent a group letter to the Secretary of Defense regarding the elimination of the malaria

vaccine and drug research program at Walter Reed Army Institute of Research. We remain concerned with the Department's decisions over recent years to precipitously decrease and even eliminate funding for malaria research, particularly in light of increased drug-resistant malaria in Asia and insecticide resistance in Africa. Malaria remains the number one infectious disease threat to United States servicemembers abroad in those AORs.

As a Nation, we have learned during this pandemic that a lack of health readiness can come at an enormous cost to American life and treasure. Understanding the ability for an infectious disease such as malaria to disrupt mission readiness and the likelihood of continued future deployments to the AFRICOM and PACOM AORS, how will you ensure previous investments in malaria at the Walter Reed Army Institute of Research, the world's premier research center for malaria, continued to be leveraged?

Secretary WORMUTH. The U.S. Army Medical Research and Development Command (MRDC), a subordinate command of U.S. Army Futures Command, is committed to preserving internal expertise and capabilities that are essential to research and development of medical countermeasures to protect military personnel. MRDC and the Walter Reed Army Institute of Research (WRAIR) focus on scientific core competencies that are broadly applicable across a range of pathogens threatening the health and readiness of military personnel. As infectious disease threats emerge and evolve within the operational environment, MRDC and WRAIR will pivot those competencies towards the highest priority threats, focusing investments on threats that do not receive attention or funding from inter-agency partners, non-governmental organizations, or industry.

Malaria research and development will continue to have a high level of interest and support from inter-agency partners, academia, non-governmental organizations, and international bodies. The MRDC recently delivered two Food and Drug Administration (FDA)-approved drugs for malaria prevention and treatment, respectively: Tafenoquine and Artesunate. Tafenoquine can prevent malaria infection from all species of malaria and is a new option for malaria prevention that will increase in importance as resistance to standard of care therapies grows. Artesunate is the only FDA-approved treatment for severe malaria in the United States and is a critical capability to save lives.

UNFUNDED REQUIREMENTS LISTS

32. Senator WICKER. Secretary Wormuth, the MATES' repair is a National Guard priority that gets absorbed into the larger Army Unfunded Requirements List. Secretary Wormuth, would providing separate Unfunded Lists better communicate priorities specific to the Army and the Army National Guard?

Secretary WORMUTH. The Army National Guard (ARNG) currently integrates UFR requests within a Total Army concept. This ensures the ARNG UFRs nest with the Army's priorities of improving the quality of life of our Soldiers and Families, modernizing our facilities and equipment, and increasing readiness of the force.

AFGHANISTAN SPECIAL IMMIGRANT VISA (SIV) PROGRAM

33. Senator WICKER. Secretary Wormuth, as United States troops continue to execute the withdrawal from Afghanistan, I am concerned about the safety of our Afghan partners who assisted United States and coalition forces in the country. The Special Immigrant Visa (SIV) program provides a path for these individuals and their families, but delays and quota limits may jeopardize the lives of these persons. Secretary Wormuth, please describe what the Army is doing to ensure the safety of our Afghan partners as we depart the country, both in support of the SIV program and through other means.

Secretary WORMUTH. The Army is fully integrated into Department of Defense planning efforts that support the State Department and the whole-of-government approach to ensuring the safety of our Afghan partners as military operations come to a close in Afghanistan. To that end, the Army has established a specific team to assist with prudent planning efforts.

QUESTIONS SUBMITTED BY SENATOR THOM TILLIS

FORT BRAGG MILITARY CONSTRUCTION

34. Senator TILLIS. Secretary Wormuth and General McConville, as you are aware, the Immediate Response Forces (IFR) is the Nation's rapid response force, which is comprised of paratroopers from one of the 82nd Airborne Division's brigade combat teams and should be able to rapidly deploy within 18 hours. For the first

time since 1989, the response force received rapid deployment orders on New Year's Eve 2019, following the Iran-supported Hezbollah militia attacks on the American embassy in Iraq. However, as paratroopers prepared for the deployment, they spent most of the day traveling across Fort Bragg from location to location gathering equipment instead of spending their limited time on briefings or preparing for the mission. Compounding this issue is that conventional forces at Fort Bragg have only been supported with a single MILCON project since 2010, compared to the numerous MILCON projects that have supported special operations units at the same base. It is irresponsible of Congress, and I would argue of the Army, to require the IFR to perform its duties if we are not going to provide the necessary support facilities to ensure mission success and soldier safety. While it is currently not on the unfunded priority list, do I have your commitment that you will support our IFR warfighters by placing their request for a strategic deployment complex and a tactical equipment maintenance facility on this year's list of unfunded priorities?

Secretary WORMUTH and General MCCONVILLE. At this time, the Strategic Deployment Complex and the Tactical Equipment Maintenance Facility projects lack sufficient design status. As a result, they do not meet the 35 percent-design threshold required for inclusion in the fiscal year 2022 CSA MILCON unfinanced requirement (UFR) list. These projects are expected to meet the design threshold to compete in a later budget cycle.

35. Senator TILLIS. Secretary Wormuth and General McConville, taking it a step further, if the IFR is essential to the Department's ability to rapidly support America's national security in emergent crises, why is it not part of the Army's requested budget? If it is not essential, as it would appear based on the budget and unfunded priority list, why have it?

Secretary WORMUTH and General MCCONVILLE. The Immediate Response Force (IRF) is essential to the Department's ability to rapidly ensure America's national security in emergent crises. The Army continues to develop Military Construction, Restoration, and Modernization projects to improve the efficiency of deployment operations in support of the IRF, while taking into account the Army's facility requirements worldwide to support unit readiness and Soldier quality of life.

FUTURE VERTICAL LIFT

36. Senator TILLIS. Secretary Wormuth and General McConville, the Army's Future Vertical Lift (FVL) modernization program consists of two distinct aircraft, each designed to accomplish different missions in the Army's future force. They are the Future Long Range Assault Aircraft (FLRAA) program, designed to replace the Blackhawk and the Future Armed Reconnaissance Aircraft (FARA) designed to fill the void left by the retirement of the Army's armed scout aircraft. The Army has budgeted $181m between fiscal year 2019 and fiscal year 2021, and Congress has added $185m during the same period. The Army suggests that this program is its number 3 modernization initiative (out of 6) and the total funding is between number 5 and 6 in total dollars over the FYDP. Additionally, the Army has awarded two competitive prototypes for each variant, both to Bell Helicopter and LM/Sikorsky. The Future Vertical Lift program is considered the furthest along of all the projects under the CFTs, and Futures Command. The FLRAA program, in particular, is the one major program that is actually flying. This is not a "paper" program, and thus represents the "Poster Child" for a successful acquisition program coming out of Futures Command. The existing vertical lift fleet, according to CSIS, lacks the necessary speed, range, endurance, survivability, and lethality to compete in the Anti Access/Area Denial (A2/AD) environment. The U.S. Army FVL program seeks to modernize the vertical lift fleet by delivering the most modern, versatile, and lethal power projection platform to insure success on the modern battlefield. There have been recent articles in the press (believed to be pushed by those opposing FVL) which have been critical for the Army's requirement for speed. The Army has pushed back aggressively citing the need for speed and range to increase lethality and allow the Army to achieve a more lethal force in the Great Power Competition, and Indo-Pacific Theater. General McConville, the Army has consistently discussed the need for speed and range, as well as survivability when it comes to the future vertical lift aircraft. Could you explain to this Committee why speed and range are so critical to the Future Long Range Assault Aircraft and how this new technology will allow the Army to leverage FLRAA as a power projection platform?

Secretary WORMUTH and General MCCONVILLE. FLRAA is the next generation of affordable vertical lift, including both assault and intra-theater aeromedical evacuation (MEDEVAC) aircraft. It will be both effective and decisive in the lower tier of the air domain.

The fundamental capability of FLRAA is its reach and the power projection it provides in the increasingly dangerous and complex multi-domain operations environment. FLRAA will compel enemy forces to respond to multiple dilemmas with its ability to move and converge ground forces through decentralized operations over extended distances. FLRAA will expand the reach of ground forces to conduct air assault missions across the battlespace, reducing enemy reaction time and freedom of action.

Importantly. FRLAA will remain survivable with the use of Air Launched Effects (ALE) and integration with other maneuver forces and long-range fires, all enabled by the network. Additionally, the cost per effect for FLRAA to insert two infantry battalions in one period of darkness is comparable to the cost of twice as many UH–60s to achieve the same effect.

37. Senator TILLIS. General McConville, how will this capability assist the Army with its strategy in the Indo-Pacific Theater and in the Great Power Competition?

General MCCONVILLE. The Future Vertical Lift (FVL) ecosystem is poised to provide Multi-Doman capabilities for Joint Force threat penetration at the outset of large-scale conflict using transformational speed, range, and the ability to converge Army and Joint sensors and shooters to enable decision dominance. In addition, FVL will provide overmatch capability and capacity to out-tempo the enemy at all Army echelons to win the close fight.

China's investment in creating a dense network of anti-access/area-denial (A2/AD) capabilities throughout the Pacific island chains presents a complex problem. It inhibits U.S. power projection, erodes joint freedom of maneuver, and ultimately diminishes credible deterrence.

Dominating in the lower tier of the air domain, the FVL ecosystem provides a unique advantage against A2/AD systems, such as Integrated Air Defense Systems (IADS), enemy long-range fires, and threat command and control systems. Hidden by surface clutter while operating at lower altitudes, FVL outmatches radar and observation with the standoff and swarming capability of its Air Launched Effects (ALE) with Electronic Warfare (EW) and lethal strike capabilities. Joint force aircraft and follow-on maneuver forces can exploit this penetration to destroy other critical targets once FVL destroys or neutralizes the IADS barrier.

38. Senator TILLIS. General McConville, is the Future Vertical Lift program fully resourced, across the FYDP for both the FLRAA and FARA programs, both Research and Development funding and Procurement funding? What are the amounts of funding, through the FYDP? And in which year will Congress see funding requested for procurement dollars?

General MCCONVILLE. We do not yet know how much funding will be allocated to the Army each year beyond fiscal year 2022, so we are not able to state that both FLRAA and FARA are fully resourced across the FYDP. Fiscal year 2030 remains our target for equipping the first unit.

Both the FARA and FLRAA programs are actively utilizing in-process feedback from our industry partners to inform data driven discussion, government cost models, and decisions on future resourcing requirements.

The FARA and FLRAA analyses, demonstrations and risk reduction, and prototyping efforts will help us ensure informed future budgets; we are committed to keeping Congress informed on these efforts at each juncture. Procurement requirements will align to support the Army's First Unit Equipped target of fiscal year 2030 and will be informed by the vendors' performance through developmental test activities.

SHORT-RANGE RECONNAISSANCE PROGRAM

39. Senator TILLIS. Secretary Wormuth and General McConville, it is my understanding that the Army's Short-Range Reconnaissance program was the driver behind the development of the "Blue Small Unmanned Aircraft Systems." Am I correct in the assumption that the five Blue drones that have undergone a down-select for consideration are 100 percent made in the USA?

Secretary WORMUTH and General MCCONVILLE. The Army's RQ–28A Short Range Reconnaissance (SRR) program is separate and distinct from Blue Small Unmanned Aircraft Systems (Blue sUAS) managed by the Defense Innovation Unit (DIU). The Army's SRR program provided access to Army contracts that were utilized by DIU to evaluate the first batch of the Blue sUAS aircraft. Specifically for SRR, the RQ–28A is not manufactured completely in the United States. However, it is compliant with Section 848 of the Fiscal Year 2020 National Defense Authorization Act, which

restricts all Department of Defense UAS critical components from being manufactured in specific countries.

ARMY GROUND VEHICLES

40. Senator TILLIS. Secretary Wormuth, during the hearing General McConville clearly identified the need to modernize and transform the Army for any future fight against a strategic peer competitor like China and stated that "most of the weapon systems we're using are 1980 vintage". Regarding the Army's acquisition strategy for the Joint Light Tactical Vehicle (JLTV) program, which the Army plans to recomplete as a "build to print" competition and is the only tactical wheeled vehicle competition planned through 2028, I'm concerned about whether this current "build to print" strategy is setting the right conditions for modernization of the Army's TWV fleets, specifically the JLTV program, which is currently planned to be in the fleet through 2040. What other alternative acquisition strategies have you considered as part of the JLTV competitive acquisition strategy to ensure the JLTV remains relevant and not effectively buying more of the same capability that is technically better designed for the previous conflicts in Iraq and Afghanistan?

Secretary WORMUTH. The Army conducted research and considered multiple strategies, which focused on how much industry would be asked to invest and the capabilities, risk, and the life cycle cost implications of these decisions. The Joint Light Tactical Vehicle (JLTV) acquisition strategy was selected to leverage an already capable platform, and through focused design upgrades and competition, it brings new capabilities to Soldiers and Marines. The JLTV Follow-On Contract is based upon a new variant of the family of vehicles, which includes several technology insertions in the areas of powertrain, electrical architecture, noise reduction, and stowage. The pending competition also includes significant incentives for competitors to propose additional technology enhancements in the areas of fuel efficiency, corrosion, upgrade of vehicle architecture, and driver assist capabilities, while keeping the cost of the JLTV affordable. These technology advances on a proven system, which currently has growth and modularity capability in weight, power, and available kits, make the JLTV the optimal platform for the light tactical vehicle mission in a Multi-Domain Operational environment.

41. Senator TILLIS. Secretary Wormuth, the Army's infantry squad vehicle (ISV) is planned to enter full rate production in September and despite this being a new capability to address an operational need for infantry brigade combat teams for enhanced tactical mobility the program had its funding reduced by 10 percent in the fiscal year 2022 budget request, effectively keeping production rates well below minimum sustaining rates of production. Recognizing the budget request was submitted without a future year's defense program, could you provide us with more insight into the long term acquisition strategy for the ISV program to include whether the Army plans to procure the authorized objective of 2,065? It's my understanding the Army is currently reviewing the light tactical vehicle fleet mix for infantry brigade combat teams to include JLTV, HMMWVs, and ISVs. What is the status of this review and when can we expect to see details?

Secretary WORMUTH. The plan for the Infantry Squad Vehicle (ISV) was to procure 11 Infantry Brigade Combat Team (IBCT) sets, or 649 vehicles, with funding ending in fiscal year 2024. The Tactical Wheeled Vehicle Study is ongoing, and it will inform the right mix of light tactical vehicles in the IBCT. That study will inform Army decisions on future procurement of light tactical vehicles for the IBCT and the Army expects to have the results later this year.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

COLD-WEATHER ALL-TERRAIN VEHICLE

42. Senator SULLIVAN. Secretary Wormuth and General McConville, the Cold-Weather, All-Terrain Vehicle (CATV) is not on the Army's "31 plus 4" modernization list. As I understand it, two firms were recently selected to build CATV prototypes that would replace the obsolete Small Unit Support Vehicles, which enable mobility for Arctic operations. Can you provide an update on this program, including when it will achieve initial operational capability?

Secretary WORMUTH and General MCCONVILLE. The Cold Weather All-Terrain Vehicle (CATV) program awarded Other Transaction Authority agreements to two vendors in April 2021 for the prototype phase. Each vendor delivered two vehicles in June 2021. The Army will perform testing of the vehicles at Cold Regions Testing

Center, FT Greely, AK. Successful completion of the testing of these prototypes will determine eligibility to compete for a production contract.

A production award is targeted for the fourth quarter of fiscal year 2022, with the first unit equipped with five vehicles in the fourth quarter of fiscal year 2023 to United States Army Northern Warfare Training Center, FT Wainwright, AK. At this point, the Army intends to protect programmed funding for this important modernization effort, as it is necessary to divest the Small Unit Support Vehicles (SUSV), which are reaching obsolescence.

ARCTIC BRIGADE COMBAT TEAMS

43. Senator SULLIVAN. Secretary Wormuth and General McConville, the Army Arctic strategy calls for the transformation of the Alaskan-based BCTs into Arctic BCTs to "recapture our cold-weather dominance." Part of my understanding of this transformation is that it requires a shift away from Infantry Carrier Vehicles, or Strykers, to a vehicle that provides better mobility in Arctic terrain. What is the status of the Army's transformation effort?

Secretary WORMUTH and General MCCONVILLE. The Army is finalizing options and timelines to transform the Alaska-based Stryker Brigade Combat Team (SBCT) into a more arctic-capable formation. We expect to announce the options being assessed in early fiscal year 2022. Ground mobility requirements in arctic terrain could be provided by the Cold Weather All-Terrain Vehicle (CATV). The CATV will replace the aging Small Unit Support Vehicle (SUSV). The CATV program is in the prototype phase, with vehicles from two vendors conducting testing at the Cold Regions Testing Center at Fort Greely, Alaska. Our current timelines project a production award by the end of fiscal year 2022, and first unit equipped by the end of fiscal year 2023.

44. Senator SULLIVAN. Secretary Wormuth and General McConville, what is the timeline for 1–25 and 4–25 BCTs to convert to Arctic BCTs?

Secretary WORMUTH and General MCCONVILLE. The Army is reviewing options for the conversion of force structure to Arctic-capable formations. Once approved, those conversions will follow the Total Army Analysis (TAA) timeline with announcements typically in the first quarter of the fiscal year. The decision will be followed with a synchronization of resources (personnel, training, and equipment) required for the conversions.

ARCTIC MULTI-DOMAIN TASK FORCE

45. Senator SULLIVAN. Secretary Wormuth and General McConville, it is my understanding that the Army will create an Arctic Multi-Domain Task Force (MDTF) in Alaska. It will consist of several units currently assigned to 1–25 and 4–25 in addition to newly assigned units. Which long-range precision fires systems will this unit field and will they undergo Arctic testing before fielding?

Secretary WORMUTH and General MCCONVILLE. The Army is currently exploring options for different capabilities to place within the planned MDTFs depending on location and mission. The options are being validated through testing and experimentation, which will inform the types of long-range fire precision systems the Army will station in MDTFs both within the continental United States and outside the continental United States.

46. Senator SULLIVAN. Secretary Wormuth and General McConville, it is my understanding that the Arctic MDTF will include long-range precision fires that the Army wants to operate along Alaska's vast coastline for extended periods of time to create anti-access/area denial networks. Is the Army considering how civilian and military infrastructure will impact Arctic Multi-Domain Task Force (MDTF) operations along Alaska's coastline?

Secretary WORMUTH and General MCCONVILLE. The Army is exploring multiple force structure options to support the newly published Arctic Strategy. As those options are developed, we will consider the impacts from civilian and military infrastructure.

ARMY MULTI-DOMAIN TRANSFORMATION

47. Senator SULLIVAN. Secretary Wormuth and General McConville, the "Army Multi-Domain Transformation" document calls for long-range, land-based missiles on West Pacific islands to threaten targets deep within China's Anti-Access/Area Denial (A2/AD) defenses. That document also emphasizes the Army's role as an inside force, operating within adversary A2/AD networks. The fiscal year 2022 budget indicates the Army either failed to establish a compelling narrative about its useful-

ness in the Pacific or the Department of Defense did not find the Army's INDOPACOM plans credible. If defense budget cuts continue, how will the Army modernize to deter and defeat potential peer or near-peer adversaries while simultaneously maintaining readiness levels for inside forces?

Secretary WORMUTH and General MCCONVILLE. Faced with potential downward budgetary pressure, the Army must strike a difficult balance between meeting the demands of current operations while preparing for the future. To accomplish this, the Army can and will achieve the balance between People, Readiness, and Modernization needed to field the future force. We will use the Regionally Aligned Readiness and Modernization Model (ReARMM) to align units regionally to meet current Joint Force demand while preparing the force for the future. We must satisfy operational demand while modernizing for pacing and emergent threats. Detailed modeling and simulation has shown us that we must modernize or risk defeat in the future against near peer adversaries. We have cut our legacy and enduring programs significantly in order to fund our Modernization Priorities, accepting as much risk as possible in those programs. Future budget reductions will likely cause the Army to reduce funding to our top six Army modernization priorities to protect our People First initiatives and to protect Readiness. The Army will pursue a resourcing strategy, which is fully aligned with the national security strategic guidance, and we will provide the very best Army we can within our budget.

To do this, we must sustain the readiness that we have worked so hard to rebuild over the past several years, while reprioritizing funding to invest in critical capabilities. Long Range Precision Fires (LRPF) remains the Army's number one modernization priority. LRPF is absolutely critical to defeating China's Anti-Access/Areal Denial capability. To deter and win, we must also be capable and prepared for the close fight with capabilities such as Future Vertical Lift and the best equipped Soldiers in the world. The Joint Force and INDOPACOM have asked for, and will depend on, Army LRPF in support of their operational plans, along with other capabilities such as logistics, intelligence and prepositions stocks.

ANTI-SHIP MISSILES

48. Senator SULLIVAN. Secretary Wormuth and General McConville, the "Army Multi-Domain Transformation" document calls for long-range, land-based missiles on West Pacific islands to threaten targets deep within China's Anti-Access/Area Denial (A2/AD) defenses. If these capabilities include anti-ship missiles, how is the Army coordinating with the Navy and Marine Corps to execute sea denial missions?

Secretary WORMUTH and General MCCONVILLE. The Army's on-going coordination with the USN and USMC includes training, capability development, and mission planning. The Army coordinates for Soldier training on

USN weapon systems in support of the Long Range Fires Battalions. This training includes firing procedures, command and control, and missile handling.

Army coordination with the USMC includes USN weapons training, sharing weapon capability development, and refining digital C2 and communications common to both services. Additionally, the Army and USMC hold a semi-annual programmatic Army/Marine Corps Board that focuses on capability development within the long range fires portfolio to ensure we were maximizing resources and reducing redundancies.

AIR DEFENSE

49. Senator SULLIVAN. Secretary Wormuth and General McConville, how is the Army coordinating with the Navy, Marine Corps, and Air Force to deploy integrated air defense capabilities to protect the Joint Force from China and Russia's prodigious land-attack and anti-ship missile arsenals?

Secretary WORMUTH and General MCCONVILLE. Integrated Air and Missile Defense (IAMD) is an inherently joint mission, which requires a number of offensive and defensive capabilities from all services to effectively protect the Joint Force and enable our freedom of action. At the theater level, the Army directly supports Regional Combatant Commanders in carrying out their responsibility to synchronize and coordinate the planning, resourcing, and execution of IAMD operations with other sister-service elements. The Army does this through its regionally aligned Army Air and Missile Defense Commands (AAMDC). Specific to China and Russia, the 94th AAMDC is located in, and supports, the INDOPACOM theater and the 10th AAMDC is located in, and supports, the European theater. Additionally, the 32nd AAMDC is stationed in Texas, but it maintains a forward deployed element in support of CENTCOM's IAMD operations. The 263rd AAMDC is located in South Carolina and directly supports NORTHCOM and the homeland IAMD mission.

In addition to this operationally focused support to the Combatant Commanders, the Army provides strategic IAMD planning and coordination support in collaboration with our sister-services. Specifically, the Army is directly involved in IAMD planning, which includes past and current missile defense reviews, multi-service strategies for air base defense against missile threats, the defense of Guam, and the development of joint service IAMD doctrine, as well as multi-service IAMD tactics, techniques, and procedures.

The Army's highest AMD modernization priority is the Integrated Air and Missile Defense Battle Command System (IBCS). IBCS will provide the Army with the necessary mission command network to integrate not only the Army's IAMD system, but also the other Service's IAMD capabilities to enable more efficient and effective target detection and prosecution. IBCS IAMD interoperability with the Joint Services is a key component of the Joint All-Domain Command and Control (JADC2) experiments Project Convergence 21, the Orange Flag demonstration series, and other JADC2 events.

LOGISTICS

50. Senator SULLIVAN. Secretary Wormuth and General McConville, if competition with China turns into conflict, how is the Army planning to move its inside forces within Chinese A2/AD networks?

Secretary WORMUTH and General MCCONVILLE. The Army and the Joint Force must successfully maneuver across all domains inside the first island chain to win critical first battles in a conflict with the People's Republic of China (PRC). In competition, Army forces postured inside the first island chain are well within the PRC's Anti-Access/Area Denial (A2/AD) and long-range fires zones. Army Forces are key to enabling distributed networks and protecting the Joint Force during crisis and conflict through Integrated Air and Missile Defense and other means. Army forces, distributed and dispersed across the region, pose multiple dilemmas to the PRC. Distributed Army forces also provide options to the Joint Force Commander to increase the speed of decision making and the physical range of when and where to apply military force across the theater.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

AMMUNITION FACILITIES

51. Senator BLACKBURN. General McConville, what specific resources or authorities will it require to fully modernize Holston Army Ammunition Plant so that its outdated infrastructure no longer represents a single point of failure in the defense enterprise?

General MCCONVILLE. The Army is currently developing its resourcing strategy beyond fiscal year 2022 as part of a holistic 15-year Organic Industrial Base (OIB) Modernization Strategy that will encompass its 23 government-owned and government-operated (GOGO) and government-owned and contractor-operated (GOCO) depots, arsenals, and ammunition facilities. We anticipate the initial results of our analysis to be available next year.

This strategy is critical to preparing the OIB to support multi-domain operations in large scale combat operations, and it will inform the fiscal year 2023 budget request to include the necessary infrastructure investments required to modernize Holston Army Ammunition Plant over the Future Years Defense Plan FYDP. In fiscal year 2020 and fiscal year 2021, the Army received approximately $600 million to continue safety improvements, RDX expansion, infrastructure upgrades, environmental improvements, and cybersecurity solutions. Continuing to modernize Holston will reduce the likelihood of production interruptions or catastrophic failures, and improve worker safety.

ARMY END STRENGTH

52. Senator BLACKBURN. General McConville, the Army's fiscal year 2022 end strength proposal reduces the collective force by approximately 1,700 Soldiers. What are your primary concerns looking at the operational commitments you are simultaneously being asked to source?

General MCCONVILLE. My primary concerns are operational tempo (dwell and deployment) on our Soldiers and units as well as having the necessary structure to stand up new organizations like the Multi-Domain Task Forces (MDTF).

53. Senator BLACKBURN. General McConville, what sort of unforeseen impacts and risk associated with end strength reduction are you trying to anticipate? (i.e. safety, retention, family stress, and force preservation issues)

General MCCONVILLE. End strength reductions will limit the Army's ability to meet unforecasted requirements, while maintaining modernization timelines, planned rotational deployments, and reorganizing for multi-domain and large scale combat after two decades of war against Violent Extremist

Organizations (VEO's). In fiscal year 2021, the Army responded to multiple unforecasted requirements to include hurricane recovery, wildfires, the treatment of COVID patients and administration of COVID vaccines, the security of the Southwest border, efforts to counter Iranian aggression, the support of civilian law enforcement in the National Capital Region, and the support of the Afghanistan retrograde. We reasonably expect fiscal year 2022 unforecasted emergent requirements to remain commensurate with fiscal year 2021. Reduced Army end strength limits our capacity to respond to emergencies while transforming without trading critical aspects of modernization or other planned activities in support of the Combatant Commands.

FUTURE CAPABILITIES

54. Senator BLACKBURN. General McConville, in October 2019 you affirmed your support for Admiral Davidson's request for two Multi-Domain Task Forces (MDTFs) in INDOPACOM. Is that still a priority, and if so, how long do you anticipate it will take to source Admiral Aquilino with the additional MDTF he needs?

General MCCONVILLE. The Army continues reviewing options for additional MDTFs beyond the second deployment recently announced for Europe; these options include added support for USINDOPACOM. The third MDTF, if we can resource it, is earmarked for the Pacific region. We are working with INDOPACOM and U.S. Army Pacific to determine location and timing; however, given competing demands and available force structure, the Army has not yet made those decisions. If we do, we anticipate having the ability to activate an additional MDTF as early as fiscal year 2023.

55. Senator BLACKBURN. General McConville, would a higher topline increase the speed at which you could resource and deploy the additional MDTF to INDOPACOM?

General MCCONVILLE. A topline increase in fiscal year 2022 could enable the Army to increase the speed at which we resource and deploy the MDTF to an extent. Resourcing the MDTF is the number one priority on the Army's Unfunded Requirements List for fiscal year 2022. Funding the $2.5 million unfunded requirement would allow the MDTF to take full advantage of advances in digital warfare, autonomous robotics, and artificial intelligence to maintain digital overmatch against near-peer adversaries and non-state actors by shortening kill chains, providing a persistent capability, and enabling freedom of maneuver. It would provide the MDTF the ability to securely deploy computing resources on-demand to networked users around the globe.

Additional topline resourcing would not likely increase the speed at which we are developing other capabilities critical to the MDTF, such as Long Range Hypersonic Weapons, the Mid-Range Capability or the Precision Strike Missile, nor would it increase the speed at which we can build and train on them.

QUESTIONS SUBMITTED BY SENATOR JOSH HAWLEY

ARMY HOUSING AT FORT LEONARD WOOD

56. Senator HAWLEY. General McConville, one of our priorities in Missouri is ensuring that all of our servicemembers enjoy the best quality of life possible. One of the challenges we're facing is that many of the homes at Fort Leonard Wood in Missouri were built in the 1960s and are long overdue for replacement. What is the Army doing to facilitate replacements for these homes, so we can ensure all servicemembers in Missouri can continue to enjoy the highest standards of living?

General MCCONVILLE. The Army's number one priority is our people, and we are committed to providing a quality of life that allows Soldiers and their Families to thrive. Privatization of the family housing at Fort Leonard Wood occurred in March 2005; Balfour Beatty Communities (BBC) is the Managing Member of the Fort Leonard Wood privatized housing company. Sharing your concern about the age of the housing inventory, the Army has conceptually approved BBC's five-year development plan for Fort Leonard Wood that includes the demolition and replacement

with new construction of 59 legacy (built in 1957–1962) family housing units using existing project funds. In addition, the Army is supporting BBC's endeavor to obtain additional private sector financing to fund additional new development at top priority locations, including Fort Leonard Wood. The additional financing is anticipated in Fall 2021. These additional funds are expected to fund the demolition of more legacy housing units and their replacement with new construction housing in numbers that are still being determined at Fort Leonard Wood and other top priority locations.

ARMY'S ROLE IN THE INDO-PACIFIC THEATER

57. Senator HAWLEY. General McConville, combat-credible forward postured forces in the Indo-Pacific are critical to deterring Chinese aggression. How do you see the posture investments requested in INDOPACOM's 1251 report supporting the Army's efforts to bolster its own forward deterrent posture in the Pacific?

General MCCONVILLE. The Army is focused on improving and expanding our rotational force posture inside the first island chain to deter People's Republic of China (PRC) military aggression by denying their ability to conduct military operations at will. Improved posture will result in a stronger deterrent capability, which will also support a rapid transition to crisis or conflict. Our posture investments are in support of the Joint Force and aligned with United States Indo-Pacific Command's (USINDOPACOM's) 1251 Report.

As an example, USINDOPACOM's request of land-based anti-ship capabilities will increase conventional deterrence of the PRC. The Army's additional posture priorities within the first and second island chains support this requirement and seek to establish a forward Joint and Combined defense in depth. The Army's dispersed and innovative posture efforts provide support in accordance with the USINDOPACOM 1251 Report, and we will continue to pursue a forward deterrent posture as opportunities arise through continuous engagement.

58. Senator HAWLEY. General McConville, how does the Army plan to use partnership-building exercises such as Pacific Defender and Pacific Pathways to strengthen our relationships and access across the Indo-Pacific region, and how are you thinking about building on these initiatives in the future?

General MCCONVILLE. Partnership-building exercises strengthen relationships, increase interoperability, and contribute to a Land Power Network for collective defense and security. Through exercises, operations, and activities, the Army expands access, presence, and influence that contribute to the development of lasting cooperation and codified agreements.

These agreements serve several functions. First, they demonstrate the steadfast commitment of the U.S. to a free and open Indo-Pacific. Second, they allow the United States to actively compete in the region during peacetime, countering People's Republic of China (PRC) malign activities and coercion. Third, they enable incremental progress toward long-term agreements that guarantee U.S. access to key terrain during crisis and contingency. For additional context, in fiscal year 2022 and beyond, "Indo-Pacific Pathways" is the new name that replaces "Pacific Defender" and "Pacific Pathways."

59. Senator HAWLEY. Secretary Wormuth and General McConville, President Biden said all United States Forces will be withdrawn from Afghanistan by September 1st. How will our departure from Afghanistan help the Army refocus attention and resources on the Indo-Pacific and China, in particular?

Secretary WORMUTH and General MCCONVILLE. The Army will remain committed to supporting the security of the United States Embassy in Kabul. Reduced operational demands will allow the Army to focus on a number of ongoing efforts to include Army force modernization initiatives and improvements to force readiness to better compete with China. This reduction will also increase the forces available for employment in the Indo-Pacific to compete against China or to shape an emergent crisis.

60. Senator HAWLEY. General McConville, the Army deploys an armor brigade to Europe every year to help deter Russian aggression. Outside of units already assigned to conduct partner exercises, should the Army consider deploying a Brigade Combat Team to the Indo-Pacific theater in the same fashion as EUCOM?

General MCCONVILLE. With the existing Army Immediate Response Force (IRF) construct as part of the Joint Contingency Response Force (CRF), there is potential for the Dynamic Force Employment of Army capabilities through Indo-Pacific Pathways. Like in Europe, a short episodic presence would reassure allies and dem-

onstrate the ability to project power at a time and place of our choosing. It would also provide the Army opportunities to learn from deploying a large Army element into a contested archipelagic environment, which would be very different from the past 20 years of deploying large Army forces into a continental, largely uncontested environment. For context, since 2015, the Army has deployed a Brigade Combat Team to South Korea annually.

61. Senator HAWLEY. General McConville, what message do you believe this would send the Chinese and our allies and partners in the region?

General MCCONVILLE. Deployment of a large ground combat force into the region would send a clear signal of U.S. resolve to ensure a free and open Indo-Pacific, as well as a willingness to defend our own interests and those of our allies and partners.

SEXUAL ASSAULT RESPONSE COORDINATORS

62. Senator HAWLEY. General McConville, Sexual Assault Response Coordinators are the first-line responders that victims of military sexual assault rely on for medical, legal, and other support. But the Fort Hood Independent Review Committee found that these professionals often lack the staffing, resources, and training they need not only to be effective for victims, but also to support one another and take care of themselves. Do you think improving recruitment, retention, education, and support for SARCs would help them to be as effective as possible?

General MCCONVILLE. The Army's Sexual Harassment/Assault Response and Prevention (SHARP) program includes 630 full-time Brigade-level/equivalent and installation SHARP professionals, 50 SHARP Program Managers, and four Assistant Program Managers across the Army enterprise. These professionals are some of the most highly-trained advocates in the Department of Defense. The Army has continued to make improvements to their recruitment, training, education, and support.

In terms of training and education, all full-time Army Sexual Assault Response Coordinators (SARCs) and Victim Advocates (VAs) must attend a 6-week resident SARC/VA Career Course at the U.S. Army SHARP Academy at Fort Leavenworth, KS. The Army SHARP Academy curriculum exceeds the minimum training requirement for victim advocacy set by the National Organization for Victim Assistance (NOVA) and fully prepares the SARCs and VAs for their roles and responsibilities. The curriculum includes competency-based assessments and training on self-care, a topic that is reinforced through continuous education and outreach activities.

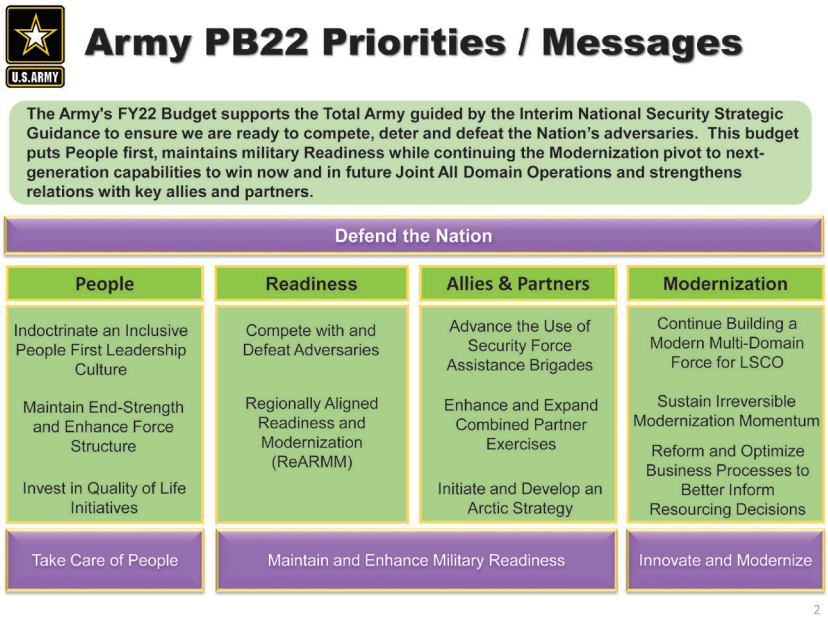
In order to enhance recruitment and retention of the most qualified individuals to serve in these sensitive positions, the Army published guidance in February of 2021 that included specific incentives for military personnel serving in SARC or VA positions. In addition, the Army is transitioning to a more centralized screening, selection, and assignment process for military personnel in full-time SHARP positions. This transition will enable improved benefits and career management similar to military Equal Opportunity Advisors.

Lastly, understanding these positions are potentially high strain and can result in vicarious trauma, the Army Resilience Directorate offers website training for self-care to personnel in this field. This training teaches personnel how to overcome some of these stresses they are exposed to while advocating for a victim of sexual harassment or sexual assault. In addition, during the annual Program Improvement Forum, SHARP professionals are provided training with techniques to better care for themselves, underscoring the importance of this necessary practice in providing advocacy to others.

APPENDIX

ARMY FISCAL YEAR 2022 BUDGET OVERVIEW





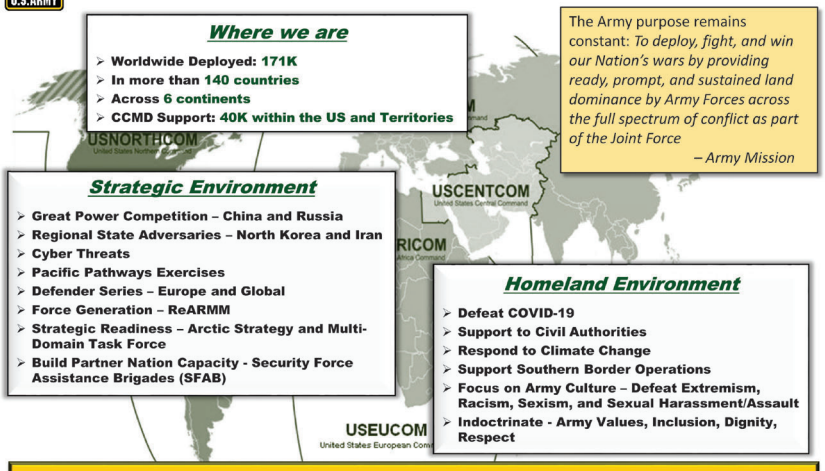
Defend the Nation

Where we are

- Worldwide Deployed: 171K
- In more than 140 countries
- Across 6 continents
- CCMD Support: 40K within the US and Territories

The Army purpose remains constant: *To deploy, fight, and win our Nation's wars by providing ready, prompt, and sustained land dominance by Army Forces across the full spectrum of conflict as part of the Joint Force*

– Army Mission



Strategic Environment

- Great Power Competition – China and Russia
- Regional State Adversaries – North Korea and Iran
- Cyber Threats
- Pacific Pathways Exercises
- Defender Series – Europe and Global
- Force Generation – ReARMM
- Strategic Readiness – Arctic Strategy and Multi-Domain Task Force
- Build Partner Nation Capacity - Security Force Assistance Brigades (SFAB)

Homeland Environment

- Defeat COVID-19
- Support to Civil Authorities
- Respond to Climate Change
- Support Southern Border Operations
- Focus on Army Culture – Defeat Extremism, Racism, Sexism, and Sexual Harassment/Assault
- Indoctrinate - Army Values, Inclusion, Dignity, Respect

"America's Army exists to protect the nation against all enemies foreign and domestic, and to preserve the peace."
- GEN James McConville, 40th U.S. Army Chief of Staff

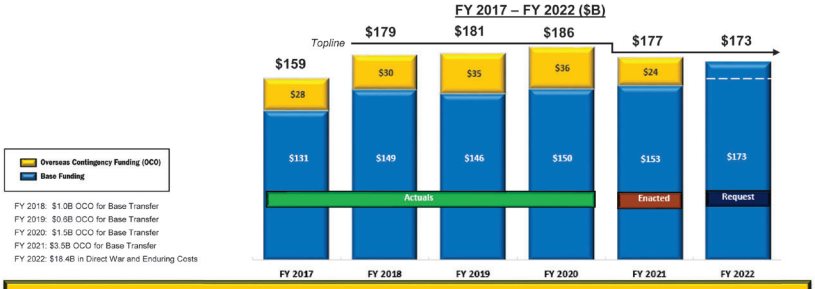
3

FY 2022 Army Request

- Army Budget: $173B
- Direct War and Enduring Costs Included within base budget

	($B)
Base	154.5
Direct War Costs	10.4
Enduring Costs	8.0

- FY 2022 Army budget is committed to sustaining readiness gains and continuing the Army's modernization efforts within its topline
- Over the last three years the Army internally resourced its modernization priorities



FY 2018: $1.0B OCO for Base Transfer
FY 2019: $0.6B OCO for Base Transfer
FY 2020: $1.5B OCO for Base Transfer
FY 2021: $3.5B OCO for Base Transfer
FY 2022: $18.4B in Direct War and Enduring Costs

Army Requires Timely, Adequate, Predictable & Sustained Funding

4

FY22 Budget Request

$B	FY20 Actuals	FY21 Enacted	FY22 Request
Military Personnel[1]	62.7	65.0	66.2
Operation and Maintenance[2]	75.8	66.2	65.5
Procurement/RDTE	37.8	38.3	34.1
Military Construction/Family Housing/BRAC	2.5	2.0	1.7
Other (ANC/CAMD/AWCF/ASFF/CTEF)[3]	7.3	5.1	5.5
Totals	**186.0[4]**	**176.6[5]**	**173.0[6]**

1: Includes Medicare Eligible Retirement Healthcare Fund
2: Includes Environmental Restoration Account (ERA) funding
3: Other Base: Chemical Agent and Munitions Destruction; Army Working Capital Fund; Arlington National Cemetery; Afghanistan Security Forces; and Counter-Islamic State of Iraq and Syria Train and Equip
4: Includes $1.2B CARES Act; $0.1B Emergency for disaster; $1.4B OCO for base; and $35.8B Direct and Enduring OCO
5: Includes $3.5B OCO for base; and $23.4B Direct and Enduring OCO
6: Includes $10.4B Direct War and $8.0B Enduring Costs

- The Army's topline funding decreased by 2.0% from the total FY21 Enacted Budget
- The FY22 base budget resources the Army to train, operate, and sustain the force
  - Military Personnel 1.8%▲
  - Operations and Maintenance 1.1%▼
  - Procurement/RDTE (RDA) 11.0%▼
  - MILCON 15.0%▼
  - Other (ANC/CAMD/AWCF/ASFF/CTEF) 7.8%▲

The budget reflects a refined training strategy, a continuation of the modernization pivot toward the development of Next-Generation Capabilities and a reduction in Direct War and Enduring Costs

5

Military End Strength

Component	FY20 Actuals	FY21 Enacted	FY22 Request
Regular Army	485,383	485,900	485,000
Army National Guard	336,129	336,500	336,000
Army Reserve	188,703	189,800	189,500
Totals	**1,010,215**	**1,012,200**	**1,010,500**



Soldiers conduct a Division pass and review at Fort Campbell

- Supports a Total Army end strength of 1,010,500 Soldiers
- The Army maintains readiness and develops Multi-Domain capabilities
- Maintains Active Guard Reserve (AGR) Soldiers who provide full-time support to and directly contribute to the readiness of Reserve Component units

6

Military Personnel

$B	FY20 Actuals	FY21 Enacted	FY22 Request
Regular Army	45.7	47.6	48.0
Army National Guard	8.9	8.9	9.1
Army Reserve	4.7	5.1	5.2
Medicare Eligible Retirement Health Care	3.3	3.5	3.9
Totals	62.7[1]	65.0[2]	66.2[3]

Numbers may not add due to rounding
1: Includes $3.0B in Direct and Enduring OCO
2: Includes $3.0B in Direct and Enduring OCO
3: Includes $0.3B in Direct War and $1.8B in Enduring Costs

Requested Rate Increases	Effective 1 Jan 2022
Basic Pay	2.7%
Basic Allowance for Housing	3.1%
Basic Allowance for Subsistence	2.3%



Summary
Request increases by $1.2B and supports a Total Force of 1,010,500 Soldiers. This request also include adjustments for pay raise, retirement compensation reform and recruiting and retention incentives



Rate Adjustments
Request includes a $2.0B increase supporting rate adjustments for basic pay, retired pay accrual, subsistence, and housing allowances



Strength Adjustments
Request includes a $0.8B decrease primarily due to a reduction of 6.6K mobilized Reserve Component Soldiers in support of Direct War and Enduring missions

7

Operation and Maintenance
(Regular Army)

$B	FY20 Actuals	FY21 Enacted	FY22 Request
Regular Army	65.1[1]	55.6[2]	54.6[3]

Numbers may not add due to rounding
1: Includes $1.5B in OCO for base; $23.5B in Direct and Enduring OCO
2: Includes $3.5B in OCO for base; $14.0 in Direct and Enduring OCO
3: Includes $5.1B in Direct War and $5.3B in Enduring Costs

People
- Increases Childcare to include the expansion of Army Fee Assistance Program
- Invests in the quality of life of Soldiers through the improvement of permanent party barracks
- Increases funding to field the Holistic Health and Fitness Program
- Resources 21st Century Talent Management System for the civilian workforce



Readiness
- Implements ReARMM
- Maintains: 31 Brigade Combat Teams, 5 Security Force Assistance Brigades, 11 Combat Aviation Brigades
- Resources 20 Combat Training Center (CTC) rotations, Home Station Training, and Flying Hours to meet Readiness Objectives
- Addresses Army Working Capital Fund cash
- Supports Allies and Partners with Security Force Assistance Brigade missions in the Pacific and African regions



Modernization
- Invests in the Army's multi-year campaign for Project Convergence
- Funds Advanced Manufacturing to support engineering design and the digital thread to drive maintenance readiness into the information age
- Supports Cloud Migration to MS-Office 365 and Cyberspace Security
- Improves Financial Operations and Systems on path to audit readiness

8

Operation and Maintenance
(Reserve Components)

$B	FY20 Actuals	FY21 Enacted	FY22 Request
Army National Guard (OMNG)	7.6[1]	7.4[3]	7.6[5]
Army Reserve (OMAR)	3.0[2]	2.9[4]	3.0[6]

Numbers may not add due to rounding

1: OMNG includes $43.0M in OCO for base funding for disaster relief
2: OMAR includes $45.5M in Enduring and Direct OCO, and $35.9M in CARES
3: OMNG includes $79.8M in Enduring and Direct OCO
4: OMAR includes $31.7M in Enduring and Direct OCO
5: OMNG includes $5.0M in Direct War and $71.8M in Enduring Costs
6: OMAR includes $28.8M in Enduring Costs

Operation and Maintenance, Army National Guard



- Funds 27 Brigade Combat Teams, eight Expeditionary Combat Aviation Brigades, one Security Force Assistance Brigade and one Cyber Brigade
- Resources 2 CTC rotations and funds Ground OPTEMPO to support Readiness Objectives
- Increases flying hour program from 6.7 to 6.9 hours
- Funds 26,690 Civilian FTEs (21,031 MILTECHs and 5,659 DACs)
- Resources facility sustainment model at 80% and base operations support at 90%



Operation and Maintenance, Army Reserve

- Funds 24 Geographic and Functional Commands, four Readiness Divisions, 947 USAR Facilities including three installations and two sub-installations
- Resources 8,101 early deployer Soldiers ready within 0-90 days
- Increases Air OPTEMPO flying hour program from 5.5 to 6.8 hours and funds Ground OPTEMPO at Readiness Objectives
- Provides funding for facility sustainment and modernization at or above 80%
- Resources critical installation services, operations, and support at or above 90%

Army Modernization

Transforming for Tomorrow

The Army will transform into a multi-domain ready force by 2035 in order to meet its enduring responsibility, as part of the Joint Force, to provide for the defense of the United States and retain its positon as the globally dominant land power

Continued focus on 8 CFTs and 6 Modernization Priorities

1. Long Range Precision Fires*
2. Next Generation Combat Vehicle*
3. Future Vertical Lift*
4. Network*
5. Assured Positioning, Navigation, and Timing
6. Air and Missile Defense*
7. Soldier Lethality*
8. Synthetic Training Environment

* Modernization Priority

Maintaining our Priorities and Generating Momentum

- Continues to pursue the "Big Six" material modernization priorities announced in 2018 and committed to seeing them through completion
- Army Futures Command (AFC) provides unprecedented unity of effort across the modernization enterprise

Achieving Joint All Domain Operations

- WayPoint 2028 / AimPoint 2035
- Cross-functional Teams (CFT) bring together stakeholders to develop requirements in support of Joint All Domain Operations ensuring the best developing technologies can be rapidly delivered to the force
- Rapid prototyping and initial equipping of strategically important capabilities is performed by Rapid Capabilities and Critical Technologies Office (RCCTO) to meet commanders' warfighting needs
- Key enablers of CFT signature efforts play a critical role in delivering new capabilities to the warfighter

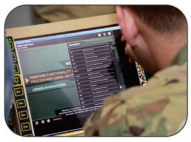
The Army Modernization Strategy describes how the Army will support Joint All Domain Operations to deter and prevail as we compete short of conflict, and fight and win if deterrence fails

Research, Development, and Acquisition (RDA) Summary

$B	FY20 Actuals	FY21 Enacted	FY22 Request
RDT&E	12.7[1]	14.1[3]	12.8[5]
Procurement	25.0[2]	24.1[4]	21.3[6]
Totals	**37.8**	**38.3**	**34.1**

Numbers may not add due to rounding

1: Includes $0.2B in Direct and Enduring OCO; $1.0B in Congressional Adds
2: Includes $3.6B in Direct and Enduring OCO
3: Includes $0.2B in Direct and Enduring OCO; $1.4B in Congressional Adds
4: Includes $2.4B in Direct and Enduring OCO
5: Includes $0.1B in Direct War and $0.04B in Enduring Costs
6: Includes $1.0B in Direct War and $0.7B in Enduring Costs



Soldier using a Joint Battle Command-Platform System

People

Soldier focused development; frequent touch points and hands-on experimentation aimed at rapidly delivering war-fighting capabilities

Readiness

Provide sustainable, Soldier-ready systems, in sufficient quantity to overmatch potential adversaries with speed, range, connectivity and adaptability in multiple operational environments



A combat engineer tests the capabilities of the Talon IV

Modernization

Investment in the Army's Signature Efforts (31+4) delivers next-generation technology, enhanced situational awareness, improved command and control and increased lethality to Soldiers and formations in the Joint Multi-domain capable force

RDT&E Summary

$M	FY20 Actuals	FY21 Enacted	FY22 Request
Basic Research	557	552	473
Applied Research	1,228	1,519	914
Advanced Tech Dev.	152	1,940	1,297
S&T Subtotal	**3,305**[1]	**4,011**[2]	**2,684**
Demonstrative/Validation	2,895	3,577	3,806
Engineering Manufacturing	3,072	2,948	3,392
Testing & Management	1,760	1,834	1,417
Operational System	1,810	1,717	1,381
Software and Digital	0	56	119
Non S&T Subtotal	**9,538**	**10,133**	**10,115**
Totals	**12,843**	**14,145**	**12,800**

Numbers may not add due to rounding

1: Includes $0.2B in Direct and Enduring Costs; $1.0B in Congressional Adds
2: Includes $3.6B in Direct and Enduring Costs; $1.4B in Congressional Adds



Hypersonic Missile Test

Transforming for Tomorrow:

- Aligns 74% of S&T funding to the Army's six Modernization Priorities to deliver concepts and capabilities at the Speed of Innovation
- Funds modernization of Long Range Hypersonic Missile, Mid-Range Capability Missile and Future Vertical Lift to enhance our competitive advantage
- Continues development of Lower Tier Air and Missile Defense and critical capabilities to support the modernization strategy in order to build a more lethal force

* This slide has been updated and dollar amounts from original 28MAY brief have changed

Procurement Summary

$B	FY20 Actuals	FY21 Enacted	FY22 Request
Aircraft	4.4	4.1	2.8
Missiles	4.3	4.0	3.6
Weapons & Tracked Combat Vehicles	4.9	3.6	3.9
Ammunition	2.7	2.9	2.2
Other Procurement	8.6	9.5	8.9
Totals	**25.0**[1]	**24.1**[2]	**21.3**[3]

Numbers may not add due to rounding

1: Includes $3.6B in Direct and Enduring Costs
2: Includes $2.5B in Direct and Enduring Costs
3: Includes $2.0B in Direct and Enduring Costs



Soldier wearing IVAS

Equipping for Today and Investing for Tomorrow:

- UH-60 Blackhawk, AH-64 Apache Remanufacture and CH-47 Helicopter aircraft
- Select munitions: Guided Multiple Launch Rocket System (GMLRS), Precision Strike Missile (PrSM) and Missile Segment Enhanced (MSE) Missile and conventional munitions
- Abrams Upgrade, Armored Multi Purpose Vehicle (AMPV), Bradley Program (MOD), Stryker Upgrade, Paladin Integrated Management (PIM) and the production of LRIP Mobile Protected Firepower systems
- Stryker Upgrades (mobility and lethality enhancements)
- Army network modernization
- Army Integrated Air and Missile Defense (AIAMD) Battle Command System and Lower Tier Air Missile Defense System (LTAMDS)

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Select Procurement Quantities

Programs (Quantities)	FY21 Enacted	FY22 Request
Stryker Upgrade	254	187
Abrams Upgrade	102	70
Guided MLRS Rocket (GMLRS)	5,796	5,886
Integrated Visual Augmentation System	26,304	29,237
Missile Segment Enhanced (MSE)	146	180
UH-60M Black Hawk	42	24
AH-64E Apache Remanufacture	50	30
Paladin Integrated Management (PIM)	31	25
Mobile Short-Range Air Defense System	59	37
Precision Strike Missile (PrSM)	30	110
CH-47G Chinook	12	6
Next Generation Squad Weapon	3,983	12,217



Apache



Black Hawk



Next Gen Squad Weapon



GMLRS



IVAS



M-SHORAD



Abrams



Paladin

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Facilities

$B	FY20 Actuals	FY21 Enacted	FY22 Request
Military Construction	1.9[1]	1.4[2]	1.2[3]
Army Family Housing	0.5	0.5	0.5
Base Realignment and Closure (BRAC)	0.1	0.1	0.1
Totals	**2.5**	**2.0**	**1.8**

Numbers may not add due to rounding

1: Includes $69.3M in funding for disaster relief; $112.0M in Enduring and Direct OCO
2: Includes $16.1M in Enduring and Direct
3: Includes $121.3M in Enduring Costs

Military Construction

These projects recapitalize failing facilities and build new facilities that increase Readiness across all three components

- Regular Army: 15 projects in nine states and OCONUS
- Army National Guard: 12 projects in ten states and territories
- Army Reserve: 3 projects in three states

Family Housing

Housing operations funds support U.S. and overseas Army Family Housing operation and maintenance, leases and construction

BRAC

BRAC funds support environmental remediation actions at sites closed during prior BRAC rounds



Fort McCoy Transient Training Barracks construction project

Other Accounts

$B	FY20 Actuals	FY21 Enacted	FY22 Request
Arlington National Cemetery	0.1	0.1	0.2
Chemical Agent and Munitions Destruction	1.0	1.0	1.1
Army Working Capital Fund	0.8[1]	0.2[2]	0.4[3]
Totals	**1.9**	**1.3**	**1.7**

Numbers may not add due to rounding

1: Includes $20.8M in Enduring and Direct OCO
2: Includes $20.1M in Enduring and Direct OCO
3: Includes $7.1M in Enduring Costs



A Tomb Sentinel of the 3rd U.S. Infantry Regiment (The Old Guard) braves winter conditions while on his post.

Cemeterial Expenses, Army (Arlington National Cemetery)

- Provides for operation, maintenance, infrastructure revitalization and construction at Arlington National Cemetery and the Soldiers' and Airmen's Home National Cemetery in Washington, D.C. The request includes $141M to support the Southern Expansion construction project

Chemical Agent and Munitions Destruction (DoD Program)

- Provides for destruction of U.S. inventory of lethal chemical agents and munitions as outlined in the Chemical Weapons Convention
- Chemical Agent Destruction continues at Blue Grass Army Depot, Kentucky and at Pilot Plants, Pueblo, Colorado

Army Working Capital Fund

- Provides a $323M cash infusion to stabilize the cash balance
- Sustains industrial base equipment required for mobilization
- Provides for the acquisition of secondary items for Army Prepositioned Stocks

Direct War & Enduring Costs

$M	FY20 Actuals	FY21 Enacted	FY22 Request
Military Personnel (MILPERS)	2,981	2,977	2,134
Operations & Maintenance (O&M)	23,516	14,042	10,552
Procurement (PROC)	3,573	2,436	1,639
Research, Development, Test and Evaluation (RDT&E)	211	176	110
Military Construction, Army (MCA)	112	16	121
Army Working Capital Fund (AWCF)	21	20	7
Subtotal	30,414	19,667	14,563
Counter-Islamic State of Iraq and Syria Train and Equip Fund	1,195	710	522
Afghanistan Security Forces Fund	4,200	3,048	3,328
Pass Through Accounts	5,395	3,758	3,850
Totals	35,809	23,425	18,413

Numbers may not add due to rounding

FY22 Direct War and Enduring Costs are included in the base budget

Military Personnel: FY22 decrease includes a $0.8B reduction as a result of a 6.6K decrease in operation strength levels

Operation & Maintenance: FY22 decrease includes:

- Direct Operation FREEDOM'S SENTINEL (Afghanistan) and Operation INHERENT RESOLVE (Iraq) decrease of $3.2B as a result of the force structure reduction
- European Deterrence Initiative (EDI): Decreases funding of $0.2B due to change from European Defender to Global Defender

Research, Development & Acquisition: FY22 decrease includes reduced requirement for replacement battle losses, ammunition replenishment and other theater specific equipment needs

Afghanistan Security Forces Fund: FY22 increase includes anticipated operational requirements to sustain the security forces

Army Reform

$M	FY20	FY21	FY22
Business/Policy Improvements	456	561	328
Better Alignment of Resources	718	1,500	1,203
Divestment/Eliminations	2,469	299	48
Totals	3,643	2,360	1,579

Numbers may not add due to rounding

- Three years of "Night Court"/Deep Dives enabled the Army to internally resource funds for modernization priorities
- The Army continues its aggressive reforms to align resources to the Army's People and Modernization Strategies while simultaneously maintaining readiness
- In FY22 reduced or delayed 37 programs including: ABRAMS, DCGS-A , AMPV, HERCULES, Family of Weapon Sights – Crew Served (FWS-CS), Joint Assault Bridge
- Following recommendations from the Fort Hood Independent Review, the Army is reforming the Criminal Investigation command structure and the process of handling special victim cases
- The Army will enter its 4th year of full financial statement audit and continues to build upon the gains since FY19

Army Divestment
(Elimination Only)

FY20 Divestment: -$4.2B (FY20-24): Army Eliminated 93 programs

- Enhanced Container Handling Units, Heavy Expanded Mobility Tactical Truck, Tactical Vehicle modifications within the Mine-Resistant Ambush Protected family of vehicles

FY21 Divestment: -$3.1B in FY21 (FY21-25): Army Eliminated 41 programs

- Mobile Intermediate Range Missile (MIRM), Advanced Precision Kill Weapons System, Enhanced Heavy Equipment Transporter, Combat Kitchen

FY22 Divestment: -$47.8M in FY22: Army Eliminated 7 programs

Divestment ($K)	FY22
Aviators Night Vision Imaging System (ANVIS)	1,838
Hellfire Missile Launcher	8,982
Joint Technology Center System Integration (JTICS)	4,323
Launcher, 2.75 Rocket	2,489
Lightweight Counter Mortar Radar (LCMR)	9,284
Multi-Function Electronic Warfare (MFEW)	12,257
Spider Networked Munition System	8,639
Totals	47,812

The Army has internally resourced its Modernization Strategy through divesting of lower priority requirements.

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Summary

- The Army is resourced to compete globally and fight and win the Nation's wars in an all-domain environment in support of the Joint Force – focus on INDOPACOM and EUCOM
- People are the Army's most important weapon system
- The Army continues to support our Soldiers for Life while also improving the quality of life for our Soldiers, Families, and Civilians
- The Regionally Aligned Readiness Modernization Model (ReARMM) sustains readiness and facilitates modernization
- The Army continues to transform, focused on its six modernization priorities
- To achieve Aimpoint by 2035, the Army will modernize how we fight, what we fight with and who we are
- Alliances and partnerships are a source of military strength
- Timely, adequate, predictable and sustainable funding needed to support Army priorities
- Your Army is Ready Now and in the Future

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The FY22 Army Budget Request

Our Army Serves to Defend the Nation

Army Strong; People First; Winning Matters

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FOR ADDITIONAL INFORMATION

This overview provides the highlights of the Army's Budget submitted to the Congress as part of the FY 2022 President's Budget.
All Army budget materials are available to the public on the Assistant Secretary of the Army (Financial Management and Comptroller) website.

https://www.asafm.army.mil/Budget-Materials/

Army Strong; People First; Winning Matters!
http://www.army.mil

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ERRATA SHEET

Slide 12 Updated 1730, 28 May 2021: This slide has been updated and dollar amounts from original 28MAY brief have changed

DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, JUNE 17, 2021

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 Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Warren, Manchin, Duckworth, Rosen, Kelly, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Cramer, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. The Committee meets today to receive testimony on the plans and programs of the Department of the Air Force in review of the fiscal year 2022 President's Defense Budget Request.

I would like to welcome our witnesses, Mr. John Roth, Acting Secretary of the Air Force; General Charles Brown, Chief of Staff of the Air Force; and General John Raymond, Chief of Space Operations. We are grateful to you for your service, and the service of all the men and women of the Air Force and Space Force, and to their families for their continued support.

I want to note that is the first appearance of both General Brown and General Raymond at an Air Force posture hearing. We all look forward to working with you as leaders of the Air Force and the Space Force.

President Biden's defense budget request for fiscal year 2022 includes approximately $173.3 billion in funding for the Department of the Air Force, a 3.26 percent increase from the fiscal year 2021 enacted budget. In preparing this budget request, the Air Force faced difficult decisions in balancing the need to modernize and keep technological advantage over near-peer competitors against the need to support ongoing operations around the world. The budget request before us tries to maintain that balance by increasing funding to address readiness concerns while also funding tech-

nologies for the future fight and modernizing our strategic deterrent capability.

This year, the Air Force is again proposing to retire and realign a number of aircraft systems to free up resources for implementing General Brown's strategic vision of "Accelerate Change or Lose." General Brown, I am interested in hearing more this morning on the programs that have received increased emphasis under your vision.

The budget request would also reduce or alter the force structure for A–10's, F–16's, F–15's, C–130's, KC–135's, KC–10's, Joint Surveillance and Target Attack Radar System (JSTARS) aircraft, and Global Hawk remotely piloted aircraft. Any Air Force proposal of this sort deserves our careful consideration. I hope the witnesses will provide the Committee with the reasoning for the proposed retirements and realignments within this budget request and assure us that any decisions are well thought-out. I also recognize that Congress has made divestment decisions difficult at times.

I am also interested in hearing about your continued efforts to improve shortfalls within the remotely piloted aircraft operator community, and how the Air Force has addressed shortfalls within the larger pilot community and maintenance personnel.

One of the primary reasons Congress established the Space Force was to consolidate the numerous space activities in the Department of Defense (DOD). General Raymond, this is your first posture hearing, but you are a familiar face to this Committee. I would like to know how you are growing the Space Force and normalizing operations within the larger Department of Defense, including progress on the merging of the Space Development Agency into the Space Force by October 1, 2022. With regard to space warfighting capabilities, I will also want to know how you are progressing in your role as the lead force design architect for the Defense Department's satellite constellations.

Finally, now that the Space Force is standing up, it is important to present a trained force with material capabilities to the combatant commands. One of the capabilities for the combatant commands now under discussion is tactical space intelligence, surveillance and reconnaissance (ISR). This is a new operating domain for DOD, and I would ask the witnesses to discuss what resources they believe are needed to ensure its success.

Acting Secretary Roth, General Brown, and General Raymond, thank you again for appearing before our Committee and I look forward to your testimony.

Now let me turn to the Ranking Member, Senator Inhofe.

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Thank you, Mr. Chairman. Secretary Ross, General Brown, and General Raymond, thank you for being here today and for all of your work.

The current National Defense Strategy directs our Nation's military to be prepared to deter and, if necessary, defeat our peer adversaries, including Russia and China. For the Air Force and the Space Force to meet that requirement they have got to properly man and train and equip to win both air and space. Given this budget, I fear this is going to be a very difficult, if not an impos-

sible thing to do. I think we are going to have to improve upon this budget.

At the end of the Obama administration, the Air Force was at a historic low in readiness and size. Less than 10 percent of combat squadrons were ready to deploy, and even fewer were prepared for a peer fight.

We began to improve readiness over the past 4 years and started to really get after the modernization concern that we all have, and I am concerned that with this year's budget it does not look like we are going to have the resources to get these things done.

In previous administrations—and I am talking about Barrett, Wilson, Goldfein—the Air Force leadership, they had told us that the Department of the Air Force was too small, too old to do what the Nation asked to have done. Almost half of our aircraft fleet is beyond its service life. Our satellite programs were built for peacetime. Now that was all from the previous administration.

China and Russia—just this last week we had General Milley, who said that China and Russia combined are already spending more to modernize their force than we do, and it shows. China will have more stealth fighters than we will in the Western Pacific by 2025. So we are getting reports now that do not look good at all.

All the independent studies show that the Air Force needs to grow and modernize. This budget does not do either one. Procurement actually decreases by almost 15 percent. We keep divesting but we do not turn around and follow with investments. Nearly all of these bad choices were caused by a budget that cuts the defense instead of the achieved 3 to 5 percent we have been talking about now since 2018. It just does not do that.

So our airmen, our space guardians deserve better than that, and we look forward to getting our questions responded to and to getting some ideas from the experts who are here today as to how we are going to handle these shortfalls that we believe we have.

Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Inhofe, and again, gentlemen, welcome to the Committee. First let me thank Secretary Roth for stepping into the breach and continuing to move forward with the Department of the Air Force. Thank you sir very much.

General Raymond, Congress created the Space Force in the Fiscal Year 2020 National Defense Authorization Act (NDAA) with the intent to consolidate space activities within the Department of Defense. What role should the combatant commands play in designing the elements of Space Force capability? What contact or communication or coordination do you envision?

General RAYMOND. Yes, sir. We have a very close, as you would expect, a very close partnership with the combatant command. The combatant command is the joint requirements—they come up with the joint requirements. Our job then is to organize, train, and equip and provide capabilities to meet those joint requirements. But the relationship that we enjoy today is seamless.

Chairman REED. Do you believe that the warfighter should have the ability to set the force design or architecture of DOD satellite constellations?

General RAYMOND. I think how we go about meeting those requirements is a service function, and, in fact, that is one of the reasons why I think we established the Space Force. This Committee and other committees have long said that there were 65 different organizations that had a role in space acquisition, and I think there are 30-something different organizations that had a role in force design.

My view is that is one of the main reasons why we established the Space Force, to drive unity of effort across the Department. We work very closely to meet those joint requirements, but the force design work is service business, and we are already making great strides towards that end.

Chairman REED. Well, thank you very much, and not only is my time expired but my timing has been off considerably.

Senator INHOFE. I did not say anything.

Chairman REED. You gentlemen should have the privilege of making your opening statements. So let me recognize the Secretary for his opening statement, and then General Brown and General Raymond. Apologies to all my colleagues.

STATEMENT OF THE HONORABLE JOHN P. ROTH, ACTING SECRETARY OF THE AIR FORCE

Mr. ROTH. Thank you very much, Chairman Reed, Ranking Member Inhofe, and the Members of the Committee. It is, in fact, a pleasure to be here today.

I am also honored to have General Brown and General Raymond join me in representing the nearly 700,000 airmen and guardians that defend our Nation. We are thankful for your consistent and persistent support over the years, which has enabled us build the world's greatest air and space force.

As an integrated force, our airmen and guardians stand ready, willing, and able to meet responsibilities to our Nation and continue defending the high ground. From 300 feet to 300 miles off the ground, we protect the Homeland, we project power, and we defend democracy.

The long-term strategic competition with China and Russia demands we focus on the capabilities we need to invest in today in order to win tomorrow. Our Nation's competitive strategic advantage relies on air and space superiority, which is underpinned by rapid technological advancement and the extension of space as a warfighting domain.

In line with Secretary Austin's priorities to defend the Nation, take care of our people, and succeed through teamwork, our fiscal year 2022 budget is the beginning of a journey to the air and space forces of 2030. It builds the capabilities that allow the Department to modernize while continuing to meet national security objectives and defend the high ground.

Specifically, we are committed to investing in: (1) empowering airmen and guardians, (2) capability-focused modernization, (3) connecting us to the Joint Force, and (4) expanding partnerships.

First, our airmen and guardians remain the heart of our ability to deter and, if necessary, defeat our competitors. We are transforming our talent management systems to ensure we develop and train leaders with the competence, character, and skills required to

win high-end fights, and we remain devoted to recruiting and retaining a diverse corps of multi-capable, innovative talent to outmaneuver our adversaries, today and in the future.

We owe it to our force to provide them with the environment where all can thrive. That is why we are directing critical resources to rid our ranks of any corrosive elements and injustices that degrade our ability to provide a lethal, ready force.

Second, to remain the world's greatest Air and Space Force, we must look to the future through a lens of capability-focused modernization. Evidenced by nuclear modernization and the next-generation air dominance platforms, our digital acquisition approach revolutionizes how we design and field capabilities to the warfighters. Moving forward, we will expand on these digital revolutions while also investing in Next Generation Space Systems that are resilient and defensive. Space is no longer a benign domain. Our U.S. Space Force is purpose-built to deter and protect free access to space.

Third, combatant commanders require an agile military that operates seamlessly across all domains at both speed and scale. That is why we continue to invest in capabilities like the Advanced Battle Management System, our contribution to Joint, All-Domain Command and Control (JADC2), which will connect every sensor to every shooter across all domains.

Likewise, access to, and freedom of action in space is central to connecting us to the Joint Force. In its second year, the U.S. Space Force is laser-focused on integration. Investments in space capabilities increase the effectiveness of all operations across all domains. The result is a U.S. military that is better connected, better informed, faster, and more precise.

Finally, the U.S. Air and Space Forces do not fight alone. We benefit from the expertise and capabilities of our sister services and coalition forces as well as from a whole-of-government, commercial industry, and academia. We will continue to invest in enduring relationships while expanding new partnerships to transform how we fight future wars.

Members of the Committee, thank you for inviting us to testify. I look forward to your support and am confident that with your help the Air and Space Forces will be armed with the capabilities necessary to protect our Nation and defend the high ground.

We welcome your questions, and I ask that this opening statement be entered into the record.

Chairman REED. Without objection, the opening statement will be in the record.

[The joint prepared statement of Mr. Roth, General Brown, and General Raymond follows:]

PREPARED STATEMENT BY THE HONORABLE JOHN P. ROTH, GENERAL CHARLES Q. BROWN, JR., AND GENERAL JOHN W. RAYMOND

THE DEPARTMENT OF THE AIR FORCE

The Air and Space Forces unite under the Department of the Air Force and are inextricably linked in defense of the crucial high ground, integral to the stability of the global security landscape. Under civilian leadership, the Department's nearly 700,000 airmen and guardians provide independent and integrated options to national leaders while defending democracy, an ideal that President Biden said, "holds

the key to freedom, prosperity, peace, and dignity." The Department of the Air Force enhances the peaceful instruments of diplomacy, sustains instruments of deterrence that check the spread of conflict, and ensures credible consequences for aggression.

Today more than ever, we and our national security partners must be bold. The challenges are many: the People's Republic of China, the Russian Federation, contested domains old and new, the vulnerabilities of proliferated technology and weapons, climate change, a global pandemic and its aftermath, the accumulated results of past budget priorities and decisions, and corrosive, difficult human issues like extremism, sexual assault/harassment, suicide, and disparate treatment of others. We must think and act differently. We no longer have the luxury of time to evolve into what we need to be . . . we must harness this unique moment together taking action to change. We simply cannot maintain status quo.

Given China's exponential pace of weapons development and extensive marshalling of government and industry, we do not have the leeway to simply maintain our current approach. China is on track to exceed our capacity, so it is our obligation to act with a sense of urgency. China poses challenges unlike any other in our Nation's history. We must be clear-eyed about these threats and our response to them. We recognize the need for change AND must create the capacity for that change. We must substantially improve our understanding of China and the Indo-Pacific region and prioritize the threats accordingly. We cannot afford to keep prioritizing near-term operational posture and today's force structure at the expense of modernization and investment.

This Department is particularly suited for these challenges. We own the high ground with air and space today, but it becomes more contested every day. We cannot allow the erosion of our advantages in this crucial high ground in competition now or in a future conflict. The speed, reach, and responsiveness of the U.S. Air Force and U.S. Space Force reinforce all instruments of national power and norms of responsible behavior. We can see, sense, and strike targets near and far, and provide global warning, networks, and independent options in space. We provide global strike and effects that can hold any target at risk within 24 hours—this is not conceptual or theoretical, it is reality. Global strike requires a unique fusion of intelligence, surveillance, reconnaissance, logistics, access, and speed that only the Air and Space Forces provide at a moment's notice. Our ability to rapidly eliminate threats anywhere in the world is a consequence of our inherent global persistence and reach, not necessarily dependent upon pre-positioning or forward basing. We have been exceptional at this, and until now we have also been unmatched.

The Department of the Air Force requires a modernized force that is relevant today and long into the future. We are hard at work designing our future force. We must invest in the cutting-edge technologies and capabilities that are critical to securing our military advantage in the future—this includes updating our two legs of the Nation's nuclear triad, and our nuclear command, control, and communications systems. Enabling our military advantage in the long term means we need to shift away from legacy platforms and weapons systems that are decreasing in relevance today and will be irrelevant in the future—our aircraft fleet is 30 years old on average, and 44 percent are beyond their designed service life. Maintaining our aging weapon systems is costly now and, without change, will mortgage our future. We must also create decision superiority by delivering information and capabilities to decision makers at all echelons through a "military internet of things." A critical step includes accelerating command and control infrastructure by investing in the Advanced Battle Management System (ABMS)—a vital contribution by the Department of the Air Force to Joint All-Domain Command and Control. We must methodically and immediately move out on tough decisions in order to compete.

Similarly, we must revise the Space Force's force design to be resilient against a significantly increasing threat. We must continue to innovate, adapt and diversify capabilities to meet the threats that challenge America's access and maneuverability in space and that of our allies and partners. As we advance space defense, we must simultaneously work with stakeholders across the Department of Defense, the whole-of-government, our allies and partners, and commercial industry to integrate and streamline spacepower efforts. Only then will America be able to fully leverage what we have built over the last year.

The Air Force and Space Force have been on the leading edge of technology since their inception. By embracing novel authorities such as middle-tier of acquisition authorities, and innovative approaches such as agile software development, modular open systems approach, and digital engineering, we will stay on the cutting edge. We intend to capitalize on future investments in modeling and synthetic simulation environments to ensure both joint warfighters and operational platforms are ready.

As outlined in the Interim National Security Strategic Guidance, we are "committed to realizing and defending the democratic values at the heart of the Amer-

ican way of life." Outpacing threats in tomorrow's complex global security landscape requires innovative thinking and modern investments. We recognize the need for change in order to protect the American way of life. This budget lays out a plan to modernize our military capabilities, and will allow U.S. diplomats to negotiate from a position of strength.

EMPOWERED AIRMEN AND GUARDIANS

America's airmen and guardians conduct combat operations, channel innovation, and conquer adversity around the globe all day, every day. We know that airmen and guardians are our greatest and most precious resource. While weapons systems and tactics inevitably change, our airmen and guardians remain the core of our ability to deter and, if necessary, defeat our competitors. We need multi-capable professionals who bring diverse ideas, leverage digital tools, and outmaneuver and out think our adversaries. Our airmen and guardians have committed to service and taken oaths pledging their lives to the protection of our Constitution. And while we are working to provide the best environment possible as we recruit, train, retain, and leverage our strategic advantage—our people.

As a Department, we are working to increase diversity and inclusion, build and fortify resiliency, support our families, and develop empowered airmen and guardians. We must ensure a culture of dignity and respect. We must ensure our people have both high quality of service and high quality of life. This starts with ensuring Air Force and Space Force leaders represent the Nation and our Core Values. Our Nation's defenders must be empowered, resilient, agile, innovative, well-led and clear on how much they are valued.

Diversity

A diverse and inclusive force is a warfighting imperative. The Department of the Air Force must attract, recruit, and retain talented Americans from all backgrounds to leverage diverse ideas and experiences. By harnessing airmen's and guardians' diverse experiences, geographic and socioeconomic backgrounds, cultural knowledge, and language abilities, we possess an asymmetric advantage over our competitors.

To sustain our lethality and credibility, our force must be truly inclusive and reflect the best of the diverse society we serve. This includes removing barriers to service—from reviewing our accession and assessment tools and career development, to expanding outreach to underrepresented minorities through diversity recruiting and increasing scholarships at minority-serving institutions. It will also include modernizing how we develop airmen and guardians, transforming our personnel and talent management systems, and championing a culture of support and inclusion for all airmen, guardians, and their families.

Sexual Assault Prevention and Response

Sexual assault is a crime that undermines force lethality, readiness, and mission success. The Department of the Air Force is committed to eradicating sexual assault using effective, research-based prevention. These efforts utilize assessment tools to identify those at high risk for unethical behavior, equip all leaders with information and goals to reduce assault risk factors, educate the force on intervention skills, and promote positive unit culture to eradicate sexual assault. When sexual assault does occur, the Department is dedicated to supporting victims and prosecuting those who would harm others through the chain of command and Uniform Code of Military Justice.

Suicide and Personal Violence Prevention

The prevention of suicide and interpersonal violence remains a difficult challenge. To reduce the incidence of suicide, the Department of the Air Force is undertaking a leadership-driven public-health approach informed by data and analysis while partnering with academia, industry, and our sister Services to include diverse ideas and perspectives.

The Department of the Air Force is also committed to eliminating interpersonal violence in any form. Domestic violence, child maltreatment, workplace violence, and sexual assault negatively impact victims, families, units, mission effectiveness, and the Department as a whole. We are dedicated to a strategy that leverages the latest science, implements best practices, and incorporates feedback from our members. Should these acts of violence occur despite our prevention efforts, we are committed to providing victims the necessary care and holding perpetrators accountable.

Quality of Life

We owe our airmen and guardians the best quality of life possible. We must continue work to improve all the professional and personal aspects of life for each of

our airmen and guardians, and their families. It includes professional development, housing, child care programs, healthcare, education, and spousal employment, among many others. We are integrating the availability of quality housing, health care, occupational licensing reciprocity, and school caliber into our strategic basing criteria—ensuring our families have the best support possible. The Department is committed to continuing these worthy efforts. Our airmen and guardians deserve nothing less.

A DEPARTMENT OF THE AIR FORCE FOR 2030

As the Department of Air Force prepares to celebrate 75 years of service to our great Nation, the Air Force is transforming itself to address the challenges of near-peer adversaries while the newest branch of the U.S. Armed Forces—the Space Force—is creating and integrating a Service purposely built to compete, deter, and win in the space domain. Both Services, and the entire Department of the Air Force, are dedicated to protecting the Homeland and democracy around the globe. We must modernize and integrate to meet the challenges posed by great power competition, climate change, cybersecurity, fiscal constraints, and worldwide pandemics. With Congress's support, we will maintain our dominance of the high ground, and we will ensure the American way of life for generations to come.

UNITED STATES AIR FORCE

VISION FOR CHANGE—AMERICA'S AIR FORCE FOR 2030

America fights as a joint team, and the U.S. Air Force is the only Service that can meet our Nation's adversaries with mass, speed, agility and survivability on near-immediate timelines. The Air Force sees, senses, and communicates globally. The Air Force monitors our adversaries' movements, deploys forces en masse, deters competitors, and strikes enemies without warning. No one else can do it. Without the Air Force, the joint force loses. Only with a modernized and ready Air Force is the joint team—and our Nation—secure.

The American Homeland is no longer a sanctuary. Our citizens face threats from a variety of actors in both the physical and digital arenas. Competitors, especially the China and Russia, continue aggressive efforts to negate our long-standing warfighting advantages while challenging America's interests and geopolitical position. While the Nation was focused on countering violent extremist organizations, great power competitors focused on the American way of war. They studied, resourced, and introduced systems specifically designed to defeat Air Force capabilities that have strengthened the joint force for a generation. That is why the Air Force must accelerate change now, so we can protect the American way of life in 2030 and for decades to come. Simply put, if we do not change, we risk losing. We risk losing in great power competition, we risk losing in a high-end fight, and we risk losing quality airmen and families.

The President clearly stated that diplomacy is our primary means of engaging with the world: it must be our first tool of choice. The President likewise recognizes that our decisions and actions must come from a position of strength. The Air Force offers safe, secure, and effective nuclear deterrence, which strengthens national policies. It is also important to recognize that air dominance is not an American birthright. The Air Force is pivotal to deterring these aggressors and bolstering our allies and partners. America remains committed to freedom of the commons to support maintaining the rules-based international order around the globe. Control of the air and enabling domains ensures that the joint force has full freedom of maneuver.

The diversity of our airmen is both a tactical and strategic advantage. We are committed to recruiting and retaining the best of America. While the COVID–19 pandemic provided new challenges to our force, we remain devoted to caring for airmen. Suicide and sexual assault persist as challenges that we are tackling head-on. Likewise family support programs are vital to our resiliency as a Service. A diverse and inclusive Air Force helps us out-innovate adversaries today and overcome challenges tomorrow. And, we know that each airman—Active Duty, guard, reserve, and civilian, no matter their background—took an oath to defend the Nation for all Americans.

Airmen in the near future are more likely to fight in highly-contested environments. These complex, all-domain conflicts will result in combat attrition rates and risks to the Homeland that are more akin to World War II than the uncontested environments to which we have become accustomed. Given our ability to project power from afar, independent of forward access or lengthy prepositioning timelines, Airmen will be the first to respond to many emerging crises. In any scenario, the Air Force plays a unique and integral role to our collective deterrence and joint

warfighting credibility. We must accelerate change to meet the challenges our Nation faces. This requires a relevant, modern force based on cutting-edge capabilities that will survive in future conflicts and shifting away from legacy platforms that are increasingly irrelevant.

The Air Force is expected to provide enduring airpower capabilities irrespective of the threat encountered, the technology utilized, or the budget provided. The core missions of airpower—air superiority; global strike; rapid global mobility; command and control; and intelligence, surveillance, and reconnaissance—provide unequivocal advantage to the joint force. Only the Air Force provides air superiority, global strike, and rapid global mobility for the Nation. Without these missions, the Homeland is unprotected and America cannot project power around the globe. We are innovating and advancing our competencies with innovative capabilities such as the Advanced Battle Management System, which will increase commanders' decision advantage. Moreover, new approaches to our core missions enhance the joint force and answer the challenges posed by great power competitors.

The Air Force's future force design recognizes the need for change and the range of threats to the Nation, our allies, and partners. In 2021, we identified three key capability development areas for investment: connect the joint force, generate combat power, and conduct logistics under attack. Moving forward we will prioritize the resources that will allow us to continue to make investments in these areas, with more to come. Additionally, the Air Force will prioritize within its resources, affordable, analytically defensible, force structure and system capability proposals. Through partnership with Congress, the Air Force will prioritize resources to guard the foundations of national freedom and independence for America and our allies.

AIR SUPERIORITY

Combat power, regardless of Service, often depends on the Air Force's ability to deliver air superiority. Our competitors have fielded air forces, radar systems, and missiles that can attack our territory, bases, forces, and allies and partners, or defend against our military actions. Our job is to stop them through control of the air. To do this, we build understanding of the air situation and then use the right mix of capability and capacity to control the air while creating windows of air superiority—no matter the threat. As we stay ahead of our competitors, the Air Force needs flexible systems and agile design processes to field new capabilities at speed.

Current platforms will not fully support tomorrow's demands. Airmen are deliberately balancing today's readiness risk with capability modernization. Remaining ahead of adversaries who are committed to negating our technological edge requires investment in advanced capabilities. Likewise, access to domestic airspace allows us to train in realistic environments, which is essential to developing and maintaining these advanced capabilities. Near-peer competitors are challenging our capability to command the air. We must take action now to ensure the joint force's success tomorrow.

Future Air Superiority Capability

The F–35 Joint Strike Fighter is the cornerstone of our future fighter force and air superiority. Achieving air superiority in a future fight is strongly dependent on full-spectrum dominance. The F–35 and its 5th-generation capabilities are part of our fighter force design that outpaces key competitors. The Air Force is fully committed to the F–35 and needs it to be capable, available, and affordable. As we continue to receive the F–35 into the Air Force and increase our capability, it is important to manage our F–35 fleet in an intelligent and deliberate way to ensure we remain ready to deter adversaries, support our international allies and partners, and meet our Nation's security commitments worldwide.

The Air Force cannot successfully fight tomorrow's conflicts with yesterday's weapons. Our adversaries recognize that full-spectrum dominance is a national strength. As a direct result, competitors are investing to overtake our current warfighting advantage in the air. Next Generation Air Dominance (NGAD) ensures we maintain air superiority in the future by introducing game-changing technology that includes digital engineering, open mission systems architecture, and agile software. NGAD is not a single platform—it is a capability focused on fielding capabilities to mitigate identified capability gaps, not on creating a "next-generation" aircraft. The capabilities NGAD provides will ensure survivability, lethality, and persistence while seamlessly integrating with the Advanced Battle Management System via a mix of manned, unmanned, and even optionally-manned aircraft along with advanced stand-off weapons.

We will complement NGAD and currently fielded 5th-generation fighters such as the F–22 and F–35 with the F–15EX. Acquiring this re-designed aircraft allows us to shore up our fighter force while driving down sustainment costs, our fleet's aver-

age age, and inherent risk. By leveraging our partners' investments in the F–15 platform, the Air Force is efficiently fielding a familiar aircraft with proven tactics. It also boasts an open mission software system, which allows us to easily update the computer and avionics software.

GLOBAL STRIKE

Global strike is critical to our national power and an enduring airpower capability. Regardless of the aircraft, weapon, or system employed, we must maintain the capability to attack at a time and place of our choosing. As China and Russia develop new weapons and defenses, we must modernize and develop capabilities to maintain a competitive advantage. Both nuclear and conventional strike must be integrated to compete against these near-peer adversaries. Air Force strike operations are precise, and these effects are delivered through standoff capabilities as well as penetrating platforms.

Nuclear deterrence allows the Nation to negotiate from a position of power. A credible, capable, and safe nuclear deterrent provides the United States and our allies with an umbrella of protection while discouraging the use of nuclear weapons by all nations. Likewise, a strong nuclear strike capability deters conflict.

For precise, conventional attack capabilities to succeed, they must be capable of penetrating highly-contested environments. To maintain our advantage, the Air Force requires capabilities that incorporate domain awareness, full-spectrum survivability, extended range, and sufficient payload. It is vital that our capabilities keep pace as threats evolve. By leveraging human-machine learning, the right mix of manned and unmanned systems, and agile design processes, our global strike capabilities will provide responsiveness, precision, flexibility, connectedness, and integration across the joint force.

The United States Air Force has the unique ability to sense, see, and strike any target, anywhere, at any time, nearly instantaneously, from anywhere in the world. On a daily basis, one aspect of these capabilities is on full display as our bomber task forces execute training scenarios with our allies and partners. It is no secret that potential adversaries closely monitor global activity—these maneuvers make adversaries think twice about conducting malign activities while reassuring our allies and partners.

The Air Force's global strike capabilities have the range, speed, and flexibility required in a conflict and are far less as dependent on pre-positioning or forward-basing. A continued investment in modernization efforts to our bomber and tanker fleets will ensure our long-range capability for the future. Additionally, a renewed emphasis into air base defense, along with Agile Combat Employment and Joint All-Domain Command and Control concepts will ensure the United States maintains the worlds' greatest military asymmetric advantage well into the future.

Ground Based Strategic Deterrent (GBSD)

The Nation requires a fully modernized nuclear triad and supporting infrastructure to maintain our nuclear deterrence capability. Deterrence operates in peacetime, through the gray zone, worldwide, across all domains, and into conflict. And, deterrence requires all three legs for a responsive nuclear triad. By not maintaining a reliable U.S. Intercontinental Ballistic Missile (ICBM) force, we risk deterrence erosion against not one, but two strategic nuclear adversaries. This is too high of a risk to our Nation's security. Our ICBMs have provided a highly reliable and secure deterrent capability since 1959. Delaying their modernization for the last two decades necessitates a comprehensive weapon replacement.

The Ground Based Strategic Deterrent (GBSD), the ICBM replacement, capitalizes on the strengths of a land-based triad component that is survivable, efficient, and geographically dispersed, while replacing aging components and addressing asset attrition along with the ICBM force's declining infrastructure.

B–21 Raider

Our bomber force constitutes the second critical leg of our Nation's nuclear triad and the B–21 Raider aircraft will be the backbone of our future bomber force. The B–21 will possess the range, access, and payload to penetrate the most highly-contested threat environments and hold any target around the globe at risk. This new bomber will provide the capabilities to deter and, if needed, win in high-end, near-peer conflicts. And with bombers as the most flexible leg of the nuclear triad, the B–21 underscore our national security. This aircraft will support combatant commanders across the range of military operations as both a nuclear and conventional bomber.

Over the past 3 years, the B–21 program accelerated from design to physical manufacturing of aircraft. While building test aircraft, the program is scaling manufac-

turing infrastructure and capacity across the industrial supply base. In parallel, B–21 beddown preparations continue on-track to support the Nation's newest bomber aircraft projected arrival in the mid-2020s.

Long-Range Standoff Weapon (LRSO)

The Air Launched Cruise Missile is nearly 30 years beyond its intended design life and faces evolving threats and availability challenges. Recapitalization of these missiles via the Long-Range Standoff Weapon (LRSO) is vital to our nuclear deterrence capability.

As our competitors improve their air defense systems, our stand-off delivery capability diminishes. In order to maximize our capabilities, the Nation requires a modernized bomber fleet and the LRSO. This weapon's ability to penetrate contested airspace and survive adversaries' defenses holds targets at risk and is a cost-effective way to modernize the nuclear triad. Additionally, bombers armed with LRSO provide a recallable and re-targetable capability which can hold any target at risk—it is both a visible and tailorable deterrent.

Hypersonics

The Air Force is also investing heavily in hypersonic weapons. This cutting-edge technology increases the Nation's rapid strike capabilities. By leveraging hypersonic weapons' improved maneuverability, America will have additional response options to deter adversaries and reassure allies. An operational hypersonic air-launched weapon enables the United States to hold fixed, high-value, and time-sensitive targets at risk in contested environments from stand-off distances. To that end, the Air Force is developing the Air Launched Rapid Response Weapon (ARRW) using the middle tier of acquisition rapid prototyping authority. ARRW is on track to be the Nation's first operational hypersonic weapon. Hypersonics—and global strike as a whole—enable diplomacy by strengthening the negotiating position of the United States.

RAPID GLOBAL MOBILITY

The Air Force capability that most directly, and physically, supports both the Air Force and our joint teammates is rapid global mobility. Airmen conduct Rapid Global Mobility operations to project and sustain combat power by moving personnel, material, fuel, and supplies across the globe, in and through permissive and contested threat environments on short timelines. The combination of speed, range, flexibility, and responsiveness is what differentiates air mobility operations from other forms of transport and is critical to multi-modal operations contributing to a higher pace for Joint All-Domain Operations. As threats evolve and the United States can no longer operate from well-established fixed bases, rapid global mobility is the lynchpin to persistent logistics, and we are examining unique ways to utilize mobility aircraft.

Air Refueling

Air refueling, one segment of rapid global mobility, is foundational to worldwide power projection. The ability to extend the range and persistence of air platforms provides a decisive advantage and deterrent against adversaries. To maintain our air refueling edge, the Air Force must continue investment in the KC–46 while moving beyond legacy KC–10 and KC–135 aircraft. The inability to phase the divesture of the legacy tanker fleet shackles funding and manpower resources and hampers the fielding of the more capable KC–46 at the rate required to support combatant commanders. This negatively impacts air refueling capacity and tanker advancement. Offsets from legacy tanker divestment in both funding and manpower are critical to the success of the KC–46 and air refueling as a whole.

Emerging Logistics

Every 4.2 minutes a mobility aircraft takes off from an airfield somewhere in the world. This is a unique opportunity as mobility aircraft are envisioned as critical nodes in the Advanced Battle Management System framework. Mobility platforms of all types can act as sensor nodes, inputting information into the sensing grid and increasing a commander's decision advantage. At the same time, we are exploring novel approaches to logistics through Agility Prime, which is developing electric vertical takeoff-and-landing vehicles (eVTOL). This innovative program will help us rapidly move small numbers of personnel and equipment around a battlefield and quickly rise to respond to emerging challenges such as isolated servicemembers. We are also training airmen and developing concepts and practices that allow for dispersed, defendable, and mobile logistics networks. We are establishing agreements

with allies and partners that provide access, and the ability to expand access, to key aerial ports, seaports, storage nodes, and associated connections.

COMMAND AND CONTROL (C2)

Inherent to outthinking adversaries is the ability to command and control (C2) the joint force. Combatant commanders require an agile military that operates seamlessly across domain boundaries at both speed and scale. The Air Force's current C2 structure is based on a Cold War-era design that is vulnerable and slow—a roadblock to the goal of rapid and agile decision making. The enemy can easily target our C2 structure's centralized nodes with both kinetic and non-kinetic means. C2 must be resilient to attack, responsive to rapid changes, integrated across all domains, and secure from exploitation. This core mission allows the joint force to create an advantage by converging units and capabilities at a time and place of our choosing.

Achieving decision advantage for combatant commanders requires both sensors to gather data and a C2 network to translate and share data across the joint force. Real-time dissemination of actionable information, aided by artificial intelligence and machine learning, allows joint warfighting across all domains at a pace faster than our competitors. This speed matters to the decision maker and the warfighter. And, with the proliferation of technology, future warfighters will have the ability to observe, orient, decide and act within minutes—as opposed to hours and days.

Advanced Battle Management System (ABMS)

A critical step towards accelerating command and control architecture is the Advanced Battle Management System (ABMS)—the Department of the Air Force's contribution to Joint All-Domain Command and Control. As a new approach towards information sharing and decision management, ABMS enables compressed decision making and converging effects without domain or geographic boundaries. As a family of capabilities—versus a single system—ABMS creates a digital environment capable of increasing awareness, creating greater understanding, and enabling superior decision making—all of which is critical to prevailing in future conflicts.

As a simple analogy, ABMS strengthens decisions by channeling necessary information and capabilities through a "military internet of things." This internet, designed with digital standards, is being purpose-built to deliver critical capabilities to the joint force including secure processing, connectivity, data management, applications, sensor integration, and effects integration. ABMS helps overcome the Cold War-roadblock of vulnerable command and control nodes. For instance, by transforming from a small number of air operations centers to a "military internet of things," ABMS allows for agile, distributed, and mobile capabilities able to execute mission command even when fractured by an enemy attack.

ABMS's infrastructure is critical to ensuring the joint force connects sensors to shooters with machine-to-machine precision and speed while increasing commanders' awareness. And just like the development of the internet, ABMS is being built across multiple fiscal years. Fiscal year 2020 and fiscal year 2021 have focused on exploring how we can best connect sensors and shooters while building partnerships with our industry partners. Moving forward, the Air Force will prioritize resources to allow the continued building of ABMS's digital network environment and infrastructure. By prioritizing the resources to support ABMS investment, the Air Force will be able to initiate replacement of human-in-the-loop data transfer processes with machine-to-machine data exchanges allowing for delivery of multi-domain secure processing and data management, connectivity, and applications that synchronize sensors and networks. In turn, the joint force is enabled to make decisions faster than the adversary is able to respond.

Nuclear Command, Control, and Communications (NC3)

Nuclear Command, Control, and Communications (NC3) systems act as the central nervous system of our nuclear deterrent. They link the President and national leaders to the nuclear force—all day, every day, under all conditions, without fail. Without NC3, we cannot effectively command and control nuclear forces. And without effective command and control of nuclear forces, we cannot deter adversaries.

Previously, electromagnetic pulses posed the greatest challenge to our NC3 networks. Now, electronic warfare, cyber-attack, and threats from space all provide challenges to key nodes and systems. Russia, while embracing a doctrine of nuclear escalation in conventional conflict, is nearly complete with its recent full range of nuclear modernization efforts. Equally concerning is China's pursuit of new nuclear capabilities tailored to achieve its national security objectives while also modernizing its conventional military.

As we modernize our portion of the nuclear triad, we must also modernize our NC3. The Air Force is pursuing communication capability enhancements with respect to our bomber force and Ground Based Strategic Deterrent so they will be fully integrated into our current NC3 systems and has flexibility to adapt as NC3 systems are modernized. Moreover, we understand that the strategic environment evolves and is increasingly dynamic. Our NC3 architectures and modernization plans will be adaptable, look beyond the near-term, and integrate with the Advanced Battle Management System (ABMS). While ABMS will enable conventional forces, it will also enable nuclear forces with rapid, multi-path transmissions that will transform NC3 from a Cold War-era relic into a C2 network operating at speeds our adversaries cannot match.

Successfully executing command and control across the joint force requires information. A major avenue for that information is the Air Force's intelligence, surveillance, and reconnaissance capabilities.

INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (ISR)

The Air Force conducts intelligence, surveillance, and reconnaissance (ISR) missions to analyze, inform, and provide joint force commanders with the knowledge needed to achieve decision advantage. This ISR sensing grid consists of a robust multi-layered network of sensors, platforms, people, devices, and services with the goal of delivering a holistic, accurate, predictive, and timely characterization of the operating environment. This network is interoperable with the joint force, the intelligence community, allies, and partners. Domain awareness is underpinned by automation, connectivity and analysis; is rooted in intelligence; and is critical to the future of warfare. In that future, ISR underpins the Advanced Battle Management System (ABMS) architecture and allows joint force commanders to achieve an accurate, real-time understanding of the environment. This understanding accelerates decision making, effectively conducts command and control, and achieves decision advantage ahead of competitors.

Future ISR capabilities must be survivable against high-end threats while leveraging forward-looking investments in command and control capabilities—including emerging technology like artificial intelligence—to present decision-ready information faster than our adversaries' capabilities. The Air Force's current ISR systems are viable in a counter-insurgency war, but may not effectively contribute in tomorrow's competitive environment. Without investment in additional capabilities necessary for the high-end fight, we will be reliant on ISR platforms that will be ineffective in highly-contested and denied environments. As a result, we risk fighting blind.

Survivable, Relevant Platforms

ISR platforms play a critical and continuous role in supporting a range of military operations. The most important role of intelligence in military operations is to provide analysis of key aspects of the operating environment to facilitate timely military decisions. Current ISR platforms have been able to accomplish this task with relative ease because they operated in uncontested and low-threat environments where the United States enjoys superiority across all domains of warfare. Such freedom of action will not be the case in the future. Future threats will challenge the ability of legacy ISR platforms to successfully execute their missions.

In the near future, ISR platforms will feed critical data through the Advanced Battle Management System (ABMS), which in turn will present near real-time information to joint force decision makers. Future airborne ISR platforms will need to survive and operate in a more challenging environment. Ongoing modernization efforts will focus on a family of platforms that are effective, resilient, and survivable against technologically-advanced threats, and able to pass data to necessary networks at machine speed. In our discussions going forward, we will steer away from platform-centric conversations and focus instead on the capabilities needed to inform joint force operations.

Our adversaries are already fielding technologies that will hold our legacy platforms at risk to support the range of military operations in a future high-end fight, and the technological evolution will continue to accelerate. In order to keep pace ahead of emerging threats, we must work with the combatant commands to assess the demand signal on current fleets and where acceptable risk can be taken so the Air Force can accelerate modernization. Legacy ISR platforms, once considered irreplaceable to operations, are often unable to survive or deliver needed capabilities on competition-relevant timelines. These legacy platforms must be phased out, with resources used to invest in modern and relevant systems. Working together, we must take calculated risk now in order to reduce the greater future risk.

For instance, the RQ–4 Block 30 Global Hawk was crucial to the ISR requirements of yesterday and today. However, this platform cannot compete in a contested environment. And tomorrow's conflicts will be contested. Moving beyond this platform allows us to bring the ISR enterprise into the digital-age by using sensing grids and fielding advanced technology that includes penetrating ISR platforms. The Air Force will continue to pursue the Fiscal Year 2021 NDAA RQ–4 Block 30 divestment waiver in order to repurpose the RQ–4 Block 30 funds for penetrating ISR capability. Overall, intelligence collection will transition to a family of systems that includes non-traditional assets, sensors in all domains, commercial platforms, and a hybrid force of 5th- and 6th-generation capabilities.

A comprehensive investment strategy that the Air Force is bringing forward synchronizes divestment of legacy platforms, takes calculated risk in upgrading existing platforms, and introduces the next-generation ISR family of systems that will feed into ABMS.

NEW APPROACHES

The Air Force's core missions encompass both enduring capabilities unique to our Service and some capabilities shared with the joint force. Airmen are rapidly iterating and innovating improvements to all core missions. These new approaches to airpower overcome today's roadblocks and focus on tomorrow's great power challenges. Both technology and operational concepts benefit from our airmen's perspectives. Every day, airmen increase the agility, speed, resilience, and lethality of our contributions to the joint force.

Force Generation Model

The Air Force is also re-examining how we present forces to combatant commanders. The core missions of the Air Force continue to be in constant demand around the world. And because many of the capabilities we provide are exclusive to our Service, our forces have been under strain for two decades. This strain negatively impacts readiness and our ability to modernize.

Preparing for near-peer adversaries, the Air Force is implementing a new force generation model focused on building and sustaining long-term, high-end readiness. Our goal is to more effectively articulate readiness impacts and capacity limits, and instill discipline into the system. Our new, simplified model, realigns the Air Force with the Joint Staff's three phase model, is easily understood by combatant commanders, builds towards sustainable readiness, and balances current operations with the training necessary for future full-spectrum combat operations.

Agile Combat Employment (ACE)

The Advanced Battle Management System (ABMS) not only connects sensors and shooters but also enhances persistent logistics by sensing the threat landscape and material environment. Persistent logistics, with the inherent ability to posture, sense, and respond, is the warfighting answer to the key operational problem of logistics under attack and enables Agile Combat Employment (ACE). ACE is the ability to quickly disperse & cluster forces to a cooperative security location and conduct operations across all domains with minimal disruption, while maintaining operational flexibility. This new method of operating will allow the United States to confuse the enemy and strike at a time and place of our choosing with minimal risk. The ability of ACE to sustain combat operations through persistent logistics has already been validated through multiple exercises across both the Pacific and European theaters.

ACE requires technological advances like ABMS, novel equipment, and innovative airmen. Our airmen are tackling ACE, and the larger challenge of persistent logistics, by adapting techniques previously associated with special operators. Our commanders support these efforts by encouraging critical thinking skills and driving decision making to the lowest levels—in many cases our youngest frontline supervisors. These empowered airmen are innovating new approaches to projecting combat power across the globe.

Base and Critical Infrastructure Defense

The Department's infrastructure defense efforts are currently focused on directed energy research, development, test and evaluation; counter-small UAS; and investments in cruise missile defense. In the coming years, we will steadily increase investment of critical infrastructure defense measures to meet the challenges of the future fight, ACE, and logistics under attack.

As China and Russia develop weapons that challenge our superiority in the air, they are also making strides that hold our bases at risk. While the Air Force will mitigate some risk through persistent logistics, the security of our air bases is es-

sential to conducting combat operations. Like other aspects of combat operations, base defense is inherently joint. And just as the joint force is dependent on the Air Force to execute our core missions, the Air Force must leverage our sister Services for base defense.

If future expeditionary and permanent air bases are not protected from attack, the Air Force will be challenged to conduct combat operations. Without the Air Force's air superiority, the joint force is at risk of attack from the air for the first time since the Korean War. The Air Force acknowledges that this is a joint problem that requires a joint solution, which is why we have allocated experimental funding to explore and develop directed energy and kinetic and non-kinetic base defense options. Looking forward, the Air Force will prioritize resources that will allow it to continue prototyping the ability to detect, track, identify, and mitigate small unmanned aircraft system threats. Proper base defense encompasses significant decisions with far-reaching impacts—we must get this right.

Infrastructure

We project power, generate readiness, test new platforms, train to support joint operations, and provide safe and healthy communities for our families at our bases. As the joint force becomes increasingly dependent on an integrated battle network, installations also serve as key nodes in enabling mission success around the world. The readiness and resiliency of installations is a matter of strategic importance to ensure the Air Force can always provide combat capability. Changing climate and severe weather events are a continual threat to our installations, and we have seen first-hand the impacts climate and severe weather have on our installations.

The Air Force views installation resilience as the capability of a base to project combat power by protecting against, responding to, and recovering from deliberate, accidental, or naturally occurring events that impede operations. We are taking a deliberate, holistic approach to installation resilience through Department of the Air Force's Installation Energy Strategic Plan. This includes improving the resiliency of our energy, cyber, infrastructure, and response options.

AMERICA'S AIR FORCE FOR 2030

This year we celebrate America's 245th birthday and next year the Air Force celebrates its 75th anniversary. Throughout our history, the Nation prospered because of our willingness to adapt and evolve, to adjust course when the situation dictates. Democracy is not a birthright, and neither is air dominance. And although airpower is our great comparative advantage, tomorrow's competitive environment requires that we accelerate change or lose.

Tomorrow's battlespace will be shaped by human talent, climate change, constricting budgetary resources, and challenges posed by great powers. The Air Force and its core missions stand ready to exploit the air domain, provide nuclear deterrence, and underwrite the national security America expects and requires. By working with Congress, we will protect the Homeland and defend democratic ideals. Moving forward, the Air Force will prioritize its resources so it is able to adapt our equipment, support our airmen, and bolster our core missions. We must continue to adjust course and overcome situational challenges so America maintains its airpower advantage.

America cannot wait to modernize the Air Force any longer, not 1 year, 1 month, or 1 week. To deter and defeat today's competitors and tomorrow's adversaries, we must re-capitalize our Air Force and we must do it now . . . the call to accelerate change or lose is not hyperbole—it is a requirement.

UNITED STATES SPACE FORCE

SECURING AN ENDURING ADVANTAGE

The United States is a space-faring nation. We have long understood that our Nation is strongest economically, militarily, and diplomatically when we have access to, and freedom to operate in, space. Unfortunately, potential adversaries have taken note of the United States' reliance on space, and this vital national interest can no longer be taken for granted; it must be secured. The rapid advancements of potential adversaries to threaten U.S. freedom of operation in space must be countered with immediate improvements to our space defense architecture and capabilities.

Competitors like China and Russia are challenging America's advantage in space by aggressively developing weapons to deny or destroy U.S. space capabilities in conflict. Both China and Russia have mobile ground-based laser and electronic warfare systems capable of jamming and blinding our satellite systems. China has in-

vested in satellite grappling technologies, like the Shijian-17 satellite's robotic arm, which could be used in future conflicts. Russia has tested an on-orbit system that has released a projectile designed to destroy U.S. satellites in low-Earth orbit.

The United States would prefer that conflict not begin in or extend to space. Our goal is to deter conflict in space from happening and from spilling over into other domains, and the best way to do so is from a position of strength. We are prepared to protect U.S. interests today and we are moving fast to ensure we can deter in the future, but our ability to deter conflict hinges on demonstrating both capability and resolve. Over-classification of existing systems threatens this ability, and we are developing a reveal and conceal strategy to ensure we can compete, deter, and win in this contested domain.

The Space Force was established to protect U.S. investments and freedom of operation in space, provide space capabilities to the Nation, the joint force, sister Services, the intelligence community, and our allies and partners. The Space Force is designed to be lean, agile, and innovative in order to move at speed and compete in the vast domain of space. Our small size also makes us the ideal pathfinder to validate new structures and approaches that can provide benefit across the joint force. While our budget is roughly two percent of the Department of Defense's request, the capabilities we deliver underwrite the force design of the entire joint force. Space capabilities have become a cornerstone of deterrence, not just in space, but in every domain. Without space, our forces abroad, security at home, and allies everywhere are at much greater risk. If we lose in space, America loses.

We spent the first year inventing the Space Force, with an organizational design that reflects the character of our operating environment and the nature of conflict that is likely to manifest. A headquarters and Field Command structure aligns complementary functions and streamlines command authority in the deliberate pursuit of speed and agility. Our first field command, Space Operations Command, stood up in October 2020 as the primary space forces provider to the combatant commands. We will establish the remaining two field commands before the end of 2021: Space Systems Command will develop, acquire, and field operationally relevant and resilient space capabilities in resilient and defendable architectures, and Space Training and Readiness Command will develop tactics, a testing enterprise, doctrine, advanced warfare training, and a dedicated cadre of warfighting professionals. We have already transferred space missions, billets, and monetary resources from 23 Air Force units to the Space Force, and we are preparing to merge operations, acquisition, and sustainment for some space systems currently distributed across the Army, Navy, and the Office of the Secretary of Defense, including the Space Development Agency beginning next year.

In our second year, we are aggressively integrating the Service into the fabric of national and international security by collaborating across the Department of Defense, interagency, commercial industry, and our allies and partners. As the Space Force creates independent military options for decision makers, we are preparing a force presentation model to optimize integration and delivery of space capability to the joint force. We are working to streamline acquisition processes to increase decision speed and expedite capability development, creating an integrated test enterprise, and doing the analytical and developmental work to create the most effective and efficient force design for the domain to bring unity of effort across the department. Lastly, we have initiated planning for a National Space Intelligence Center to provide scientific and technical intelligence as well as foundational space intelligence to the Service and the intelligence community. These initiatives make us more resilient and competitive, and they will put us in a better position to sustain continuing advantage.

DEVELOPING AND CARING FOR GUARDIANS

The character of operations and aspects of potential conflict in space are fundamentally different from the military art of terrestrial domains. Vast distances and speeds, potential for first-mover advantage, and unique operating environment demand experts that are familiar with these physical characteristics. As in all other domains, guardians must stay ahead of adversaries to give joint commanders and national civilian leadership new space-based security options. This requires a dramatic change in how we attract, recruit, develop, train, and retain talent.

We are committed to ensuring that the guardians reflect the diverse character of the United States—it is a national security imperative. Diversity gives us the perspective and skills to meet the challenges of our security environment and ensures we can bring our Nation's best talent to bear on the hardest problems. In order to meet these goals, we must work hard to address tough issues like sexual assault, extremism, and discrimination within the force; solving these problems is essential

to building a Service that ensures talented people of all genders, orientations, races, ethnicities, and beliefs are included and empowered to reach their full potential.

Guardian Strategy

To win the battle for talent, we have created a Human Capital Office to develop a new strategy for unified talent management for all guardians, in pursuit of an inclusive and team-centric culture. Our small size creates the opportunity and the mandate for a tailored approach to caring for and developing our guardians from accessions to retirement and beyond.

This "Guardian Strategy" will lead digital enablement by creating a digital cadre, an optimized data infrastructure, increased process automation, and new digital platforms. Using interviews and other assessment tools as well as focusing our Reserve Officer Training Corps presence at select universities will support both diversity efforts and needs for space related research and technical grounding. We look to develop and employ talent by taking a competency-based development approach, mandating more robust feedback systems, and creating potential-based promotion assessments with sequenced talent management boards. In our first year, professional development opportunities and promotion rates have increased significantly; we must reinforce systemic change to make this an enduring effect.

The Space Force is developing its own officer and enlisted professional military education (PME) programs to fit within the broader concepts of the Guardian Strategy to ensure that all members are career-long learners, and that learning directly relates to the success of their current and future duties. Space Force PME will focus on the development of space-minded warfighters who are credible and effective in multi-domain warfare and the joint environment. We have already expanded space curricula at Airman Leadership School; stood up a Space Force Non-Commissioned Officer Leadership Academy; expanded the Schriever Space Scholars Program at Air University; and created the West Fellowship for Senior Developmental Education. Finally, we are taking a proactive approach featuring teams at the unit level to strengthen social, physical, and mental attributes to energize personal and organizational resiliency. As the Space Force takes care of guardians and their families, it must prepare them to defend our Nation. Space Force talent must be deliberately managed by well-positioned human resources mission partners in the field commands and headquarters office to support both military and civilian guardians.

Training and Doctrine

We have completely redesigned our space training and doctrine across all space operations competencies, beginning with publication last year of a foundational doctrine document. Our training has elevated from basic operation of space systems to threat- and target-based advanced space warfare training. Guardian training and doctrine focuses on seven core competency areas, through advanced training and education: orbital warfare, space electromagnetic warfare, space battle management, space access and sustainment, military intelligence, cyber operations, and engineering and acquisition. Our shift in training and doctrine must be complementary to our capabilities and reflect the reality of our current and future missions. Additionally, Space Training and Readiness Command is bringing together training and doctrine to support our tactics, strategies, and theories of victory.

VALUE OF PARTNERSHIPS

An independent Service focused on space has already provided greatly expanded opportunities for partnerships with civil and commercial space organizations within the United States and with allies and partners around the world. Working through the Department of Defense, close cooperation with the National Aeronautics and Space Administration and the Department of State has ensured a unified U.S. voice in discussions about responsible behavior in space with foreign governments. Similarly, through the Department of Defense, we continue to work hand in hand with the Department of Commerce on shared interests including space traffic management, positioning, navigation, and timing programs, applications, and efforts to maintain the space industrial base. We are working to expand cooperation with commercial partners using both traditional and innovative development pathways; seeking means for tighter fusion to take advantage of the enthusiasm and energy in the commercial space sector.

Internationally, our partnerships have historically been built around one-way data sharing agreements with a small number of countries. As the proliferation and importance of space capabilities increases around the world, we are fostering greater cooperation with international partners across the board. For example, a hosted payload agreement with the government of Norway will save us more than $900 million and helped us get capability on orbit 2 years faster. We are also working

with NATO to further integrate space capabilities and knowledge in that alliance, including the stand-up of the first NATO Space Operations Center within NATO Air Command. Cooperation with allies and partners, on both capability development and operations, continues to provide opportunities to decrease cost and increase speed and innovation.

CREATING A DIGITAL SERVICE

Founded in the Information Age, the Space Force was "born digital." We are harnessing modern era advancements and tools to accelerate innovation and ensure our military advantages in, to, and from space. Under the leadership of the newly established Technology and Innovation Office, the Space Force focuses on partnering with U.S. Government, science and technology industries, and academia to build a digital Service to support Space Force missions and business operations.

Digital Headquarters

Leaders at every echelon of the force require access to data and analytics in order to make informed decisions with speed and precision. A new data analytic environment and automation tools will streamline headquarter processes, enable seamless data sharing, increase decision space, and accelerate warfighting outcomes. Digital transformation is occurring in operational readiness, talent management (recruiting and onboarding), programming and budgeting, and capability development. In capability development, digital models will enhance analyses of alternatives, iterate requirements decomposition, improve cost estimation fidelity, and ultimately accelerate the planning, coordination, and development of optimum solutions to meet critical warfighter needs.

Digital Operations

Commanders and unit-level guardians are empowered to innovate inside their mission operations, explore novel concepts for space domain awareness, Joint All-Domain Command and Control, collaborate with small business innovators, and align innovation efforts for transition into operations. This effort includes partnerships with the Joint Artificial Intelligence Center, industry, and academia to advance use of artificial intelligence applications and research.

Digital Workforce

Continuous transformation requires digitally-fluent military and civilian guardians. Therefore, we are funding software-coding training for military and civilian personnel and leveraging Department-wide digital training efforts to improve digital literacy using industry-leading commercial courseware. To achieve the goal of a digital workforce we must cultivate our collective digital acumen, develop an expert cadre of "Supra Coders," and equip and empower them to apply agile software practices, use artificial intelligence, and data science. Finally, we must place them strategically across the force to unleash their talent and energy toward inventive, innovative solutions in operations and acquisition.

ACCELERATING CAPABILITY DESIGN, DECISION, & DELIVERY

The Space Force must modernize its architecture to survive and execute spacepower missions in a contested domain and do so at speed. To this end, the Space Force is engaged in an end-to-end transformation of organizations and processes to accelerate delivery of operationally-relevant capabilities. Consistent with our effort to become a "Digital Service," we will exploit our digital engineering systems as a backbone to connect multiple processes and accelerate capability development activities from analysis to integration, decision, and acquisition.

Integrated Analysis for Optimal Design

The Space Warfighting Analysis Center (SWAC), currently aligned under the Space Operations Command, is leading analysis, modeling, wargaming, and experimentation to generate new operational concepts and force design options for the Department of Defense. The SWAC integrates domain expertise with unique analytic tools, datasets, and intelligence to develop operational architecture options to fulfill space missions. By driving unity of effort, we reduce cost, duplication of effort, and increase our speed of decision and action

Digital Engineering to Better Inform Requirements

Rather than static reports, the SWAC's design options are digital models, which enable testing of proposed capabilities through simulation in an environment that accurately reflects fast evolving threats and the space domain. The Space Force Strategy and Resources Office (SRO) integrates SWAC's design options with the ap-

propriate processes to develop Service capability and programmatic options for presentation to the Joint Requirements Oversight Council and Deputy's Management Action Group. The SRO also ensures digital models generate required data artifacts to inform oversight; Planning, Programming, Budgeting, and Execution; and acquisition actions.

Streamlined Governance for Timely Decisions

In order to support the Assistant Secretary of the Air Force for Space Acquisition and Integration, who will eventually have Service Acquisition Executive (SAE) authority and chair the Space Force Acquisition Council (SAC), the Space Force has established a supporting Program Integration Council (PIC). As a collaborative interagency leadership council, the PIC facilitates cooperation and deconfliction between National Security Space Enterprise stakeholders and ensures planning, alignment, execution, delivery, and optimization of capabilities across all space mission areas. Streamlined coordination across the enterprise via the PIC and SAC improves collaboration and better enables timely decisions by the SAE. The Assistant Secretary of the Air Force for Space Acquisition and Integration is an essential element of this approach and we look forward to implementing this congressionally-directed change as quickly as permitted by law.

Consolidated Space Acquisition Enterprise for Agility

Finally, in the summer of 2021 the Space Force will stand up the Space Systems Command (SSC) to provide for cooperation across space acquisition within the Department of the Air Force. Initially comprised of the former Space and Missile Systems Center (SMC) and the Service's launch enterprise, SSC will also have a limited administrative support relationship with the Space Rapid Capabilities Office (SpRCO) and—as of the beginning of fiscal year 2023, per statute—the Space Development Agency (SDA). By aligning three organizations with a pedigree in traditional acquisition, disruptive acquisition, and commercial acquisition, the Department of the Air Force can access best-of-breed solutions. Because SSC acquirers will receive digital models with traceable requirements, Program Managers and Program Executive Officers will be equipped to make faster, more agile decisions and trades. In addition, the space acquisition enterprise will continue to improve both commercial and allied integration.

MISSILE WARNING AND MISSILE TRACKING

Strategic and theater missile warning and missile tracking capabilities provide indications and warning to protect the Homeland, joint forces and allies abroad. The evolution of threats to on-orbit systems force us to re-think both how we protect and defend our strategic assets, and how future strategic capabilities should be designed to mitigate threats. The Space Force is partnering with combatant commands, the Missile Defense Agency, National Reconnaissance Office, and the Space Development Agency to design and build a resilient missile warning architecture for the collective defense of our Nation, joint force, and allies.

Next-Generation Overhead Persistent Infrared (OPIR)

We are designing and developing the future architecture for missile warning and missile tracking. Next-Generation Overhead Persistent Infrared (OPIR) will succeed the current Space Based Infrared System (SBIRS) and will provide increased missile warning, missile defense, battlespace awareness, and technical intelligence capabilities with resiliency and defensive features to counter emerging threats.

The ground system for Next-Gen OPIR, also known as Future Operationally Resilient Ground Evolution (FORGE), migrates satellite command and control to the Space Force's Enterprise Ground Services, modernizes Mission Data Processing to implement an open framework, and upgrades Relay Ground Stations to meet United States Space Command's operational requirements. We are using Middle Tier Acquisition authorities to rapidly prototype solutions. This pathfinder approach delivers the first resilient geosynchronous satellite and associated ground system in fiscal year 2025 and the first polar satellite in fiscal year 2028.

POSITIONING, NAVIGATION, AND TIMING

The Global Positioning System (GPS) remains the "gold standard" for positioning, navigation, and timing for the United States and the world. GPS underpins the global economy and our way of war. Adversaries have long recognized our dependence on GPS and have proliferated technologies to degrade, deny, and spoof GPS signals for civil and military users. We are pursuing modernization efforts across the entire GPS architecture to include upgrades in space, ground, and user segments. The Space Force's future GPS architecture provides more robust positioning,

navigation, and timing to the joint force, ensuring at least one technical generation advantage over any adversary.

GPS Space Segment

The Space Force is pursuing significant satellite enhancements to our GPS constellation, including higher-power military signals, new civilian signals, upgraded nuclear detection system payloads, and hosted search-and-rescue payloads. GPS Block III features improved signal strength and accuracy, increased anti-jam power, and a longer expected design life. The next block of GPS, GPS Block IIIF— available for launch in fiscal year 2026—will deliver regional military-code protection, a higher power signal in a given geographic area of operation to boost anti-jam capabilities for contested environments.

GPS Operational Control Segment Next (OCX)

Operational Control Segment Next (OCX) will develop and field a modernized ground system required for the command and control of GPS satellites. The OCX program is on track to meet current Acquisition Program Baseline cost and schedule milestones. OCX provides expandable, robust information assurance architecture to significantly improve cyber resiliency, enabling the latest military and civilian GPS signals, improving cyber protection, and allowing the system to evolve to combat emerging threats. We have completed product test, are currently progressing through segment integration, and will transition to operations in fiscal year 2022.

Military Global Positioning System User Equipment (MGUE)

Military GPS User Equipment (MGUE) will modernize user equipment to enable precision fires, safe navigation, and time coordination across multiple platforms in GPS-degraded environments. Military-code receiver cards embedded in weapon systems enable cyber-secure, anti-jam, and anti-spoof precision, navigation, and timing for the joint force and our partners. MGUE Increment one (1) completed developmental testing of the Army and Marine Corps lead platforms in fiscal year 2020. MGUE efforts support finalization of card design, testing, and integration with Navy and Air Force lead platforms. MGUE Increment two (2) leverages the MGUE Increment one (1) technology to the maximum extent while addressing the production of M–Code integrated circuits far into the future.

COMMAND AND CONTROL (C2)

Our top priority is to develop a Joint All-Domain Command and Control System to ensure United States Space Command and their joint and coalition warfighting partners have the capability they require to command and control in a contested domain. We have made considerable gains this year, fully integrated in, and helping lead, the Advanced Battle Management System (ABMS) effort. In recognition that legacy space command and control capabilities are insufficient for us to prevail in future conflict, we have prioritized the delivery of space command and control capabilities using a development, security, and operations (DevSecOps) approach to acquisitions. Leveraging the agile approaches of commercial software developers, we are rapidly developing cyber-resilient capabilities that enhance U.S., allied, and partner nation operational-level space warfighting capabilities against the adversary.

The initiatives below build and sustain the infrastructure required to connect sensors to shooters using machine-to-machine planning and tasking of warfighting capabilities.

Unified Data Library (UDL)

The Space Force built and delivered the Unified Data Library (UDL), a cloud-based, cyber-accredited, multi-classification data store that facilitates universal data access and serves as the foundational element of the ABMS data architecture in partnership with the Air Force. UDL provides all-domain secure Space Domain Awareness (SDA) data sharing from all Services and sensors to support space-focused Battle Management and Command and Control; it is also extensible to fit the needs of Joint All-Domain Command and Control. This effort adds long-term access to a wide variety of space domain awareness data sources including commercial, allies, and academia. The UDL creates unified, agile procurement of commercial products to bolster Combined Space Operations Center and National Space Defense Center operations. Additionally, it protects satellite tracking data by seamlessly integrating defensive cyber operations.

Space C2 Open Architecture Operational Prototype (SCOOP)

The Space Force has also delivered the Space C2 Open Architecture Operational Prototype (SCOOP) program, a modern cloud architecture that is connected to 40

sites nationwide. Leveraging the Department of the Air Force's prior work on open architecture standards, SCOOP delivers a command and control capability for our most pressing needs, with the ability to connect into other domains, and serves as the foundation of our next generation C2 capability.

Space Domain Awareness (SDA)

Space Domain Awareness (SDA) is the cornerstone of our ability to command and control warfighting capabilities. The Space Force budget invests in new terrestrial radars, optical sensors, and space-based capabilities and commercial partnerships to increase the quantity and quality of space observations. A robust SDA architecture improves our indications and warnings, ensures freedom of action in space, and enables joint and coalition options to defend critical space capabilities. Additionally, investments in secure connectivity and data sharing tools improve our collective understanding of our adversaries' capabilities and intent.

Nuclear Command, Control, and Communications

As part of Department of Defense's efforts to modernize the nuclear triad, the Space Force will provide and modernize the space and mission control segments for worldwide, secure, jam-resistant, and survivable communications. We are pursuing digital development efforts for the future disaggregated strategic and tactical satellite communications systems to meet emerging threats in the 2030-timeframe. Evolved Strategic SATCOM will continue the strategic mission of the Advanced Extremely High Frequency (AEHF) satellite program with improved on-board resilience features, upgraded satellite capabilities, and cybersecurity features. We are leveraging rapid prototyping demonstrations to speed the delivery of the space segment to meet the warfighter need date in 2032.

Space System Prototype Transition (SSPT)

Space System Prototype Transition (SSPT) is a portfolio of programs that rapidly advance next-generation space capabilities to the warfighter at the speed of relevance. The portfolio leverages the commercial industrial base and demonstrates common defense through partnerships to enhance resiliency. One example is the development and integration of space domain awareness payloads on two Japanese Quasi-Zenith Satellite System spacecraft. The hosted payloads will increase sensor diversity and enable space surveillance and event detection over USINDOPACOM in the geosynchronous orbit regime.

Transition to Enterprise Ground System (EGS)

Enterprise Ground System (EGS) will enable the transition from a family of legacy stovepiped satellite C2 systems to an improved, open, resilient, and common platform. The effort funds modernized system interfaces, virtualization, and the translation of mission applications to ensure rapid response to emerging threats and integration of new capabilities. We continue to develop a Minimum Viable Product for foundational services and infrastructure to provide an initial Enterprise Capability. EGS will integrate multiple new mission partners within the Space Warfighting Construct & Missile Warning mission threads, scale multiple services for existing mission partners, and integrate them at one or more of three EGS locations. Continued investment provides foundational services and infrastructure to deliver enterprise-wide command and control services to all Space Force satellite programs. We are on track to deliver a fully integrated system by 2028.

ASSURED ACCESS TO SPACE

National Security Space Launch (NSSL) provides assured access to space for the Nation's most critical warfighting and intelligence capabilities. To meet the full set of National Security Space requirements, we must continue to competitively invest in domestic launch providers' development of new launch systems. The Space Force, National Reconnaissance Office (NRO), and the National Aeronautics and Space Administration have a coordinated strategy to certify new entrants to launch payloads, and continue to work with different launch providers to reliably meet our national requirements. The Space Force recently completed a 5-year strategy to bolster a commercially competitive market and transition to domestic launch systems by awarding the NSSL Phase Two procurement contract.

Leveraging this strategy, we are pursuing five National Security Space Launches to deliver warfighting capabilities on time. Following the outcomes of our Phase Two launch procurement strategy, we will continue to engage with industry partners regarding emerging launch requirements and technologies to invest in continued assured access to space.

National Security Space Launch (NSSL) Enabling Investments

We are investing in multiple public-private partnerships to develop enabling technologies for future space access, mobility, and logistics. Targeted investments in orbital transfer, on-orbit servicing, digital engineering, and novel on-orbit propulsion technologies will increase U.S. access and freedom to operate in space. We will continue to invest in providers of domestic launch services enabling our transition from non-allied space launch engines to domestic rocket propulsion systems. We will also continue technical maturation, risk reduction, and public-private partnership investment to expand domestic and cost-effective solutions for assured access to space. Additionally, the Space Force's research and development standards must reflect both the mission areas and the threat environment. The Space Force is building a more defensible and resilient space defense architecture by disaggregating on-orbit capabilities. We are building agile and threat responsive systems to complicate targeting. Additionally, we are building redundancy and resiliency countermeasures into the spacecraft and payload designs of our systems.

WAY FORWARD

Congress established the Space Force to ensure freedom of action for the United States in, from, and to space. This Department of the Air Force Posture Statement builds on fiscal year 2021 efforts in strengthening our ability to deliver flexible capabilities and strategic options at operationally relevant speeds to outpace emerging and dynamic threats. The Service's streamlined and integrated organizational design also creates new military options with the joint force, inter-agencies, industry, and our partners and allies. We are eager to work with Congress to build a common understanding of both the strategy and the investments needed to secure our Nation's vital interests.

Chairman REED. General Brown, do you have a statement, please?

STATEMENT OF GENERAL CHARLES Q. BROWN, USAF, CHIEF OF STAFF OF THE AIR FORCE

General BROWN. Good morning, Chairman Reed, Ranking Member Inhofe, and distinguished Members of this Committee. I am humbled to serve as the Nation's 22nd Air Force Chief of Staff and to represent 689,000 total force airmen serving today. Your support for them and their families is greatly appreciated. It is an honor to be up here before you to day with Acting Secretary Roth and my fellow service chief and long-time friend, General Jay Raymond.

As a general officer, I have spent the last decade-plus in positions overseas and/or supporting operations in the Middle East, Europe, Africa, and most recently the Indo-Pacific. With this context, I have been able to look at the Air Force from varied perspectives, and I personally have seen the reemergence of the strategic competition and how the character of war has changed. The strategic environment has rapidly evolved. We have not changed fast enough to keep pace.

The People's Republic of China has recognized modern warfare as a contest among systems, not individual units or platforms. Accordingly, Secretary Austin has prioritized China as our pacing threat. Meanwhile, Russia continues to modernize its armed forces, increasing the capability of its missiles, strike aircraft, warships, artillery systems, and nuclear weapons.

Competition and future warfare will be conducted across all domains simultaneously. It will be a transregional and global undertaking with complex actions and actors intertwined. To account for these changes, our Nation, our Air Force must change faster than we have been. If we continue on a path of incremental change, our advantage erodes, and losing becomes a distinct possibility.

The Air Force recently updated our mission statement, to fly, fight, and win—airpower anytime, anywhere. To execute this mission, now and into the future, we must transition our Air Force and our operational concepts from today to tomorrow, and we must do so much faster. That is why I wrote "Accelerate Change or Lose," to call attention to the changes in the strategic environment, because the mix of capabilities that our Air Force has now, that were good enough yesterday, that are good enough today, will likely fail tomorrow. Our future Air Force must be agile, resilient, and connected, with the ability to generate near-instantaneous effects anytime, anywhere. Not just sometime, in some places, but anytime, anywhere.

Our Air Force is the only service that provides our joint teammates, allies, and partners the assurance of air superiority, the advantage of global strike, and the agility and rapid mobility through a range of capabilities most requested by today's combatant commanders. Additionally, the Air Force ISR and command and control capabilities provide the ability to sense, make sense, and act.

But while our past and current capabilities have sufficed for the last three decades, they will not effectively perform in tomorrow's highly contested environment. To address these challenges that will endanger our national security of tomorrow, the transition to the future Air Force design must start today.

Finally, we have a foundational responsibility to our airmen and their families. I remain focused on ensuring we are ready and that we have the tools, infrastructure, and talent management systems to provide the environment where all can reach their full potential. The future Air Force design advances our core missions and new approaches to warfighting that will holistically support every combatant commander and benefit every service chief. Investing in your Air Force is an investment in the Joint Forces.

Ladies and gentlemen, the bottom line is simple. We must modernize for the future and focus on capabilities that maintain our advantage, both today and tomorrow. For decades, we have collaborated with the Congress and our industry partners to modernize for the future. Now to fulfill our responsibility to ensure our national security, we must be willing to change, to make the tough choices required to deliberately transform our Air Force to the future force we need to compete, deter, and win. We have done it before, and I am confident together we can do it again.

Thank you for the opportunity to be here today, and I look forward to your questions.

Chairman REED. Thank you very much, General Brown. General Raymond, please.

STATEMENT OF GENERAL JOHN W. RAYMOND, USSF, CHIEF OF SPACE OPERATIONS

General RAYMOND. Good morning, Chairman Reed, Ranking Member Inhofe, and distinguished Members of this Committee. It is an absolute honor to appear before you today with Secretary Roth, the Acting Secretary of the Air Force, and General C.Q. Brown, the Chief of Staff of the Air Force, and a long-time friend and teammate. On behalf of the guardians stationed worldwide, let me begin by thanking you for the continued leadership and strong

support that you have provided to the United States Space Force (USSF) .

The United States is a spacefaring nation. We have long understood that our Nation is strongest, economically, diplomatically, and militarily, when we have access to and freedom to maneuver in space. For the past three decades, we have been able to take that access and freedom to maneuver for granted.

Unfortunately, as the National Defense Strategy and the newer Interim National Security Strategy identified, this is no longer the case. Both China, our pacing threat, and Russia are doing two things to eliminate the lead that the United States currently enjoys. First, they are rapidly developing their own space capabilities to provide them the advantages that we currently enjoy. Second, they are building weapons systems specifically designed to deny our access to space and the advantages that that provides. These threats include robust jamming of the global positioning system (GPS) and communications satellites; directed energy systems that can blind, disrupt, or damage our satellites; anti-satellite weapons, both in space and launched from the ground, that are designed to destroy U.S. satellites; and cyber capabilities that can deny our access to the domain.

Thankfully, with the strong support of Congress, especially this Committee, the United States seized on the opportunity to make needed changes to stay ahead of that growing threat by establishing the United States Space Force. This leadership is resonating globally and is already delivering results for our Nation.

We have slashed bureaucracy at every level in order to empower our guardians to move at speed and to increase the accountability necessary to operate in this domain. We have put together a forward-leaning human capital strategy, allowing us to build a more highly-trained, educated, and developed warfighting force, while taking care of our guardians and their families throughout their careers. We wrote our first doctrine to clearly articulate the independent value of space power to joint and coalition forces, and this importance is fully captured in the Department's new joint warfighting construct that is being developed.

Our international partnerships are stronger, with many of our partner nations following our lead and elevating space in their own militaries. We have created a new end-to-end capability development process from force design and requirements to acquisition and testing, enabled by a digital thread to move at speed while driving unity of effort across the Department. We have rejected stovepipes by actively working with the Joint Force, other government agencies, and industry to compete, deter, and win at an affordable cost.

The Space Force cannot and will not tolerate business as usual. Our demanding mission and lean force demand nothing less than a new standard. This budget reflects the shift of many Department of Defense space activities into the Space Force, yet we remain only 2.5 percent of the overall Department of Defense budget. We are committed to stretching every dollar to its limit to buy as much capability as possible for our Nation. Our Joint Force does not close on its warfighting requirements without space. Space is the force multiplier we must continue to invest in so that we can compete, deter, and win, and without it we risk losing.

This fiscal year 2022 budget balances the need to protect capabilities we have on orbit now while shifting and modernizing to a more defendable architecture in the future. It is an investment that provides assured space capabilities to our sister services, our Nation, and our joint coalition partners. These demanding tasks could not have been possible without sustained support from Congress, and for that I thank you. We cannot afford to lose space.

I am absolutely honored and humbled to serve as the first Chief of Space Operations and to have the opportunity to serve side-by-side with the incredible guardians that I am privileged to lead. It is because of them that our Nation enjoys the benefits of space today, and it is because of them, America's sons and daughters, that we will compete, deter, and win in the future.

I look forward to your questions.

Chairman REED. Thank you very much, General Raymond, and thank you all, gentlemen, for your testimony and service.

Since I had a chance to unleash a few questions out of order, let me ask one question to General Brown and then yield and recognize Senator Inhofe.

General Brown, Section 139 of the National Defense Authorization Act for fiscal year 2021 requires the Secretary of Defense to certify that the retirement of the U–2 or Global Hawks will not denigrate the capability of combatant commanders to carry out their missions. Has the Secretary of Defense made such a determination that would allow you to retire 20 Global Hawk aircraft in this fiscal year 2022 budget?

General BROWN. Chairman, we are actually in the process of working through that waiver. I personally have sat down with the Deputy Secretary of Defense to discuss the waiver package. I do not know exactly what the status is with the Secretary of Defense, but we are on the path to get that waiver approved.

Chairman REED. Thank you very much. Since I have had my question time, let me recognize Senator Inhofe.

Senator INHOFE. No, feel free to go ahead and take more.

All right. General Brown, first of all thank you for the discussion that we had in my office. I appreciate that very much, and I really learned a lot as to what we are really trying to get to. As I mentioned, China will have more stealth fighters in the Western Pacific than us in 2025. That is just one of the consequences of our very low number of aircraft procurements since 1990, and we can get into the discussion. I hate to keep comparing. My fear for what might be happening to that F–35, with what has happened and did happen back in about 2004 with the F–22. The only reason I keep bringing that up, I am about the only one around here old enough to remember that. So we want to make sure that we profit from the mistakes we made back at that time.

We need the total capability that we have, for the stress on the airmen, and to that point Mr. Kendall testified at his confirmation hearing to be Secretary of the Air Force, that the way to bring down sustainment costs is to procure more F–35's.

So, General Brown, I was surprised that no F–35's were on your unfunded priority list, and quite often I think we had 48, I believe it was, in the budget, and at time we used that same number be-

fore, 48 new F–35's. But we have also been having F–35's on our commitment for our unfunded priority list, and they were not.

So I would kind of like to know, first of all, I am sure there is some reason that we did not have more on our unfunded list this time as we have in the past, and then some kind of a statement as to your commitment as to the F–35 being the cornerstone of the Air Force. Now that is not just for us on this Committee. That is for our allies that are out there, because they are depending on that, because there is not another game in town.

Do you have any response as to why we did not have unfunded F–35's in this last budget?

General BROWN. Chairman Inhofe, I appreciate the conversation as well and I appreciate the opportunity to share with you, and with the Committee as well, as I have said publicly.

The F–35 is the cornerstone of our fighter fleet. Right now it is the second-largest of our fighter fleets inside the United States Air Force. At the same time, it is a very capable platform, and in watching the mission capable rates, the mission capable rates for the F–35 are on par with the rest of our fighter fleet. So not only for the United States Air Force but also for our allies and partners, and I personally engage with many of our allies and partners that are flying the F–35, and I know they feel the same way about the F–35.

Senator INHOFE. Yes, but I am just saying that you can not say it enough, because they have a big investment, a lot to rely on, on that vehicle. And so I think it serves a good purpose to remind them that yes, that is our cornerstone, it will remain that way, and we are going to increase that fleet.

General Raymond, we discussed this also in our meeting. One of the main reasons we created the Space Force was to focus the Department efforts in space. It seems to me, and I suspect I am not the only member up here on this dais that is a little confused in terms of what are we trying to—what is our goal right now? I know there are some things that we have done that we are going to be leaving with the services, some will be transferred over to Space Force. I am not exactly sure.

First of all, what is going to be transferred over, and then, secondly, what would be our timing on this, and what would it look like at the end? In the remainder of my time, just another 40 seconds, any comments about that? What is this supposed to look like, and when would we anticipate the signs are, therefore, to end that transformation that is taking place now?

General RAYMOND. Yes, thanks for the question, sir and I appreciated the opportunity to meet with you yesterday.

We are driving unity of effort across the Department. As you said in your question, I think that is one of the reasons why we stood up the Space Force. We have come to agreement with the Army, the Navy, and the Air Force on what missions should transfer over, and I appreciate the close partnerships that we have enjoyed with all three of those services.

We are going to begin bringing those capabilities over this year, and it is largely capabilities that the other services operated in space, and we will bring those over. What we wanted to be careful, though, is that we did not break the other services as we stood up

at Space Force. We did that work initially with the Air Force over the last year. We have brought all the mission sets from the Air Force now into the Space Force, and beginning in this fiscal year we will begin the transfer of Army and Navy capabilities into the force as well, to unite those efforts under one service.

Senator INHOFE. When would you anticipate that those expectations would be met?

General RAYMOND. Sir, that begins this year, and will bleed over into next year to finalize it. But over the next two fiscal years we will complete that shifting of capabilities from those other services.

Senator INHOFE. Thank you very much, General. Thank you.

Chairman REED. Thank you, Senator Inhofe. Senator Shaheen, please.

Senator SHAHEEN. Thank you, and Acting Secretary Roth, General Brown, and General Raymond, thank you all for being here this morning.

General Brown, I would like to begin with you, and I am sure you will not be surprised to know that I want to talk about the KC–46, because we had the opportunity, back in February, to fly with airmen from the Pease Air National Guard Base. It was really impressive to see how proficient they were getting with the new aircraft, and I understand that is happening across the country.

What I understand the Air Mobility Command has said is that units like the 157th Air Refueling Wing will begin taking on operational taskings from United States Transportation Command (TRANSCOM) this summer. When do you expect that to begin? Do you have a date?

General BROWN. Thank you for the question, and I also appreciate the opportunity to go with you on the KC–46 and meet with our guardsmen from New Hampshire.

It will be this summer. I do not have a specific date but I can get back to you on that. But actually, the KC–46 capability release, to be able to refuel, to be able to use those that have KC–46's that are already mission capable, the New Hampshire Air National Guard will be at the top of the list of one of the units that will be asked to help support.

Senator SHAHEEN. I am really pleased to hear that. Thank you. Can you talk about how investments in this 2022 budget are going to help to meet the goal of full operational status for the KC–46's, and how will it, or will it, address the remote vision system, and what is the update on making that operational, what the status is of that.

General BROWN. So in this particular budget as we continue to pursue and procure KC–46's, the 46 has been delivered here just this past week and we will continue on that path.

On the remote vision system, we are making great progress there with the Air Force engineers and with the Boeing engineers, to bring that capability, and it is staying on track to deliver fiscal year 2023 time frame. The other aspect of this is, as we discussed, is the ability to retire some of our KC–10's and KC–135's frees up the airmen that we are going to train to fly the KC–46's that are coming off the line, and so working all those in concert will be important to ensure we have the capability from the KC–46.

Senator SHAHEEN. Well, great. I am really pleased to hear that, and we are looking forward to having those folks who have been transferred out of New Hampshire back, to be able to fly all those missions.

General Raymond, this week National Aeronautics and Space Administration (NASA) Administrator Bill Nelson testified before the Commerce, Justice, and Science Appropriations Subcommittee, which I chair, and he talked about the need for the United States to continue to lead the world in outer space, and as we saw, China sending two astronauts into space this week, it really resonates that we have competition. He also talked about the importance of landing the next humans on the moon, and that being done by the United States, not by China or Russia.

So can you talk about how leadership in the civilian space—no pun intended—factors into your decision-making as you are looking at the decisions you are making for the Space Force, and how do you coordinate, or do you coordinate your investments with NASA, since many of those overlap as we are looking at what we are doing in space?

General RAYMOND. Yes, ma'am. It is a great question. I have had the opportunity now, on two occasions over the last week, to talk to new Administrator Nelson, former Senator Nelson, a great man, and we are lucky to have him as the Administrator.

We work very closely with NASA. We send people to NASA to be astronauts. We partner with them on launch. We partner with them on developing norms of behavior. We partner with them on developing training capabilities. In fact, NASA had some capabilities that they developed back in the Apollo days, and we said rather than having us build our own thing, why don't we just take that and modify it? So we have done it.

So I am very pleased with the partnership that we enjoy. We both rely on the same defense industrial base. We also have strong partnerships with commercial. We also partner with partners, and NASA has a very broad set of partners. We are in the partnership-building business, and that relationship really allows us to help develop our partners as well.

So I am very grateful for the partnership in NASA and look forward to working very closely with Senator Nelson, now Administrator Nelson, in the future.

Senator SHAHEEN. Do you agree with his analysis that it is going to be really important for the United States to lead in the next lunar landing?

General RAYMOND. I absolutely agree that it is important that the United States lead in all aspects of space. It is critical. It underpins every instrument of national power.

Senator SHAHEEN. Thank you very much. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Shaheen. Let me call upon Senator Fischer, via Webex.

Senator FISCHER. Welcome to all the members of the panel today.

Secretary Roth and General Brown, I appreciate the strong support this budget shows toward nuclear modernization, including critical programs like the Ground Based Strategic Deterrent (GBSD) and the Long Range Stand Off Weapon (LRSO). I am also

happy to see the Air Force moving forward with the Survivable Airborne Operations Center as a replacement to the E–4B. This was something that the Air Force studied for a long time, and it is gratifying to see action begin to happen here.

General Brown, let me say again how much I appreciate you traveling with me and a number of other Senators to Minot, North Dakota, and also to United States Strategic Command (STRATCOM) earlier this year. Very briefly, sir, do you continue to believe that the GBSD program is essential?

General BROWN. Senator, I appreciate the question, and most definitely. The program has been on track. It is essential to our strategic deterrence. It supports every one of our Operating Plans (OPLANs). [Inaudible] the foundation of our OPLANs to provide our nuclear deterrent. So it is very important to our security, and I appreciated the opportunity to engage with you on that topic when we had a chance to visit both STRATCOM and Minot.

Senator FISCHER. Thank you. Another vital component to our modernization effort involves extending the life of the B–52 through 2050, and equipping the plane's new engines is central to this effort. This budget requests significant additional resources in fiscal year 2023 for re-engining, and I am concerned that some people have portrayed this as an increase, as reflecting a 50 percent cost growth in this program.

Secretary Roth, that is not an accurate statement by those people, is it?

Mr. ROTH. No, it is not. We just recently approved the program, total program costs about $11 billion. That was a 9 percent increase over the previous estimate, and all that was an update to the estimate. Based on some of the virtual prototyping that had taken place in the program, a reassessment of the requirement, a look at the complexity of the integration of a commercial engine into the aging platform that the B–52 is, and a look at the current price of the industrial base and the realities of buying from the current industrial base.

So again, back to your question, it was a 9 percent increase in the total acquisition cost.

Chairman REED. Senator Fischer, there seems to be an interruption in your signal.

We will restore communication with Senator Fischer, but at this time I would like to ask Senator King if he would prepare his questions.

Senator KING. Thank you. It is always daunting to substitute for Senator Fischer.

General Brown, I am concerned about readiness and aircraft availability. There was a Government Accountability Office (GAO) report in the winter of 2020 that indicated various numbers for various airplanes, ranging from 70 percent down to 52 percent, sometimes even the 40 percent range. How do we improve that? That just strikes me as unacceptable. I do not know the comparable figures for the private sector, but my sense is if Delta Airlines had a 70 percent availability for their aircraft they would be out of business. Is it parts? Is it maintenance personnel? Is it intellectual property so that we can make our own parts? What are the bottlenecks on availability?

General BROWN. Senator, I appreciate the question, and like you I am concerned to make sure that we have the readiness that is required to support the combatant commanders, but also to ensure that our airmen are fully trained and capable to support our national security requirements.

One of the key factors that impacts our readiness is our weapons system sustainment, but I also look at the age, the average age of our fleet, which is about 28 years, in addition to about 40 percent or more of our fleet is past designed service life. So our focus on not only sustaining the current capability with our weapons systems sustainment investment, but at the same time being able to modernize. What we are finding is that our aircraft now, over the past 2 decades, are breaking about a third more, taking about 10 percent longer to fix. We have the right manpower from a maintenance perspective, but they are young. What I mean by that is we plussed up manpower there just several years ago. A lot of them are what we call at our entry level, and we are building that experience at the same time we are operating some older platforms.

Senator KING. But my understanding is part of the problem is parts availability, it can take ages to get parts from the manufacturer. Are we developing programs where we can build our own parts? I foresee a day where every depot has a 3D printer and we have the intellectual property as part of the purchase of the airframe in order to be able to make our own parts, so that we do not have to be at the mercy of the original equipment manufacturer (OEM).

General BROWN. Senator, we are doing that, and the intent is to do as much as we can with some of the 3D printing, particularly as we look at some of our older platforms, where we have diminishing supply from our vendors, because some of those vendors do not exist anymore. So taking opportunities to advance in our technology with the 3D printing is exactly one of the things we are working on.

Senator KING. Well, I hope that in future acquisitions part of the deal is always to purchase the intellectual property, so that we can make our own parts and not be dependent upon the supply chain.

General BROWN. That is exactly our approach, is we do our digital acquisition approach and be able to have not only access to the intellectual property but also using open-mission systems and agile software to be able to redesign very quickly, or adjust quickly, and print like you described.

Senator KING. Let me ask a question that Senator Fischer might have wanted to ask. Have you done a cost analysis of the new GBSD versus life-extension for Minuteman-III over a long period of time? What is the difference in cost?

General BROWN. Well, to date the difference in cost is $38 billion. It is $38 billion cheaper to do GBSD than to life-extend the Minuteman-III.

Senator KING. In addition to a cost savings, you are gaining a new generation of technology. Is that correct?

General BROWN. Exactly. For our nuclear portfolio, it needs to be safe, secure, reliable, and deter the threat, and with the GBSD it will be more safe, more secure, more reliable, and better deterrence against a threat, with a very capable system.

Senator KING. General Raymond, you mentioned unity of effort in your testimony. You are trying to coordinate the work within the development of the Space Force. Can you expand on that for a few minutes—actually, for 39 seconds?

General RAYMOND. For 39 seconds? Yes, sir. I will be happy to. It is good to see you, and thanks for traveling with me to Colorado. As we showed you out there——

Senator KING. Did you get your driver's license, John?

General RAYMOND. I did. Thank you. As I showed you out there, sir, we have made great progress in developing a strategy and then architecting and designing the force to meet that strategy. That is driving unity of effort across Missile Defense Agency (MDA), National Reconnaissance Office (NRO), Space Development Agency, the Space and Missile Systems Center. For the first time in my career we have got all five working towards a common vision now and a common architecture. That is the value of standing up this service, and that is going well.

On the requirements side, the Joint Requirements Oversight Council (JROC) just signed a memo that says the Space Force is going to be the lead integrator for requirements for this space across the Department, and so that is another big steps that is in close partnership with that force design work.

Then, finally, and I know I have got the red light [points to timer], on the acquisition side, we are driving unity of effort as we have designed our space systems command to bring disruptive innovators and align them with our more traditional partners, to have competition and go fast.

Senator KING. Well, I appreciate that, and I am out of time but I do—and perhaps I will submit a question for the record on the issue of joint capability acquisition, software, for example. We have Goldwater-Nichols for joint operation. I am concerned that we have got software being purchased all over the Defense Department that may be duplicative and may even be incompatible. So I will be submitting that question to you and the Secretary.

Thank you all very much for your service.

Chairman REED. Thank you, Senator King. Let me now recognize, via Webex, Senator Wicker, please.

Senator WICKER. Okay. Well, thank you very much, and I would have been happy to defer to Senator Fischer to finish her questions, but here we go.

I understand Senator Shaheen has already asked about the KC–46. But let me just say I appreciate the progress that is being made. But KC–135's continue to perform a majority of refueling missions. Last year's NDAA prohibited the Air Force from retiring the KC–135's until after fiscal year 2023. The budget submission includes plans to retire 18 KC–135's, and, of course, the Legislative branch will eventually make the decision there.

But I am concerned that the Air Force wants to move KC–135's to a backup inventory. I remain concerned about this, and it seems to me that your decision is budget driven rather than needs driven. If you had a higher top line, General, would you be forced to make this decision to retire 18 KC–135's, in a reversal of the clear language of the NDAA?

General BROWN. Senator, I appreciate the question. I really do believe that I would actually probably continue on the same path we are today, to transition from our aging KC–135 to the newer KC–46. That is to balance where we are headed as an Air Force, to transition to the future. In addition to that, the manpower in our airmen that operate and maintain those KC–135's are the same airmen that operate and maintain our KC–46's, and so I have got to have the ability to, as we bring KC–46's online, to send them to training. Because it is not a flip of a switch, and have them transition to this newer platform.

It will be a balance, and so right now we are on the path to have 179 KC–46's and still have 300 KC–135's in our inventory to meet the requirements laid out by the United States Transportation Command.

Senator WICKER. If you had more money, you still would make the very same decision?

General BROWN. Well, if I had more money I would actually reconsider. What I would also do is, actually, I am not so sure I would put it into tankers, because of all the other requirements we have as an Air Force. That is where the analysis that I have been working very hard with our staff on, to ensure that any decision we make is thought through very carefully, we have the analysis to back it up, because with a degree in engineering I am all about the facts and the numbers. That is what I actually do. I would not commit to you whether I would put it into tankers but I would take a hard look at tankers but also other capabilities that the United States Air Force requires.

Senator WICKER. Well, we are prepared to take a hard look, in this Committee, too. Just with regard to training aircraft, I understand that a plan is being finalized to retire the T–1 training aircraft, currently used to support specialized Undergraduate Pilot Training (UPT), and the Air Force intends to move to an increased reliance on simulator training. General Brown, what is the Air Force's plan for the future of the T–1 training fleet? In a recent forum, retired Air Force General James Holmes commented that there is no substitute for live training. That make sense to me. Are you concerned about the possible impacts that overreliance on simulator training could have on the quality of the new Air Force UPT graduates?

General BROWN. When I look at our UPT and our training there is a combination of things I am actually looking at. One is the T–1 and how we are looking at the T–1 here in this budget but also to the future of how long we keep it into the Air Force. It is also a balance of being able to use some of the technology of some of our simulators as well as using live flying, because you have got to be able to do some of both.

What I have seen, really, throughout my career, is the increasing capability of our simulators to make it more realistic. But there is nothing like hearing that engine noise, smelling that JP–8, and actually being airborne, and so we have to do a combination of both and ensure we get the best training for our pilots.

Senator WICKER. Well, does the current plan contain enough of that actual in-the-cockpit training?

General BROWN. Senator, I believe it does, and this is something that I do pay very close attention to, as I work with Air Education and Training Command, to talk to them about some of the initiatives we have, to ensure not only the production numbers but also the quality of our students when they graduate from pilot training.

Senator WICKER. Okay. Well, my time is about to expire. I will submit a question to you, General Brown, about an article written under the pseudonym of Ned Stark, concerning a call for senior officer reform in the Air Force, an insider's perspective on the promotion process in the Air Force. I will submit that to you for the record, sir, and thank you all for your service.

Chairman REED. Thank you, Senator Wicker. We are trying to re-establish connection with Senator Fischer. Once we do we will recognize her in order, to finish her questioning. But at this time let me recognize, via Webex, Senator Gillibrand, please.

Senator GILLIBRAND. Thank you, Mr. Chairman. Yes, I can attest the internet is down in the Senate right now, so I am using my phone.

I am very excited, for Secretary Roth and General Brown, to hear that the Niagara Falls Air Reserve Station (NFARS), one of my state's best defense equities, is a candidate for hosting the KC–46A Pegasus reserve component. In addition to the Air Station's strategic location, and that it possesses much of the needed equipment, the community around NFARS is one of the best in the country, that supports servicemembers, their families, and has an economy, amenities, and services, including health care and affordable housing, that allows for this to be a very strategic location.

Will you be looking at these types of issues as you make your decision about where to locate, and to what extent do considerations made by the Air Force include economic, educational, and health care options for spouses and dependents?

Mr. ROTH. As you may be familiar, we have what we call a strategic basing process, that is very analytically based, and uses a series of criteria, that include an assessment of the individual communities in terms of kinds of the educational opportunities, the opportunities for spouse employment, and those kinds of things. So it is part of our strategic basing process and criteria, and will be used across the board for all our basing decisions.

Senator GILLIBRAND. Thank you. On the issues of sexual assault in the military, it is something obviously this Committee has been looking at for the last 8 years, and I personally have been focused on trying to create reforms that I believe can begin to get at this scourge. One of the main reforms that we have settled on over the last 8 years is drawing a bright line at all serious crimes and taking those crimes out of the chain of command.

The reason why there is a bright line at serious crimes is because this is what our allies did—the U.K., Israel, Canada, Australia, Netherlands, Germany—for defendants' rights. They thought if you could have a less biased system, a more professionalized system, a more highly trained system, and certainly have the decision-maker not know the perpetrator or the plaintiff, that it would be able to be a fairer, more just system. So they did it for defendants' rights.

This reform is something that 66 Senators now believe is the right way to improve our military justice system so that justice is possible, through professionalization and through making sure that there is no bias.

This will help our military in two ways. One, I believe it will mean more cases will go to trial, sexual assault cases, and I believe that the right cases will be chosen, and so they might end in conviction, since we have a very low conviction rate right now.

Second, there has been a lot of talk the last few years about racial bias in the criminal justice system, in the military system, and that black——

Chairman REED. We are having, obviously, technical difficulties. I am told that the internet in Russell Building is down, and that, again, when we restore communication with Senator Gillibrand we will allow her to finish her questioning, along with others.

But at this point let me call on Senator Rounds, please.

Senator ROUNDS. Thank you, Mr. Chairman. First, gentlemen, let me begin by just saying thank you for your literally decades of service to our country.

General Brown, an issue this Committee consistently hears about, from the combatant commanders, is the lack of ISR capability. I understand this budget proposal asks to retire a number of JSTARS, along with some RQ–4's. I would like to hear your thoughts on how the Air Force will continue to meet the ISR requirements while you retire a portion of your existing ISR fleet, recognizing that right now we are not able to meet the demands of the combatant commanders today. Then I guess I would ask, also, as a follow-up on that, I understand the Air Force is no longer requesting to procure additional MQ–9 aircraft. Does the Air Force plan to divest these valuable assets in the near future as well?

General BROWN. Senator, I appreciate your question, and one of the things from the United States Air Force is the demand signal from combatant commanders for ISR from the Air Force far exceeds the capacity that we do have. So there is a great appetite for what the Air Force provides.

Part of that is how we balance risks between the United States Air Force and the combatant commanders. That is the dialogue I have with the combatant commanders. The aspect I look at, as we move to the future, is we have got to ensure that ISR is persistent, connected, and survivable. We have persistence today, not as connected as I want to be, and not as survivable as I think we need to be as we look to the future.

As I work with the combatant commanders it is how we make that transition. At the same time, how do we look at moving information, because it is really about the information to make decisions, versus a platform. Now I am thinking about terabytes of data that we move through other means, like Advanced Battle Management System. So it is a combination of those that we work together.

On the MQ–9, we are not procuring MQ–9's but we are going to still have MQ–9's in our inventory until the middle of the next decade. We still have deliveries that will occur into fiscal years 2024 and 2025. The MQ–9's that we do have, we are going to modernize to make them more resilient and connected, like I just described,

and those upgrades will occur on the MQ–9's that we do have, and they will be in the inventory until about 2035 or so.

Senator ROUNDS. Thank you, sir. Just continuing on, General Brown, reviewing the Air Force's budget requests I am concerned with the decreasing flying hours that are indicated, by about 7.5 percent. I am curious about your opinion about how this is going to impact how we can safely train pilots, and ultimately enabling the service to meet the National Defense Strategy objectives. I know there have been several reports in the press already where there has been a question as to whether or not these airmen are able to have access to aircraft and the numbers needed to maintain the proficiency right now. How do we add into that an anticipated 7.5 percent reduction in the budget for that?

General BROWN. Part of that 7.5 percent reduction was actually us going back and doing the analysis on under-execution of our flying hour program, going back to fiscal year 2019. We made some adjustments in fiscal year 2020, realizing that COVID—in 2021—COVID has impacted what we really executed, and so what we are really trying to do is normalize and get closer to our actual execution.

The balance of that is also to ensure that we have the right amount of training and flying hours to be able to execute and train our airmen, by using that funding that we take out of the flying hour, to ensure we actually have the availability of aircraft to match up with the flying hour program.

Senator ROUNDS. Thank you, General.

Secretary Roth, bomber inventory continues to be stressed, and the retirement of 17 B–1B's, while understandably necessary, depletes an already undersized and critical force. Are there any further planned cuts to the bomber force before adding significant numbers of the operational B–21's to the inventory?

Mr. ROTH. The answer is what we are going to do is manage the transition from the current force of bombers that we have to the ultimate bomber inventory that we will have, that will be dependent on the B–21 and B–52. So we will manage that in a conditions-based, events-based kind of manner, that as B–21's come online we will then start retiring B–1's and B–2's. We will not get ahead of our headlights on that. We will ensure that the B–21 is delivering on time and on schedule as we go forward.

The 17 B–1's that were identified this year were the oldest and most expensive to repair B–1's, that, to a large extent, were not flying anyway. That is where we are now, and we will stay there for a while, and then what we are going to look forward to is as the B–21 delivers we will start retiring B–1's, and B–2's.

Senator ROUNDS. Just a confirmation that it is your understanding that the B–21 is on time and on budget.

Mr. ROTH. To date it is an exemplary acquisition program. It has met every significant milestone to date. The first flight we anticipate is in fiscal year 2022, so the first airplane will actually get off the ground next year.

Senator ROUNDS. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Rounds. There appears to be a disruption of telecommunication services around the Capitol,

so would urge all of our colleagues to come in person to ask their questions. That would expedite the hearing immensely.

With that let me recognize Senator Hirono, please.

Senator HIRONO. Thank you, Mr. Chairman. Secretary Roth, last year it was announced that the Hawaii Air National Guard had been selected to have one of four national offensive space control squadrons. I understand that the Hawaii Air National Guard is in the process of establishing the 293rd Space Control Squad based on the Pacific Missile Range facility on Kauai.

Mr. Secretary, I know that you are working with the National Guard Bureau on a plan to add a reserve component to the Space Force. What is the status of this plan?

Mr. ROTH. Yes. We have been working on that plan over the last year or so, and that plan has been sent to the Office of the Secretary of Defense, to the Secretary of Defense, for his approval. So as soon as we can schedule a session with the Secretary of Defense we plan to go through that with them, and then we will work with both the Office of the Secretary of Defense, ultimately probably the Office of Management and Budget, and will be forwarding a proposal, based on the Secretary of Defense's decision.

Senator HIRONO. So in terms of the status of a plan, then, would you envision it within this fiscal year, or next, that this plan would be in place?

Mr. ROTH. We actually hope it is imminent. I can have the Space Chief jump in here too and give you more details. We are hoping it is imminent. You know, we have done what we have to do, and so we are working with the Secretary's staff to get something we would anticipate this summer.

Senator HIRONO. "Imminent" is good right now. For General Raymond. Could you envision a missile tracking system in space replacing ground-based radars like Homeland Defense Radar-Hawaii (HDR–H)? If so, what is the timeline for these satellites coming online?

General RAYMOND. Yes, ma'am, first of all, we are doing work right now to design that, and we have united the entire Department towards that end, including the Missile Defense Agency, the Space Development Agency, Space and Missile Systems Center, and others. We are doing that force design work as we speak, and then we will begin to program for that this next budget, this shift. But to do that mission effectively, you have to do that from space. It provides the coverage and the ability to do that critical mission.

Senator HIRONO. So are you saying that this kind of tracking system in space will replace the planned HDR–H, which, by the way, I and other members have concerns that that is not even in the President's budget this year.

General RAYMOND. We are not looking to replace—it is kind of a dual path. Like today in missile warning, we have satellites that are on orbit and we also have missile warning radars, and so it requires both.

Senator HIRONO. Just so I can be clear then, you are saying it is not necessary to replace the ground-based defense radars but it could be in addition to. Is that what you just said?

General RAYMOND. Yes, ma'am. The space capabilities that we have today, for example, the missile warning detect launches im-

mediately upon launch, and then as the missiles fly they go through radar paths. It requires really both of those assets to be able to do that well.

Senator HIRONO. Okay. Based on your response I continue to have concerns that HDR–H is not in the budget.

For Secretary Roth, I note in your testimony a commitment to diversity, which, of course, I applaud. Do you have a matrix for determining whether your efforts to removing barriers to service, as you note in your testimony, are, in fact, resulting in a more diverse Air Force?

Mr. ROTH. Yeah. We actually have a data-driven process. We have established an Office of Diversity and Inclusion. The head of that office is a direct report to the Secretary. So there has been a plan outlined. We have something, for example, called the Barrier Working Group, and other kinds of groups that are looking at doing climate kinds of surveys and doing analysis on some of the trends in both the hiring trends and the promotion trends and those kinds of things.

We have an overall process that includes education, that includes training, it includes additional guidance to hiring panels and the like, as well. So again, our attempt is to do focused, data-driven kinds of initiatives to try to get at improving our posture overall.

Senator HIRONO. Does this mean that you can already provide us with information as to how you are doing on the diversity front?

Mr. ROTH. Let me get back to you. Let me check and see, in terms of—because, to some extent, the office—in defense of the office, it was just stood up this year. But we have some climate survey results from previous surveys that we have done. So we will work with your folks, if that is okay, and we will get with you and show you what we have.

Senator HIRONO. I am glad that this is happening, because having an intention to diversify does not mean anything unless you actually do those kinds of things that will result in diversity.

Thank you, Mr. Chairman. I do have some other questions for the record.

Chairman REED. Thank you, Senator Hirono. Senator Cotton, please.

Senator COTTON. Thank you, Mr. Chairman. Thank you, gentlemen, for your appearance today.

General Brown, as Congress considers this year's budget requests, and the Department of Defense's top line budget, it has become increasingly clear that the Services cannot rely on budget increases to acquire the capabilities the Nation will require in the future unless Congress takes action to change the President's Budget. If not, though, the Services will need to find money inside their existing budgets.

I understand that retiring certain older aircraft is critical to finding these funds to invest in what the Air Force seeks for the future, like F–35's, KC–46's, the Advanced Battle Management System, B–21's, and a new ground-based intercontinental missile. Can you please describe some of the risks that the Air Force will have to accept if it is not able to pursue those planned retirements of older aircraft?

General BROWN. Sure, Senator. I appreciate the question. I would categorize the risk in really four categories: modernization, manpower, maintenance, and operational.

On modernization, what it would do is really force us to continue to operate today's equipment and not be able to meet the requirements I expect from future combatant commanders.

On manpower, from a manpower standpoint, the airmen that we have today, that are tied up in some of these older platforms or legacy platforms, are the same airmen I am going to require to operate the newer platforms. So I have to be able to balance and train them to be ready to execute.

On the maintenance, what I see is our sustainment costs continue to go up, and as those sustainment costs go up it actually then decreases our buying power, to be able to use that money to purchase new equipment, and as you have that new equipment, it is a bit easier to maintain and sustain as we go forward.

Then last is on operational. There are impacts for readiness, based on aircraft availability, for example. I also think about our airmen and our joint teammates that we put at risk with capabilities that may not meet up against the threat. The last is really the risk to our national security objectives, when you pull it all together, what the Air Force provides with our joint teammates to make sure that we do the things that the Nation has asked us to do.

Senator COTTON. Those are all worrisome risks, I would agree. I think we should be mindful as a committee, too, about those risks, before we try to maintain some of these aircraft in the fleet, if it is time for them to go or we pursue future aircraft, occasionally for parochial reasons.

Is it also fair, General Brown, to say that some of the money you hope to save by these retirements is going to be spent on systems or weapons that we cannot discuss in this open forum?

General BROWN. That is correct, and I would be more than happy to come back in a classified forum to share some of those details.

Senator COTTON. I know what they are. You do not have to come back to me.

I want to make a point, though, here, that I think every system the Air Force hopes to retire is a system that flies openly, that we know about, that is in their local communities, and that can cause some political friction with Congress. Some of things we have talked about, we all know about and talk about openly, like the F–35 or the B–21, but some of them we can not, and that is hard for Senators and Congressmen to explain to our voters back home sometimes, especially if certain states or districts are going to lose an aircraft. I just think that we need to be mindful that there is a lot the Air Force needs to do in its classified setting, and that we may not always be able to explain that publicly, but the American people should keep that in mind, that you are doing a lot of work behind the scenes to keep this country safe as well.

General Brown, the Air Force is heavily invested in both the B–21 and the Long-Range Standoff weapon. Do you agree that both of these programs are required in their own right but also as a supportive and complementary system to each other?

General BROWN. I do, very much so.

Senator COTTON. Okay. Thank you. General Raymond, my time is almost up. I would like to discuss with you, at some point, the circumstances with Lieutenant Colonel Matt Lohmeier's relief out in the 11th Space Warning Squadron, if you will follow up with my office so we could have a conversation.

Secretary Roth, I think you probably will not be appearing before the Committee anymore any time soon, at least as one of the longest-serving officials in the Department of Defense. I want to thank you for many decades of service to our country, and should you come back as an expert in the private sector at some point in the future, I do not want to hear what we always hear from Bob Gates when we bring him back, which is—he is telling the biggest lie in Washington—"It is a pleasure to be back in front of the Committee."

[Laughter.]

Senator COTTON. But thank you very much for many, many years of dedicated service at the Department of Defense.

Mr. ROTH. Thank you, Senator, for your kind words.

Chairman REED. Thank you, Senator Cotton. Now we have restored communication with Senator Gillibrand. Let me recognize her for the remaining minutes of her questioning.

Senator GILLIBRAND. Thank you, Mr. Chairman. So, Secretary Roth, I just wanted to conclude the point I was making, that this idea of a bright line begins to restore two concerns we have with the military justice system: bias against survivors of sexual assault and bias against black and brown servicemembers, for both plaintiffs' rights and defendants' rights, and to mirror the reforms of our allies, that they have done over the last 40 years.

So I wanted to know what your take on this was, whether you have looked at this data in detail, what you think the current status of affairs is with regard to the Air Force, and what you hope to accomplish.

Mr. ROTH. Yes. Obviously we have looked at it and we have discussed it, and we are aware of the legislation that is working its way through the Senate. We are also aware of legislation in the House, and I think, as you are aware, we have an Independent Review Commission inside the Pentagon who is also coming up with a series of recommendations. Our commitment to all of you is we will work with you. We have some concerns, in terms of some of the breadth of what is being addressed, and we also have some process concerns.

But we agree there is a problem there. We need to fix it. What we are doing today is not working, and so we will work with everybody to find a way forward here, and arrive at what is best for the airmen and the guardians in the force.

Senator GILLIBRAND. Thank you. Secretary Roth and General Raymond, you did address this issue of the Space National Guard, and you discussed it already today, but I wanted to know what your perspective is on that and what you hope to create with a reserve component, and whether you think that might be able to address some of our recruiting challenges and our retention challenges for that best talent in the country.

Mr. ROTH. Yes. Perhaps I should defer to the Space Chief. But from my perspective, there are two elements to that. There are the

reserves and then there is the National Guard, and there is some nuanced differences in how we approach that. But I think with the Space Force we have a unique opportunity here for a new Space Force, a relatively small Space Force, to do things that are innovative and creative, that will move us forward, and might provide us kind of a pilot for what we could do with a larger force as well.

General RAYMOND. Ma'am, it is a centerpiece to our human capital strategy. I think it will help enable exactly the things that you highlighted. I would welcome the opportunity, since the red light is on, to come discuss this with you in great detail. I am excited about where we have landed on this, and I think it is going to be very beneficial to our service and to the Guard and reserves as well.

Senator GILLIBRAND. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Gillibrand. Let me recognize Senator Ernst, please.

Senator ERNST. Thank you, Mr. Chair, and gentlemen, thank you for appearing in front of the Committee today. We certainly appreciate your great service to our Nation.

I would like to start, obviously we have addressed the issue of operating in a budgetary environment that is very constrained, and with that comes certain challenges. But through those challenges I think it is up to us to find some opportunity.

Secretary Roth, Congress had granted DOD middle-tier acquisition authority, the 804 authorities, to save some time and money on acquisition programs. As I understand it, this particular authority is being used at least in the B–52 engine program.

So could we hear from you a little bit about some of the lessons learned, if that is effective, how that program is working with the use of the 804 authorities?

Mr. ROTH. Well, for us, I mean, the criticism of DOD acquisition, Air Force acquisition, specifically is that it is too bureaucratic, it is too slow, it is not agile enough, all those kinds of things. We look at the mid-tier acquisition initiative, Section 804, as an opportunity to be more agile, to be quicker, to be more responsive, more dependence on prototyping, more dependence on tailoring acquisition to individual programs, more emphasis on delegating management of programs down to the lowest level possible, rather than trying to run everything from the Pentagon.

We are actually very interested and excited about what that could bring to the table across the board, and so we have, I guess, for lack of a better word, bought in across the board in terms of doing that.

So the B–52 re-engining program is an example. We plan to use it, for example, for the A–10 re-winging program. For two major programs, two or three major programs that are in our modernization program. The Next Generation Air Dominance program, the Ground-Based Strategic Deterrent program, and the B–21 are all examples where we are using that kind of an approach married up with digital engineering, the digital trinity, in terms of open systems architecture and agile software, and the like.

Going along with that is some rigorous metrics that have to be put in place. Just because we are going fast does not mean we should not have any discipline and we should not be watching

these. But it also offers us opportunities to shift gears and go in a different direction if what we are doing is not working.

Senator ERNST. No, that is fantastic, and I appreciate that. My next question was going to be, can you give other examples where this is working, and so thank you for laying that out for us. Again, I think it is important that we understand, operating in this type of environment, that we need to find other ways of doing business, not to drop the standard but simply to find ways where we can save time and hopefully some dollars.

General Brown, I want to thank you again for traveling to Minot and Offutt, as Senator Fischer had stated. It was a phenomenal trip for many of us to witness our two branches of the nuclear triad. But I would like to address the National Guard for just a moment.

The President and the Secretary of Defense have both raised some alarm about the rising challenges that we see from some of our near-peer adversaries, primarily China and Russia, and, of course, a lot of dispersed terrorist threats around the globe. We have really been stretching our force to meet those challenges, and the Air Guard has seen its busiest year since World War II. The demand signal continues to increase, and the Air Guard is mobilizing with increasing frequency, both at home, domestically in the United States, as well as abroad.

The President's Budget does slash the Air National Guard training and component budgets, along with cuts to paid drill and individual training days, with the expectation that contingency mobilizations are on the path to pre-9/11 levels. What evidence do you have that would indicate the Air National Guard's usage reductions will go to pre-9/11 levels?

General BROWN. One of the things that we are going doing inside the United States Air Force is our force generation model, new force generation model that actually can better predict how we are going to actually deploy our forces, and at the same time put some discipline about how we execute. The Air Force and the Air Guard gets called on a lot. We have a lot of flexibility, as I said in my opening statement, to do air power, any time they work, and because of that we get called on quite often.

One of the things we are working with, both on the Active but also with the Reserve components, is to ensure we lay out a more disciplined process of how we actually execute and contribute that air power to support our combatant commanders. That will give us a more predictable tempo that gets to pre-9/11 levels, as well as the ability to train and maintain a level of readiness.

Senator ERNST. Okay. I appreciate that, and should we not return to this pre-9/11 op-tempo level then we certainly need to know that. We want to make sure that are supporting those reserve and National Guard forces.

So again, gentlemen, thank you so much for your time and your commitment to our great United States. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Ernst. Senator Tillis, if you are ready, you are recognized.

Senator TILLIS. Thank you, Chairman Reed. Thank you, gentlemen, for being here, and Secretary Roth, I want to associate myself

with my colleague, Senator Cotton, on your service and wish you the best.

I know you all are working in an environment where if we could wave a wand and give you all the money to fund the unfunded priority list and move some others up that you would welcome it, but you are not working in that environment right now. I know a couple of my colleagues talked about the KC–46A and the problems that we are continuing to have with the boom system. So I want to talk a little bit about the operational impact.

I know you are trying to balance some of the cost savings and deployment of future systems against meeting your mission, but just going down this list, if you have this information, how many KC–46A air-to-air refueling missions are being sourced outside the contiguous United States (OCONUS)?

General BROWN. I do not have an exact number for you, Senator, but we can get that for you. But we are using the KC–46 on a day-to-day basis to support particularly our training missions, to refuel, to get our pilots their currency and our brand-new pilots up to speed on their refueling.

Senator TILLIS. I have got a series of questions that you can maybe report back for the record, a similar question for the KC–10 air-to-air refueling mission.

One of the concerns that I have, I think it was the Air Force and TRANSCOM had previously stated that more than 25,000 hours of air refueling missions are not being supported annually, with the KC–46 not being fully operational. So we will submit a series of questions on that, because we just want to get it right. I am not here to preserve an old platform if you have full confidence in the future one, but the gap is what I am concerned about and the mission requirements, and potentially the training impacts, by not being able to train the way that they would fight, based on current capabilities.

General Raymond, I think at one point, I know we have talked about, in the space domain, the need for identification and attribution activities of our adversaries. I think at one point you also mentioned the concept of the need to punch back or retribution. You have got 2.4 percent of the total DOD budget. Number one, is retribution a part of your planning process, and number two, how do you manage that with a relatively small percentage of the overall budget?

General RAYMOND. Thank you for the question. First of all, in this budget we invest in our ability to characterize, as you mentioned in your question. We invest in what we call space domain awareness, to have an understanding of what is going on in that domain and to be able to characterize it. Just like any other warfighting commander, the U.S. Space Command Commander must have an opportunity to have the ability to understand what is going on in that domain.

The second big area is, he has to have the ability to command and control, so we are focusing on commanding and controlling as well.

Where we are really focusing on in this budget is four big priorities. One is you have to be able to defend what you have. Two, we have to shift. We have to modernize to a more defendable architec-

ture. Three, you have to develop the ability to impose costs, warfighting capability. Fourth, you have to look at what other new missions should go to space. We are really working to balance all four of those priorities. I think space is central to our ability to deter, and that space can help amplify the deterrence messaging and change the deterrence calculus of an adversary, in both denying benefits and imposing costs, and that is what we are balancing.

Senator TILLIS. I do not know whose lane this is in. I could assume maybe several different agencies. But we have had reports about the amount of space debris or space junk that we had out there. We had a report about a month ago of the International Space Station (ISS) being hit. Is that a part of your planning process, and is there budget allocated for that purpose?

General RAYMOND. Yes, sir. We act as the space traffic control for the world, the United States does. We catalog or track about 30,000 objects. We provide all the conjunction assessment, if you will, warning if two things are going to collide, and then U.S. Space Command does all that notification to keep things from hitting the ISS and other satellites. That is becoming a full-time job, because of the increased congestion that is going on and the increased number of objects that are launching into space.

Space domain awareness is critical to the warfighter. Space traffic control or space traffic management is something that needs to be shifted to another organization to free up U.S. Space Command and our operators that operate all those systems and doing the critical space domain awareness work that they need to do for our national security.

Senator TILLIS. Thank you. Secretary Roth, I am kind of curious of your perspective. Senator Gillibrand asked some questions about the Uniform Code of Military Justice (UCMJ) proposals that are coming through. There are some on military sexual assault but there is a larger proposal that would dramatically change the shift out of the command. Have you reviewed the commission report? I am saying this to everybody who is coming here that is part of the DOD, we need your feedback soon. We are about a month away from doing an NDAA markup that could have a sweeping change that may have some operational challenges and others.

I am over time but I would like to just send a message to Secretary Austin and all of the leadership, who I understand is in the process of vetting it. We need your feedback pretty quickly or it will not weigh into the decisions we are going to be making about a month from now. So I will just leave that as a statement rather than expect you to respond.

Chairman REED. Thank you, Senator Tillis. Let me recognize Senator Cramer, please.

Senator CRAMER. Thank you, Mr. Chairman, and thanks to all of you for being here. Since Senator Tillis just ended with that, let me just add my voice to the same admonition.

As you might imagine, General Brown, thank you for being here and thank you for going to Minot, I listened very attentively to your answers to Senator Reed about the retirement of Global Hawk 30's and the waiver. But I also noticed that in the modernization plan presented to the House Armed Services Committee, the Block

40 now is being slated for retirement beginning in 2025. Do we now consider the Block 40 a sunset system?

General BROWN. Not at the moment, Senator, and part of our process as well is we want to make sure we have a good transition. As we build the plan and as we have had a chance to talk about it, we look at the classified system we are bringing on. What I do not want to do is actually leave a gap. So it is balance between our planning factors for the Block 40 and the classified system we are going to bring on, to make sure that we have a smooth transition going forward.

Senator CRAMER. I have appreciated your great attention to the details of that with me.

Secretary Roth, the Office of t he Secretary of Defense (OSD) reported that the Air Force's budget is $212.8 billion. How much of that $212.8 billion does the Secretary of the Air Force actually control?

Mr. ROTH. $174 billion. $39 billion is what has been referred to frequently as the pass-through.

Senator CRAMER. Can we do something about a more transparent budgeting system that does not give this view that the Air Force is getting a whole bunch of money that they really do not control?

Mr. ROTH. Yeah. We are actually working with the Office of the Secretary of Defense to see if there are some things that could be done. There are classified reasons why that exists, and so we need to make sure that we do not uncover things that ought not be uncovered. But we are working with our colleagues on the Secretary of Defense's staff to see if there are some ways to do that.

I will say, when we come out with the budget and we do our budget briefings, come brief you and others here on the oversight committees, we immediately identify what we call the "blue budget," which is the $174 billion, and all our conversations from that day on is about the $174 billion.

But I take your point, and we are, in fact, discussing what is in the art of the doable with the Office of the Secretary of Defense.

Senator CRAMER. Well, and I think your answering that question that way, in this forum, is part of the process, so I thank you for that.

General Raymond, I really appreciate all the efforts that you have put in, in this last year and a half, really from day one, in how to involve universities in providing not only technological assistance but obviously a well-educated and hopefully prepared workforce, in many cases, for you to succeed. I was really happen to see that University of North Dakota faculty made a recent visit to Cavalier, to the radar station, and if Molly does not get you ND Today, she can have my copy to read all about it. It was very cool, and I really appreciate it.

But now that you have had these 18 months, do you think that Space Force's outreach and involvement with universities is where it needs to be, and what can we do to strengthen you in that regard?

General RAYMOND. Yes, sir, and I think it is where it needs to be. We have developed a University Partnership Program. It is focused on doing research together, developing people together, recruiting talent together. This first year we are going to have uni-

versities that are part of that University Partnership Program, and we look to expand that in the future. I think it is going to provide us great advantage, and we appreciate very much the University of North Dakota's partnership with us.

Senator CRAMER. Well, and as always, let us know how we can be helpful.

General Brown, I do have some concerns about the cuts in the fiscal year 2022 funding for the MH–139, and it is slated to replace, of course, our very aging UH–1 helicopters in Minot. I am told the delay is because of a delay in FAA certification. But unless you think the aircraft is not going to achieve its certification, why would we stop paying for it and building it, because we have seen other aircraft that have had those same FAA delays but did not have a pause in production. So I am kind of concerned about that. Is it really necessary? I do not know if you have ever flown in a UH–1 in Minot in the winter, but it is very unpleasant, and we would like to be able to keep that on track.

So do you have an explanation, other than the Federal Aviation Administration (FAA) certification?

General BROWN. Well, it is FAA certification, and the aircraft is a commercially-derived platform that we are putting military equipment on, which drives the additional certification. So we ran into an issue in part of the testing. So we are continuing testing on other parts of the aircraft besides the defensive system, that was causing some issues.

What we want to do is ensure we aligned our money with the delivery. The delivery delay is, I believe, just several months, is what we expect going forward. So we want to keep our focus on it, and we want to make sure that, as you said, flying a UH–1 in Minot in the winter is probably not what we want to continue to do, which is why we want to get the MH–139 on track.

Senator CRAMER. Thank you. Thank you all again for your service.

Chairman REED. Thank you, Senator Cramer. Now let me recognize Senator Warren, via Webex, please.

Senator WARREN. Thank you, Mr. Chairman, and thank you all for being here today.

General Brown, I had the opportunity to discuss the strategic basing process at Mr. Kendall's nomination hearing, and I would like to be able to do the same with you this morning. This is the formal process the Air Force uses to decide where to station new aircraft, like the F–35 or the KC–46.

The Air Force has gone to admirable lengths to ensure that when it is choosing installations for these aircraft issues like the quality of education available near a base, and licensure reciprocity are a big part of the consideration. This is, of course, important because the quality of schools available for their children and the ability of spouses to obtain jobs and sustain careers are critical issues that impacted servicemembers' quality of life.

So, General, can you commit to ensuring that the quality of education and licensing reciprocity are indeed factors in the strategic basing process?

General BROWN. Yes, Senator, they are.

Senator WARREN. Good. I just want to hear that. You know, these issues are part of base selection criteria for a reason, and they matter a lot to the servicemembers who do so much for our country.

One thing that is not formally considered during part of the process is the effects of climate change and extreme weather. A 2019 Pentagon analysis found that of all the services, the Air Force's base infrastructure is most at risk for climate change threats, such as recurrent flooding, drought, desertification, wildfires, and thawing permafrost.

Do you think it is worth making that another factor in the strategic basing decision-making process?

General BROWN. One of the areas we do look at is installation resiliency and how we take a look at not only the location but its capability and what kind of things we would have to do to make sure that that base or that location will be operationally relevant, as well as to ensure it can support the mission. As we look at that, we want to make sure that we do not put ourselves in a situation selecting a location that is going to be impacted by extreme weather or other things and the base locations are not well prepared.

Senator WARREN. So just to make sure I am understanding, you are saying yes, that we should take into account the climate change threat and the impact it could have on military operations.

General BROWN. That is one of the factors we do look at, the location, but we also look at the operational mission, and as you mentioned earlier also the education, the community, spousal licensure as well.

Senator WARREN. As one of the conditions. That is what I care about, and while we are on the subject of climate change, there is no way to address the climate crisis without confronting DOD's role as the largest consumer of fossil fuel on the planet, and the Air Force is obviously a big contributor to this, given the number of aircraft it flies.

General Brown, what is the Air Force's progress, researching and developing new engine technologies that will decrease your dependency on fossil fuel and reduce emissions without sacrificing capability?

General BROWN. Well, one of the things we talked about a little earlier today is the re-engining of the B–52, and that is one area that is going to save us about 30 percent of its fuel consumption from what it does today. The other aspect that we also take a look at is advancing technology with our simulators, the ability to do some of our training in simulators, particularly from some of our more complicated and high-end things that we do not want our adversaries to see and be able to take those into a simulation environment, which then saves us on fuel. So it is a balance of those as well as the technology, engine technology, we look at as well.

Senator WARREN. Okay, and what I am hearing you say is about reducing consumption, which I very much appreciate. But I hope that you are prioritizing research and development as well in the engine technology and how to reduce reliance on carbon-based fuels. That will help make sure that the Air Force remains flexible and agile for the future and reduce dependency on potentially vulnerable fossil fuel supply chains.

So I look forward to working with you and the incoming Secretary to help make this technology a reality.

General BROWN. Well, thank you, Senator. One thing I would highlight is our Agility Prime that we have been using to—it has been called a flying car, but that uses mostly electrical power, and it is an aspect we are also taking a look at of how we do that for logistics and other opportunities versus using the fossil fuels.

Senator WARREN. Well, that is the whole point. Let's invest in that research and development (R&D) and get this up and running. Our entire world is depending on it.

Chairman REED. Thank you, Senator Warren. Let me now recognize Senator Scott, please.

Senator SCOTT. Thank you, Chairman. I thank each of you for your service. I want to thank each of you for the benefit of the men and women who defend the freedom of this country.

First, can you all agree that it looks like we are facing increased threats around the world? You all would say that, wouldn't you?

General BROWN. Yes, Senator.

Senator SCOTT. We would all agree that Communist China is investing in building up their military, with one goal, is to actually compete with us.

General BROWN. Yes.

Senator SCOTT. As they build their economy, do you see any reason that they are going to slow down their investments?

General BROWN. I don't.

Senator SCOTT. So given knowing what Communist China is doing, do you all believe that the Air Force today is prepared to defend this country but also to help our allies, like Taiwan?

General BROWN. I believe we are prepared but I still think, as you just described, as the Chinese advance their capability, the United States Air Force needs to do the same, which is why I particularly am pushing on being able to modernize our capability to make sure that we are a credible deterrent, so you do not have a conflict in the Indo-Pacific.

Senator SCOTT. So I think, both for General Brown and Mr. Roth, as we have had these hearings, a lot of people on our Committee have expressed a lot of concern about the President's defense budget, his proposed defense budget, especially when you look at it as compared to other agencies, how he wants to spend the money.

So we have had a pretty good defense budget for the last few years, but do you really believe that this budget is going to give you the resources you need to be able to deter the actions of China, Russia, and other threats around the world?

Mr. ROTH. The short answer is yes, we are challenged. We need to get on with it, and in particular that is why we are emphasizing investing in future technologies. We need to take some reasonable risks today in order to make sure that we keep pace with the Chinese. Our concern is the pace in which they are modernizing. They seem to be quicker than we are. They have amped up their spending, and so as a number of us have said, we need to move out smartly. We need to accelerate. We need to buy things smarter, quicker, and more agile. So the answer is I think this budget provides a reasonable risk going forward, but we need to keep on that pace.

Senator SCOTT. General Brown?

General BROWN. I mean, I feel the same way the Secretary just described. That is exactly why I wrote "Accelerate Change or Lose," is if we do not pick up our pace, there is the distinct possibility of losing, and losing our advantage, at the least. It is important that we take a hard look at the budget. You know, ideally it puts pressure on us, but we have got to be smarter within the budget we do have, regardless of what the number might be.

Senator SCOTT. Thank you. General Raymond, does the President's budget allow you to develop and deploy the force you need, because clearly the threats in space are not decreasing. They are clearly increasing.

General RAYMOND. Yes, sir. The President's budget does, and this budget reflects a $2 billion increase in national security space, about $1 billion of that is shifting existing capabilities and resources from services into the Space Force, and then about $1 billion in new growth, focused on protecting and defending. I am very comfortable that I can protect and defend today, but that superiority gap is shrinking fast. One of the reasons why we established the Space Force was to move out at speed, drive unity of effort, reduce costs, and be able to stay ahead of that threat, and that is our main focus.

Senator SCOTT. Thank you. Do you all believe that we are ahead of the Russians and the Chinese in developing hypersonic weapons?

General BROWN. Thank you. I have asked the same question of our intel, and the aspect, I believe, is that we are—there are areas that we are ahead, but their testing is probably a little more advanced in numbers than we are. So this is again, this is an area that I am focused on. As a matter of fact, in this budget we have money to buy 12 hypersonic munitions by the end of fiscal year 2022. So we have got to continue to put pressure on ourselves to provide that capability as well.

Senator SCOTT. Do you believe that is enough?

General BROWN. Well, I want to balance it against the threat, and so at the rate that I see that our adversary is going, we need to make sure that we continue to build out our capability. But it doesn't necessarily have to be symmetric. I think there are aspects of using asymmetric capability as well. But having some hypersonic capability to go against our adversaries will be important.

Senator SCOTT. Do you think the American public realizes the threat of Communist China and what their goals are?

General BROWN. I do not. I would say, just based on my time as the Pacific Air Force Commander, and how much I learned in the 2 years I was out there, and where I sit today, the advancing capability of the Chinese is something that we all should be thinking about.

Senator SCOTT. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Scott. Let me now recognize, via Webex, Senator Rosen.

Senator ROSEN. Well, thank you, Chairman Reed, Ranking Member Inhofe, for holding this hearing. I would also like to thank the witnesses for their service, and, of course, for being here.

Today I would like to talk a little bit about, of course, Nevada, and Nevada's Air National Guard's 152nd Airlift Wing in Reno. It

flies legacy C–130's in some of the hottest temperatures. You can just look at the weather report today. I do not have to tell you what is happening all out on the West Coast. They fly in the highest elevations, the most challenging mountainous environments of any C–130 unit. Integral to their mission is flying the Modular Airborne Firefighting System, the MAFS. They supply those in support of the U.S. Forest Service. We know wildfire season is just upon us.

Upgrading the Nevada Air National Guard C–130 H fleet with C–130J's would have a substantial impact on their readiness and firefighting capabilities, in Nevada and the western United States, where every year we are plagued by devastating fires.

I was therefore discouraged that the Air Force was not considering MAFS when evaluating base candidates for the C–130J, and even more disappointed when Reno was not selected. Ensuring that the Air National Guard is ready to assist and respond to these emergencies, it should be a priority for the Air Force as you consider where to base more capable aircraft.

So Acting Secretary Roth, can you explain to me this decision not to consider MAFS when conducting your base evaluation, particularly in the West Coast where more fires, our open terrain, our longer distances to travel, we have in any other region in the Lower 48?

Mr. ROTH. Senator, we will take a look at that. I mean, your point is well taken. It is not part of our core criteria that we use in selecting the base. My commitment to you is we will work with you and see if there are ways that we can give that some consideration going forward.

Senator ROSEN. Thank you. I appreciate that. General Brown, can I get a commitment that MAFS will be part of the basing criteria in the future rounds of C–130J recapitalization? Again, all I have to do is point to weather reports today around the West Coast and around the country to see what is happening, and then understanding what Nevada does and what we are responsible for, we really need your commitment that Reno will be considered, given its need, its mission, its capabilities, and existing infrastructure to host the aircraft.

General BROWN. Senator, you have my commitment to have that considered as one of the criteria as we look at forward basing decisions.

Senator ROSEN. Thank you. I would like again, General Brown, to talk to you a little bit about the Air Force and its Nevada Test and Training Range (NTTR), the land withdrawal that you have requested for Nevada Test and Training Range. You requested a 300,000-acre expansion of the Nevada Test and Training Range within the Desert National Wildlife Refuge in order to modernize the range. You also asked for primary jurisdiction over the 800,000 acres of land currently shared with the refuge. The fiscal year 2021 NDAA renewed your existing withdrawal of almost 3 million acres of public land, and Senator Cortez Masto and I offered mandates on intergovernmental executive committees between the Air Force, U.S. Fish and Wildlife, and other allies and partners, to be sure that we are taking everything into consideration.

So, General Brown, as the Air Force pursues modernization of the range, can you commit to setting up our intergovernmental

committees and can you commit to exchanging information with all the collaborating state, local, and Tribal governments, along with our relevant environmental stakeholders on any proposals to withdraw Nevada's public lands?

General BROWN. Senator, you have my commitment, and I will tell you, since our last conversation about a month ago we have already had some of the interagency committee meetings to work towards the intergovernmental executive committee. That first needs to occur here in the next couple of months. But I am committed to work with you and other entities to work on the Nevada Test and Training Range, to ensure we are paying attention to all the equities of all the interested parties.

Senator ROSEN. Thank you. I appreciate that. I will just make a note that up in northern Nevada, in Fallon, the Navy has already scheduled those meetings, and so I hope it would be sooner than the next few months, as soon as possible.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Rosen. Let me now recognize Senator Sullivan, please.

Senator SULLIVAN. Thank you, Mr. Chairman, and I appreciate the great work that all the panelists are doing.

You know, I listen to some of my colleagues, and some of my Democratic colleagues continue to make this narrative that climate change is somehow an issue that is a bigger threat than China or Russia, that the military has something to do with.

Let me just ask, you mentioned basing locations in your exchange with Senator Warren. General Brown, you mentioned some climate change. Do you actually take into account strategic location for basing locations as well?

General BROWN. Senator, we do.

Senator SULLIVAN. Good. Is that a pretty high priority?

General BROWN. Strategic location and operational mission requirements are high on the list, and it carries most of the weight in our decision-making for strategic basing.

Senator SULLIVAN. That is what I would assume.

Do you remember the father of the Air Force, Billy Mitchell? Do you remember what he called the most strategic place in the world?

General BROWN. I do, and you remind me often. It is Alaska.

Senator SULLIVAN. Oh, okay. I am just checking. So that is pretty strategic. Just checking.

If DOD stopped using any fossil fuels, like today, forever, how much do you think that would reduce global greenhouse gas emissions?

I will just give you the answer. It would not.

So your mission is to fight and win wars, kill people, yes? Sometimes we have to say that. So I think it is really important to just stay focused on lethality. A lot of times you are getting pushed to do climate change, trying to fix climate change. The Department of Defense is not going to fix climate change. So that is what most people believe. I just want you to hear it from Senators who care about the real mission of the Department of Defense, which is to fight and win our Nation's wars, not somehow be the lead agency fighting climate change. It is not your role. You are not capable of doing it. I know you get pressured from the other side to do it all

the time, including the President, and I think it is nuts. So stay focused.

Can I get your commitment to stay focused on your number one mission? What is your number one mission?

General BROWN. The number one mission for the Air Force is to fly, fight, and win, provide air power, anytime, anywhere.

Senator SULLIVAN. Great. Thank you, General. That is a great mission.

Joint Pacific Alaska Range Complex (JPARC), and Senator Rosen was just talking about the Nevada Testing Range. I, too, am very concerned about the reduction in the Department of Defense's budget. But as you know, prioritizing that kind of high-end training and fighting, particularly fifth-gen, remains important. Can I get your commitment to prioritize and accelerate the investments in JPARC and the Nevada Testing Range—I think JPARC is about ten times bigger—to achieve the Threat Matrix Level 4 capability that I know you are very interested in, even though you are starting to see declining budgets?

General BROWN. Senator, you do have my commitment, and as you described, JPARC and the Nevada Testing and Training Range are the two ranges we have for the United States Air Force that we are looking to get to Threat Level 4, and another six that would be Threat Level 3. We have a strategy to be able to do that for both the Nevada Testing and Training Range and the JPARC.

Senator SULLIVAN. So I have a commitment—thank you on that—I have a commitment from the incoming Secretary, and I know we are going to do it together—you, me, and him—on the KC–46, the global basing decisions on our new tankers. You and I talked about this for over years.

So can I get your commitment when he gets confirmed to work with me and this Committee just on the new strategy that the Air Force has put forward on that? It has been a moving target, as you know, but it is an important issue for me and the country?

General BROWN. Senator, you have my commitment.

Senator SULLIVAN. What about the issue of the E–3? How are we looking at the replacement? You may have seen this big, big Russian exercise last fall where they actually had, I think it was either five or six Bear bomber runs in the Air Defense Identification Zone (ADIZ) of Alaska, where we had to go scramble six different sections of F–22's to go intercept these simultaneous incursions into our airspace by the Russians. It was unbelievable, the biggest one ever. As you know, there were no Airborne Warning and Control System (AWACS) up there. That was a really tough mission. Our great pilots in Alaska did it well, but they did it with no AWACS capability, which is tough.

What are we looking at in terms of the AWACS replacement, and how quickly do you think we can get that going?

General BROWN. There are a couple of things we are looking at, reference the AWACS. One is some modernization aspects of the AWACS, at the same time looking at advanced technologies to do airborne moving target indication from other capabilities. That technology is not quite there, so we are going to have to take a look at some type of gap, and we are looking at a handful of platforms that may have that capability to bridge to the newer technology.

That is not necessarily in this budget cycle but it is something that I am looking at, internal to the Air Force.

Senator SULLIVAN. Is the E–7 one of those that you are looking at?

General BROWN. E–7 is one of those candidates. It is actually flown by the Royal Australian Air Force. The Royal Air Force from the U.K. is also purchasing. It is a capable platform. I have actually personally flown on it. So it is one of those that I am considering.

Senator SULLIVAN. Great. Thank you, gentlemen, and, Mr. Chairman, I will have additional questions for the record.

Chairman REED. Thank you very much, Senator Sullivan. Let me now recognize Senator Kelly, please.

Senator KELLY. Thank you, Mr. Chairman. Senator Sullivan was just speaking of lethality and fighting and winning, which I too find incredibly important. So, General Brown, I want to discuss, just for a minute here, one of the most lethal aircraft in your inventory, the A–10 Warthog. We have spoken before about my serious concerns with the Air Force's proposed retirement of more than 40 A–10 aircraft in this year's budget, and as you know, I feel it would be a mistake to retire these combat-tested, combat-proven aircraft when we do not have a viable replacement to effectively conduct close-air support for our troops.

In addition to my disagreement with the Air Force's attempts to divest A–10's, I see some concerns with the plans to sustain the fleet the Air Force proposes to keep, and this is a real concern, because we all agree that A–10's are going to continue to support our warfighters into the 2030s.

Last year, the Air Force budget request indicated a requirement for $100 million in fiscal year 2022, and $100 million again in fiscal year 2023 to support the A–10 wing replacement program. Critical element, as we know, of sustaining the fleet. So I have to say I am concerned about the incredibly low amount of funding, just $44,000 budgeted for the A–10 wing replacement program in this year's request.

So, General, why has the Air Force not followed through on using the money it requested in fiscal year 2021, that Congress appropriated for wing replacements last year, and is the Air Force seeking to reprogram fiscal year 2021 funds?

General BROWN. Senator, we are not going to reprogram fiscal year 2021 funds. We are fully committed to the rewing of the A–10's as it was laid out in the budget. We are able to execute that over multiple years. By the end of this fiscal year we should be about 50 percent done, and we are going to continue on the path to upgrade those wings, as laid out in the budget and as we committed to.

Senator KELLY. Can you clarify the $44,000 request for A–10 rewinging in this year's request?

General BROWN. I do not have those details with me here today, but I will get back to you with more information on it.

Senator KELLY. Okay. Thank you. Thank you, General. I appreciate it.

General Raymond, in the remaining time here, great to see you again, General. I would like to touch on the security of U.S. assets

in space. You know, many Americans think of space distant place, but the ability for us to operate unhindered in space, it is a matter of national security. As Russia and China aggressively advance their space programs and develop capabilities that aim to disrupt or destroy United States space assets, it is critical that we are able to adapt to secure our systems and deter aggression. The Department's statement for this hearing affirms that both China and Russia have mobile ground-based laser systems and electronic warfare systems capable of jamming and blinding our satellite systems.

General Raymond, in your estimation, how good is our current understanding of threats to our satellite systems and our space architecture?

General RAYMOND. I think we have a really good understanding of the threats. They have been pretty visible. Both China and Russia have developed a full spectrum, the ones that you mentioned and also on-orbit, anti-satellite weapons, missiles that can launch from the ground and destroy satellites. There is a full spectrum out there. We have a good understanding of the threats. The work that we are now doing is to shift our architecture to a more defendable architecture, because the architecture that we have today was built for a different domain.

Senator KELLY. Do you feel that our defense and intelligence communities are working well enough together on this issue?

General RAYMOND. I do. In fact, one of the benefits of standing up the Space Force is that we are now going to stand up a National Space Intelligence Center that is going to be co-located with the National Air and Space Intelligence Center, and that is going to sharpen the focus on foundational intel. We still have a lot of work to do on that, both foundational and operational, but I am very comfortable that the intelligence community is focused on this.

The other thing that we have done, after establishing the Space Force, we became the 18th member of the Intelligence Community (IC), which also gives us a stronger seat at the table to get the intelligence requirements that we need.

Senator KELLY. Well, thank you, General. I am convinced that the only way we are going to stay ahead of our near-peer adversaries is by innovation, and one of the domains that we are really good at is space, and we just have to continue to move forward, out-innovate our adversaries, but also make sure we can protect the assets that we have.

General RAYMOND. I could not agree more. Thanks.

Senator KELLY. Thank you, General.

Chairman REED. Thank you very much, Senator Kelly. Let me now recognize Senator Blackburn, please.

Senator BLACKBURN. Thank you, Mr. Chairman, and thank you to each of you for being here today.

Being a Tennessean, I think you would each expect me to talk about Arnold Engineering and Development Complex, the AEDC, there in Tennessee. It really is the crown jewel of the Air Force testing infrastructure. You have got 68 wind tunnels there, you have got engine test cells that are there, arc heaters, space testing chambers. It is vital to the test work that has been mentioned here today. It is vital to hypersonics. The way we get ahead in hypersonics is we have testing.

So, General Brown, when we are looking at these facilities we are very concerned about upkeep and about maintenance. The state of that infrastructure is posing a critical risk to continuing this testing mission for high-priority items like hypersonic development. So talk a little bit about the importance—what is the priority with you, where does it stand when it comes to risk of not modernizing this structure, how does this affect retention and recruiting, what are you looking at this year for preventive maintenance? Because whether it is some of our AV's or hypersonics, Arnold is an important component.

General BROWN. As you described, very important work that occurs there to advance our capability in hypersonics, and so the United States Air Force works with the OSD Test and Resource Management Center that helps drive the investment on places like Arnold, in particular. As the Air Force Chief of Staff, with our staff, is working very closely with them to outline the requirements to upkeep the capabilities there, not only for hypersonics but the future capabilities that might come our way as well.

I think a key aspect of this is in order to retain that great capability, of the minds that work there, is we have got to have the right infrastructure and tools there. So it is the combination of that investment that helps us to be able to do that. I do not have details but I will be able to get you details.

Senator BLACKBURN. Let me ask you about, because I think one element important to this is the ground test asset board. So speak to that a minute, and I would like to have you commit to work to stand up that asset board, because we need to make certain that all resources are available to maintain facilities like Arnold.

General BROWN. That ground asset test board is internal to the Air Force Test Center, and it is something that I will commit to look at how we might broaden that beyond just the Test Center but broader within the Air Force.

Senator BLACKBURN. Okay, and also, the 2 percent Plant Replacement Value (PRV), reaching that and having budgets sufficient to reach that 2 percent, there is concern over that because your unfunded priority list is to the tune of $320 million. So where are you on having sufficient budget to reach that?

General BROWN. The combination of the budget we have, plus the $320 million that we have in the unfunded priority list will get us to that 2 percent.

Senator BLACKBURN. That does get you to the 2 percent.

General BROWN. Yes, ma'am, it does.

Senator BLACKBURN. Okay. Even though you are not reprogramming funds.

General BROWN. That is correct.

Senator BLACKBURN. Okay. All right.

General Raymond, we were pleased to see you make a trip to Vanderbilt University. We thank you for that. We do believe that the projects that are being done there in the partnership programs are vitally important. Involving the warfighter, the front-line warfighter is important. Having this collaboration with academia on cyber and electronics R&D we think is vital. My hope is that you are going to continue to keep these programs robust and work to recruit talent for these technologies.

General RAYMOND. Absolutely. I agree. Not only did I visit Vanderbilt, I also visited Tennessee State. I also had the opportunity to talk to the Tennessee Science, Technology, Engineering, and Mathematics (STEM) Initiatives group. I think there are about 500 elementary school and high school teachers. It was a great visit. We are eager to partner on the University Partnership Program and research consortiums that we have had. In Vanderbilt, I was very impressed with what I saw.

Senator BLACKBURN. As you are aware, if you visited with the STEM Consortium, we have not only our elementary schools and middle schools but also groups like Boy Scouts are now starting STEM Scouts and programs of that nature to encourage our young people to consider STEM, and certainly our military is a great opportunity for them to consider.

General RAYMOND. Ma'am, after that visit I had a gentleman that worked in the studio where I did the session with the STEM Innovation Network. He just joined the Space Force. So we are excited to recruit, and we are excited to have him on the team.

Senator BLACKBURN. There you go, and we are so pleased to have Space Force with the Huntsville present, which is in our region. I know that Senator Tuberville is going to talk with you about that. So thank you all so much.

Chairman REED. Thank you, Senator Blackburn. Senator Hawley, please.

Senator HAWLEY. Thank you, Mr. Chairman. Thanks too to the witnesses. Thank you for being here. Thank you for your service.

Mr. Secretary, if I could just start with you. Rosecrans Air National Guard Base in my home state is home to the Advanced Airlift Tactics Training Center, which offers training courses, not just to U.S. airlift units but also to our allies and partners, something I think not a lot of people know.

Give me a sense of how you see the Center's work contributing to the Air Force's broader efforts to strengthen those relationships with allies and partners.

Mr. ROTH. As you noted, it does, in fact, make a significant contribution, and at this point we do not have any intent to change the current mission.

Senator HAWLEY. Very good. Thank you for that. General Brown and General Raymond, let me shift now to our pacing theater and our pacing threat, which you have been getting a lot of questions on today, which I am glad to hear about.

Secretary Austin and Deputy Secretary Hicks have both testified before this Committee that the United States has got to maintain its ability to deny a Chinese fait accompli against Taiwan. I am a broken record on this subject, and I am not going to disappoint here today. So do you agree with that testimony that we must maintain that ability to defeat the Chinese fait accompli? Go ahead, General Brown.

General BROWN. I do.

Senator HAWLEY. Great. General Raymond?

General RAYMOND. I do.

Senator HAWLEY. General Brown, there are a few ways we can think about denying a fait accompli in a Taiwan scenario. Most of them involve sinking or disabling key elements of the Chinese fleet

in a relatively short period of time. How would you envision the Air Force executing or supporting this kind of a sea denial mission?

General BROWN. Well, the first thing you have got to have in order to be able to execute the sea denial mission is a level of air superiority. So I think that is important that is the aspect of our Next-Generation Air Dominance fighter, so we can actually get our bombers in, because you have a defensive threat from China to get too close to where that maritime capability might be that you are trying to sink. To get our bombers in, and then also the ability to actually have the awareness of where things are, and that goes into joint, all-domain command and control, and the Air Force's contribution to that is the Advanced Battle Management System. It is how we move the data around between not just internal to the Air Force but within our joint partners, to be able to do that. Then the last is actually having the weaponry to go with that, and so Long Range Anti-Ship Missile (LRASM) is one of those. It is very focused on this particular mission set, but it is also working with the rest of the joint team as we bring that.

Then the last piece of this is logistics. In order to maintain that campaign we have got to be able to do the logistics, and be able to do it under attack. So, it is connecting the Joint Force, generating the combat power, and being able to execute the logistics under attack in support of the complete joint team from the Air Force, supporting both our Navy friends and our allies and partners as well.

Senator HAWLEY. Very good. Thank you for that. You mentioned LRASM. Let me ask you about it. The Air Force requested funding for just five LRASMs last year, if I am not mistaken. This year, I think zeroed out, so no LRASM request. Give me a sense of why this is. Why are we cutting funding for anti-ship missiles, given how important it is, as you just stated, for our sea denial capability?

General BROWN. Well, part of this is actually how we balance out not just sea denial but other capabilities that we have for missions, and hypersonics, the conversation we just had, is high on that list for us, to be able to do that. But we will continue to look at LRASM as we bring that on with other capabilities as well, for advanced weapons.

Senator HAWLEY. Got it. Yes, I am concerned by the cuts there in what I think is a pretty key capability. You mentioned JADC2. Let me just ask you about that, General, while I have you. Can you describe the progress that has been made on the JADC2 over the last year and what your goals are for it, this coming year?

General BROWN. Sir, the JADC2 is more of the Joint Staff piece to drive between the services, the Air Force's Advanced Battle Management System. Over the course of the past couple of budget cycles we have been really focused on demonstrations and evaluations. We have gone through that part and now it is about delivering capability. The first step in that is a capability, one, to put that capability on the KC–46, to be able to connect with our fifth-gen capability and expand our node. Underlying that, though, is the digital infrastructure to move all that information I talked about just a minute or two ago. So that is important on how we do that.

The last—and I will not say last, but one of the other areas is our collaboration with the other services, with the Army in their Project Convergence, the Navy on their Project Overmatch, and the dialogue we have had together. Because if we cannot move information between the services we will not be able to do the maritime scenario that you just described. So it is important that we work very closely together to be able to have that capability.

Then I would also offer, with the Space Force, because a lot of that information moves through space. So I am very connected to General Raymond as well, to ensure we are able to make sure we are able to communicate and move information for decision-makers.

Senator HAWLEY. Very good. Thank you. Let me ask you about, briefly here, in my remaining time, the modernization agenda that the Air Force has embarked upon, General. The modernization agenda is focused on the early to mid 2030s, but this Committee has heard testimony, repeatedly and recently, that a Chinese potential assault on Taiwan or other contingency could happen much sooner than that. It could happen as early as the late 2020s, 2027, for instance.

Give us a sense of what the Air Force is doing to ensure that it is able to help on defeating that fait accompli scenario that we were talking about in the next 5 to 7 years, even as you pursue this necessary modernization that is going to take you out to 10 or 15 years from now.

General BROWN. Well, Senator, as I said in my opening statement, that transition needs to start today. If we do not start today, we will not be ready 5 to 6 years from now, or 10 to 15 years from now. I lay out 10 to 15 years from now so we can actually have something to put a goal on, but we have got to make that transition, to provide that capability, and we have got to do it much faster. This is why the Middle Tier Acquisition authorities are so important to allow us to move much faster, in collaboration with Congress, this particular Congress, and with our industry partners, we have got to move faster. If things were to happen, to accelerate, we have got to be able to accelerate as well.

Senator HAWLEY. Very good. Thank you very much. Thank you, gentlemen, all of you, for your service. I will have a few additional questions for you, for the record.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hawley. Let me recognize Senator Tuberville, please.

Senator TUBERVILLE. Thank you, Mr. Chairman. The great thing about being last is everybody has already asked you questions, so I just want to ask a couple of things.

General Raymond, two things that I think that are most important in anything that we do is people and education. We talked today about you going around to universities and all that. I would like all three of you to maybe just chime in on this.

Our biggest threat is going to be in space in the very, very near future, if it is not today. Do we need a Space Academy, where we can have specialized skills and training? I have spoken at every academy in our country, leadership and organization. I am very proud of them. I just hope that we are—you know, we have got

great institutions in this country, but I think we need something maybe to just specialize with space.

General RAYMOND. I think one of the things, as an independent service you have to develop your own people. On the officer side, we only bring in about 300 or so folks a year. I am very comfortable that the Air Force Academy is developing those people for us. In fact 2 years ago, before the Space Force stood up, we only got 30 cadets out of the Academy. The first year, last year, out of the Academy we received 86. This year, 118. So we are coming up on almost a half, a little less than half of our total population is coming from the Academy, and the talent that we are getting is really top-tier talent, including a Rhodes scholar.

The Academy has a strong astro program, they have got a strong space program. I am very comfortable to that they are producing the officers that we need to come in the Space Force, and they are doing really good work.

Senator TUBERVILLE. Do you think we need something for contractors, future, not in military, for space?

General RAYMOND. Yeah, I think, Senator, there is great excitement going around the country about space, and it is in all three sectors. You have NASA going back to the moon and then on to Mars. You have got commercial space sector that is really alive and well and flourishing, and then you have the national security space sector.

What we are seeing, and what I am seeing as you go around to the schools is that there is an increased amount of folks that are applying for space-related STEM degrees, which is important. I think it is going to pay great dividends for our Nation. What we are trying to do with our University Partnership Program is partner with those folks and then attract them to come into the space program. I have talked to Administrator Nelson. I would really like to partner with them as well. I think there is great opportunity here for the youth of America.

Senator TUBERVILLE. You know, I am excited about going around to high schools, as I have all my life, and even the last few years in campaigning for this job I have got today, and we are seeing a lot of robotics courses being taught in high schools now. We are really advancing, and I think that is going to be the key to our survival, to be honest with you, is the education of our kids. Of course, they are all into computers and technology, and I just hope we are doing enough and planning on that for the future, because I do not want us to get to a point where we hit a wall and we do not have enough people trained for the future in space. But thank you for that.

General Brown, I know one of your first acts as Chief was to honor General Charles McGee, and Alabama is proud to host the Red Tails and the 187th Fighter Wing down at Dannelly Field. In the very near future, within 2 years, we are getting the opportunity to have transitioned in 20 F–35's, and we are excited about that. I just want your commitment to stay with us on that, and we want to see red tails on all those planes. I was there the other day, and I think it is going to be huge for recruiting in the future of having 20 F–35's there. A lot of young kids are kind of recognized with the red tails, and we have done a good job of that. We just need to keep

it going. So can I get your commitment to continue with the Red Tails and the things that we do at Dannelly Field?

General BROWN. Senator, you have my commitment, and great legacy from the Tuskegee Airmen there at Dannelly and there in Alabama with the Tuskegee Institute as well.

Senator TUBERVILLE. Well, thank you very much. Thank you for your service, guys. Thanks for being here today.

Chairman REED. Thank you, Senator Tuberville. Now we are trying to connect with Senator Duckworth via Webex. There may be some technical difficulties, but Senator Duckworth, you are recognized.

Senator DUCKWORTH. Thank you, Mr. Chairman. I logged out and logged back in so it seems to be working now.

Chairman REED. Very good.

Senator DUCKWORTH. Good morning, gentlemen. Thank you for being here today, and thank you for your service to our country.

As the Air Force modernizes its platforms to meet the demand of future conflict, particularly the possibility of a contested logistics environment in the Indo-Pacific region, we must consider the evolution of our air mobility and other combat support functions, in addition to our combat capabilities. Bottom line, without combat-credible air mobility we do not have a combat-credible deterrent.

General Brown, will you ensure that the Air Force addresses the gap in advanced air mobility capabilities suitable for distributed warfare in the Indo-Pacific, and when do you think the Air Force can deliver a plan for the future of air mobility, beyond the C–130, to Congress?

General BROWN. Senator, you do have my commitment, and this is an area we are looking at, particularly through the aspect of Agility Prime and other techniques to be able to logistics under attack. That planning process is in its very early stages and so I probably cannot commit to you today on when we would actually be able to present a plan to Congress. But what I would like to be able to do is continue to work with you and this Committee to work through a process to answer that particular question, not only in the capability but also the timeline of when we would be able to provide some more information on a study and some other techniques, and the technology to be able to look at how we do mobility, particularly in the Indo-Pacific.

Senator DUCKWORTH. Thank you. I am going to take you up on that. Thank you very much. You know, modernization is critical, but it must be balanced against present-day readiness requirements that are necessary to respond to emerging crises.

I am actually pretty alarmed that the Air Force plans to continue C–130 divestment from the Guard and reserve. It has not created a plan to replace the C–130 itself. Eliminating enduring platforms without even beginning to design their replacement I think is a huge gamble. Is it wise to wager our National Guard and reserves' operational capability and capacity and risk creating a huge gap that undermines our ability to respond to new emergencies? I mean, after all, over half the Air Force tactical and mobility airlift resides in the reserve components.

I truly believe that C–130 divestiture will limit the Joint Force's ability to meet the challenges outlined in the 2018 National De-

fense Strategy (NDS) and the Interim National Security Strategic Guidance, as well as the reserve components' ability to complete their domestic missions, which have only increased in recent years.

That is why I fear that we must not divest the C–130 aircraft in our reserve components without first ensuring that we retain the critical airlift capability and capacity that gives our commanders the operational flexibility to respond when called, both overseas and here at home. While I understand that the Air Force has difficult decisions to make in how it manages its budget, and I understand about the increasing costs of maintaining old aircraft, I flew the oldest Black Hawk in the entire Army inventory, the fourth off the production line, so I understand the challenges of that. I have, however, heard from my TAG [The Adjutant General] about how concerned he is that the Illinois National Guard will not be able to fulfill its duties to Illinois and to the country if there are further C–130 divestments without replacement platforms.

During his confirmation hearing, Mr. Kendall, the President's nominee to lead the Air Force, committed to working with governors and adjutants general of states with reserve component C–130 wings to ensure that they can fulfill their domestic missions and the Air Force's divestment plans do not eliminate C–130 capacity that is needed to deliver the air mobility our Nation has come to rely upon.

General Brown, will you make the same commitment as Mr. Kendall?

General BROWN. Senator, I will, and as a matter of fact, one of the areas that I am focused on is every time I travel to any one of the states, one of my goals is to either meet with or communicate, ahead or during the trip, with the TAGs for each of the states, to talk about where the Air Force is headed. So you do have my commitment.

Senator DUCKWORTH. Thank you. Another asset that is really important to our combat credibility are the KC–135's, and the Air Force plans to divest 18 KC–135's and 14 KC–10 tankers in fiscal year 2022 to support the KC–46 program. This budget significantly reduces aerial refueling capacity. Could you please outline the risks we are accepting in the short term, and is the KC–46 program appropriately funded to accelerate its fielding to close this gap?

General BROWN. Well, one thing I will tell you about the KC–46 is that it does have the capability to do a good majority of missions, to include air refueling, aeromedical, as well as cargo movement. What we are working very closely with the United States TRANSCOM on is an interim capability release to provide the KC–46 for day-to-day mission taskings that will allow for it to be able to support the retirement of our KC–10's and KC–135's. I have had great conversations with General Lyons most recently as about 6 weeks ago on this very topic, and we are both on agreement that the path we have right now on the KC–46 versus the KC–135 and KC–10 retirements are suitable to support his requirements.

Senator DUCKWORTH. Thank you. I am out of time but I would love to be updated on the Air Force's progress in fielding the KC–46 and to be provided early notification to myself, and to the Committee, actually, if any issues arise that may further delay the pro-

gram or otherwise increase gaps in our overall aerial refueling capability, and we take this after the hearing. Thank you.

General BROWN. Thank you.

Chairman REED. Thank you, Senator Duckworth. Thank you very much. Gentlemen, again thank you for your testimony. Thank you for your dedicated service over many years. I also want to thank you for opening up your schedule for a possible closed session after this session, but I do not think there were any issues that have come up within the context of this hearing that cannot be resolved by an individual contact with the relevant Senator. Because of that we will not have a closed session.

I thank you very much for your, again, service, and Secretary Roth, thank you. You have done a superb job, not only in this tenure as Acting Secretary but for years as a stalwart in the Department of Defense. Thank you very, very much, sir.

General RAYMOND. Thank you very much, Chairman.

Chairman REED. Gentlemen, with that I will adjourn the hearing.

[Whereupon, at 11:54 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

PEASE AIR NATIONAL GUARD BASE RAMP SPACE

1. Senator SHAHEEN. Secretary Roth and General Brown, in early May, the 157th Air Refueling Wing out of Pease Air National Guard Base in New Hampshire, responded to a short notice request to support the transfer of 12 Marine F/A–18s traveling to U.S. Central Command. The 157th provided 6 KC–46s to refuel the F/A–18s en route and Pease provided ramp space for 6 F/A–18s that were forced to make an unplanned maintenance stop during the refueling. Not only is that an example of the outstanding work of the 157th and the importance of the KC–46 for real-world missions, but it also emphasizes the importance of Pease as a strategic location. Will you commit to working with me on a plan to invest in Pease's infrastructure to ensure it can continue to perform the missions needed to meet commanders' requirements?

Secretary ROTH and General BROWN. We recognize the importance of the 157th Air Refueling Wing and Pease Air National Guard Base in New Hampshire as a strategic location. Since 2010, the ANG has invested in excess of $138 million in the infrastructure of Pease, including $55 million to ensure the installation is capable of supporting KC–46 mission requirements. This includes facility construction, hangar upgrades, maintenance and storage space, aircraft hydrant refueling capabilities and significant ramp improvements. This effort continues as emerging mission requirements are identified and validated for future MILCON/SRM consideration. The DAF will continue to work with the ANG and the unit to support mission requirements, and will be happy to discuss our plans with you as appropriate.

QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

SMALL BUSINESSES

2. Senator HIRONO. Secretary Roth, by partnering with AFWERX, the Air Force has recently awarded Small Business Innovation Research (SBIR) contracts that include technology research and development projects ranging from artificial intelligence to supply chain security. These types of initiatives coupled with the Air Force's annual Tech Warrior Exercise help small businesses bring much needed technological advancements into the Department. How is the Air Force removing barriers to entry for small businesses to access both SBIR contracts and other small business initiatives?

Secretary ROTH. The Department of the Air Force established a new "Open Topic" solicitation where any domestic small business may submit a concept it believes can benefit Air Force and/or Space Force missions.

AFWERX has since contracted with 1,433 companies, greater than 75 percent of which are new to the DAF SBIR/STTR program.

AFWERX Spark sponsors collider events designed to educate industry and academia on DAF requirements and capabilities. Collider events remove barriers for small businesses through better understanding of DAF user requirements, informing refinement of technology proposals and accelerating solutions.

3. Senator HIRONO. Secretary Roth, what is the Air Force doing to overcome the dreaded "valley of death," the gap between product's development and the product being funded as a program of record?

Secretary ROTH. The Department of the Air Force delivers technology to the warfighter through the AFRL Technology Transfer and Transition Office, innovation organizations such as AFWERX, and Vanguard programs, which are designed for rapid transition of remarkable new capabilities that hold promise for providing significant battlefield advantage.

The Department of the Air Force employs prototyping and experimentation in rapid acquisition pathways to achieve smarter and faster programs, shorten the requirement process, and move capabilities to warfighters more quickly.

The greatest limitation for programs exiting the valley of death is the lack of funds to continue programs. Early stage technology and prototyping is much cheaper than development and production.

4. Senator HIRONO. Secretary Roth, how can we get these advanced technologies brought into the Department of Defense (DOD) faster?

Secretary ROTH. The Department of the Air Force rebalanced the science and technology portfolio to emphasize a reduction in the time required to develop and deliver new transformational capabilities, while maintaining a strong enduring and enabling technology portfolio.

DAF Vanguard programs partner technologists, operators, and acquisition professionals at project inception, and gain corporate commitment to mature and rapidly transition technology.

AFWERX employs a partnership strategy with private sector companies to accelerate the technology development timeline and ensure commercial commitment.

AFWERX launched the Prime program with the specific purpose of overcoming the "Valley of Death" in collaboration with commercial investors to accelerate emerging technologies. Agility Prime, the first of these programs, is accelerating electric vertical takeoff and landing aircraft development.

The Department of the Air Force employs prototyping and experimentation to speed up the requirements and fielding process by enabling the understanding of how specific technologies can provide a competitive advantage, as well as to address the associated acquisition risks and costs.

Despite these efforts, funding limitations are the greatest obstacle to transitioning technologies of interest. Early stage development is inexpensive—allowing the science and technology community to fund many more technologies than the DAF can afford to take into production and fielding.

DELIVERY OF THE KC–46

5. Senator HIRONO. General Brown, in last year's National Defense Authorization Act, Congress set limits on the number of KC–135 and KC–10 refueling aircraft the Air Force could retire over the next three years as a result of acquisition delays and capability limitations the new KC–46 replacement aircraft is still experiencing. Has the Air Force made any progress on speeding up the delivery of additional KC–46 aircraft?

General BROWN. The KC–46A fixed price contract provides the Government with very limited visibility into Boeing's manufacturing processes. The recent impacts to Boeing's aircraft delivery schedule appear to come from the COVID pandemic and manufacturing quality assurance/control issues. The Air Force and the Defense Contract Management Agency are exploring available corrective options with our Federal Aviation Administration partners to help Boeing improve its rate of production and meet their delivery schedule. The Government retains the right to employ withholds or progress payment reductions if they deem that is the best mechanism to drive improvement in overall aircraft quality.

6. Senator HIRONO. General Brown, what is the timeline for correcting the KC–46's problem with refueling planes in different lighting conditions?

General BROWN. The Air Force is working with Boeing to resolve the problems with refueling planes in different lighting conditions as part of the Remote Vision

System 2.0 effort. The Air Force expects the Remote Vision System 2.0 will be ready to begin fleet retrofit in fiscal year 2024.

7. Senator HIRONO. General Brown, your opening statement mentions the importance of divesting from the legacy KC–135 and KC–10 aircraft quickly because it "hampers the fielding of the more capable KC–46"—but how does that position square with the ongoing capability issues the newer KC–46 is still experiencing?

General BROWN. We continue to work closely with Boeing on the Remote Visual System 2.0 fix and feel confident they will have a retrofit solution in the fiscal year 2023/fiscal year 2024 timeframe.

We have worked carefully with USTRANSCOM to ensure we can deliver the needed air refueling capacity while we develop the KC–46 enterprise and work through deficiencies in the platform.

The KC–46 is currently providing operational and training missions throughout the world. It can already refuel several platforms, move cargo and conduct aeromedical evacuation missions with some restrictions. DAF is implementing a conditions-based approach to operationalize the KC–46 for USTRANSCOM use prior to full operational capability declaration.

PILOT SHORTAGE

8. Senator HIRONO. General Brown, the Air Force has been experiencing significant shortfalls in both pilots and aircraft maintainers in recent years. What steps are you taking to address the pilot and aircraft maintainer shortage?

General BROWN. While the USAF is experiencing unprecedented high retention rates in both the Enlisted and Officer Corps, the aggregate success may mask areas where we have retention challenges like pilots and aircraft maintainers. In response to these continued challenges, we continue to offer targeted monetary incentives such as Selective Retention and Aviation Bonuses as well as non-monetary strategies focused on Quality of Life and Quality of Service.

Focusing on pilots specifically, the Air Force strategy is twofold: 1) sustainably produce at least 1,500 pilots per year; 2) improve long-term retention of pilots through a combination of policies, incentives and actions. This strategy centers on increasing pilot production capacity to meet our annual production requirement of 1,500 pilots year after year allowing all three Air Components the necessary number of pilots to meet their line pilot demand. Sustaining this production level over ten years will restore Company Grade Officer health as well as line pilot inventory health. The Air Force could expand production faster but it would create unnecessary and possibly, unmanageable challenges with training, absorbing and maintaining the force. Production of at least 1,500 pilots per year balances our need to reduce the shortfall at a manageable pace.

We expect we will produce between 1,500 and 1,600 pilots per year by fiscal year 23 through several key initiatives. These include: UPT 2.5, Accelerated Path to Wings (a T–1 only path to wings), Helicopter Training Next (a Rotary Wing Only Path to Wings), Improving Contact Simulator Instructor manning and compensation, Remote Simulator Instruction and the use of Aviation Schools (Alternate Path to Wings) as well as credit for civilian flight experience (Civil Path to Wings).

The USAF also instituted an aircraft maintenance retention strategy that has successfully contributed to the current 100 percent fill rate for our funded maintenance billets. This four-step retention strategy focuses on building and maintaining the right skill levels and specialties within its enlisted maintenance workforce. It focuses on cyclical evaluation of historical retention trends; on-going review and adjustments to retention goals by skill level and maintenance specialty; clear understanding of retention rates necessary to attain those goals; and establishment of metrics needed to track performance against those goals. Keeping maintenance manning and retention high relies on being able to coordinate timing for aircraft divestment with arrivals of new weapons system (F–35, KC–46, B–21, NGAD). Without the ability to repurpose our maintenance manning and retention levels will be put at risk again.

9. Senator HIRONO. General Brown, what efforts are you taking to recruit, retain, and remove barriers for a more diverse force, and in particular, what steps you are taking to diversify the pool of pilots serving in the Air Force?

General BROWN. Air Education and Training Command is responsible for recruiting the Air Force we need with an emphasis on Rated Diversity. Pilot retention, to include potential culture or bias problems impacting under-represented groups, is a focus area for the Air Force. The Service has leveraged a body of work that includes studies, advanced data analytics, and surveys to better understand all the factors

impacting the quality of life and service for our pilots. The most recent studies (e.g., RAND 2018) have explored historic challenges in recruiting a diverse pilot force by focusing on understanding demographic differences in pilot training attrition. This study, coupled with additional advanced analysis, resulted in a re-assessment of the Pilot Candidate Selection Model (PCSM). Specific actions targeted at improving pilot retention include decreasing administrative burdens for pilots within operational squadrons, broadening height range to allow for a larger pool of candidates (specifically women), developing gender-specific flight duty uniforms, and modernizing other dress and appearance rules.

MISSILE WARNING AND TRACKING

10. Senator HIRONO. General Raymond, the threat from North Korean ballistic missiles and the cutting edge hypersonic weapons that China and Russia are fielding is an ongoing concern, especially in Hawaii. The Space Force is collaborating with other DOD partners, including the Missile Defense Agency, on the Next Generation Overhead Persistent Infrared missile warning and tracking system—what can you tell me about your progress on this system?

General RAYMOND. In the face of existing and emerging threats, notably China, the USSF must continue to adapt space systems to a more mission-capable and defendable architecture. The USSF continues to successfully work with the Missile Defense Agency and the Space Development Agency to plan for and deliver Overhead Persistent Infrared (OPIR) capabilities focused on advanced threats. In the interim, the USSF is designing and developing the next generation of strategically survivable space-based Missile Warning OPIR platforms. The Next-Gen OPIR Block 0 architecture will provide more sensitive and more resilient Missile Warning capabilities to maintain an advantage over our adversaries.

The Next-Gen OPIR Block 0 program continues to make progress against an aggressive development schedule. Since initiation, the program has met all design milestones on time to support the warfighter's Initial Launch Capability requirement in fiscal year 2025. The ground system continues to develop the framework and applications required to operate the satellites, process the infrared data, and disseminate Missile Warning messages to National Command Authorities, the Joint Warfighter, and Allied nations.

Finally, to better detect and track advanced maneuvering missile targets, such as hypersonic weapons that China and Russia are fielding, the USSF, in collaboration with other stakeholders across the Department of Defense and the Intelligence Community, has completed a force design study for the Missile Warning and Missile Tracking mission areas. When the design work is complete, the acquisition community will develop a strategy and timeline to rapidly deliver the required capability to orbit.

11. Senator HIRONO. General Raymond, the Space Force has awarded an "other transaction authority" (OTA) contract to determine whether sensors for the Next-Generation Overhead Persistent Infrared satellites can effectively detect and track ballistic missiles. When are the results of this OTA expected?

General RAYMOND. In May 2021, the U.S. Space Force awarded Other Transaction Authority (OTA) contracts to Millennium Space Systems and Raytheon Technologies through Space and Missile Systems Center's Space Enterprise Consortium. The U.S. Space Force's Missile Track Custody prototype effort will examine Overhead Persistent Infrared (OPIR) sensor capability from Medium Earth Orbit through ground simulation. This effort complements Space Development Agency's and Missile Defense Agency's planned on-orbit demonstrations in Low Earth Orbit and informs USSF architecture feasibility studies.

The Missile Track Custody effort includes an 18-month base period of performance. During this time, the contractors will advance their concepts to Critical Design Review-maturity and deliver functioning Engineering Development Units to validate sensor designs. Additionally, the contractors will deliver Digital Engineering models which will reduce integration risk and support Missile Track Custody requirements development.

12. Senator HIRONO. General Raymond, does the Space Force have a projected timeline for when satellites will be a viable addition to the constellation of radars to track ballistic missiles?

General RAYMOND. It is important to note the Space Force currently operates a Missile Warning architecture that detects and tracks ballistic missiles. These systems provide an "unblinking eye" capable of warning the Joint warfighter and our Allies of an impending missile attack. However, to better detect and track advanced

maneuvering missile targets which emit reduced infrared signatures, the U.S. Space Force, in collaboration with other stakeholders across the Department of Defense and the Intelligence Community, has completed a force design study for the Missile Warning and Missile Tracking mission areas. When the design work is complete, the acquisition community will develop a strategy and timeline to rapidly deliver the required capability to orbit.

13. Senator HIRONO. General Raymond, can persistent overhead satellites eliminate the need for ground based radar systems for detecting and tracking ballistic missiles?

General RAYMOND. Current and future planned space-based overhead persistent infrared (OPIR) systems do not eliminate a need for ground based radar (GBR) systems to detect and track ballistic missiles today. OPIR and GBR systems are both required to provide accurate, timely and unambiguous warning and attack assessment of air, missile and space threats. Space-based OPIR systems will detect a missile launch first and cue the GBRs to improve our missile warning capability. Additionally, current OPIR satellites do not track cold objects in space.

Given the speed and nature of advancing threats, as well as the technologies and operational concepts used to detect and warn against those threats, it is premature to assess how missile warning and tracking will be provided in the future, and when, if ever, transition to a different approach would occur.

14. Senator HIRONO. General Raymond, how is the Space Force planning to protect critical intelligence, missile warning and tracking, and communications satellites in space from emerging Chinese and Russian threats?

General RAYMOND. The Space Force strategy for protecting critical satellites has three components: resilient architectures, ready guardians, and robust partnerships.

First, the Space Force continues to field systems with architectural resiliency. This includes fielding satellites with enhanced hardening and resiliency, fortifying ground and communication infrastructure, deploying proliferated constellations, and increasing our ability to rapidly reconstitute our capabilities. Resilient architectures reduce the likelihood and severity of a successful attack. The Space Force can also use non-technical means, such as maneuvering satellites to help protect from certain types of attacks.

The Space Force is developing guardians prepared to defeat Russian and Chinese threats. This requires warfighting focused intelligence, tactics, exercises, and training programs. Space Training and Readiness Command will consolidate all of these functions under a single commander who is solely focused on developing combat-ready guardians.

Finally, the Space Force continues to reinforce a safe and secure space environment by sharing data, forming partnerships with interagency, commercial, and international partners. This creates an environment where adversaries who would threaten U.S. satellites will find themselves entrenched against a diverse collection of partners committed to a safe and secure orbital environment.

We can address this more fully at higher classification levels.

FUTURE FIGHTER MIX

15. Senator HIRONO. General Brown, in February you launched a study into the service's future fighter jet force mix. After reviewing your budget request, it appears the Air Force is planning to focus research funds on a Next Generation Air Dominance aircraft while complementing the existing F–22 and F–35 fleets with more F–35s and the F–15EX. What steps is the Air Force taking to ensure the F–35's operational testing is not further delayed beyond 2022?

General BROWN. The Air Force continues to fully fund F–35 test and the fiscal year 2022 President's Budget request commits $1.05 billion to research, development, test & evaluation.

The Air Force will continue to work with the Joint Program Office to finalize the Joint Simulation Environment (JSE) schedule to complete initial operational test & evaluation and inform the new Acquisition Program Baseline. This updated schedule will be presented to the Defense Acquisition Executive in August 2021.

The Air Force will also continue to work with the JPO to explore opportunities to streamline and accelerate test activities wherever possible.

16. Senator HIRONO. General Brown, what is the timeline for procurement of the Next Generation Air Dominance aircraft and how will it fit in the Air Force's future fighter mix over the next two decades?

General BROWN. The Next Generation Air Dominance (NGAD) capability is currently in the Research and Development phase. NGAD will take time to fully develop and field.

NGAD will provide Survivability, Lethality, and Persistence across the entire range of military operations—seamless integration with ABMS—a mix of manned, unmanned, and even optionally manned aircraft and advanced stand-off weapons.

NGAD fits into the future fleet as a complementary capability to F–15EX, F–35, and F–16.

QUESTIONS SUBMITTED BY SENATOR ANGUS KING

ALL DOMAIN CAPABILITY DEVELOPMENT

17. Senator KING. General Brown and General Raymond, please describe your priority obstacles within the Department of Defense and the interagency that your services encounter when trying to develop Joint All Domain capabilities. Please specifically address obstacles regarding software development, data sharing and integration, network integration, risk management frameworks, Joint All Domain Command and Control, artificial intelligence, joint development environments, and cloud-based systems.

General BROWN. Many years of stove piped and rapid development of niche capabilities has challenged the DOD's ability to enable globally integrated operations. The U.S. Air Force (USAF) is focused on the Department of the Air Force's role in Joint All-Domain Operations. The Air Force has published Air Force Doctrine AFDP 3–99 titled Department of the Air Force Role in Joint All-Domain Operations (JADO), which also addresses Joint All-Domain Command and Control a key piece to Joint All Domain Operations.

As the USAF shifts from a network-centric to a data-centric enterprise, seeking to build information advantage as a key enabler to JADC2, data sharing is vital. It will require changes in how the USAF characterizes, secures, transports, stores, and exchanges data. Though theater-specific conditions will dictate tailored solutions, a common framework between the USAF and its partners is needed. Disparate, patch worked, "bolted on" data sharing policies, standards, and technology are a hindrance; in order to excel in competition and conflict moving forward, unity and cohesion of effort is a requirement.

As we develop Joint All Domain capabilities, we also have to remember that allies and partners will be integral to our success. It's not good enough to somehow bolt them onto our networks when a conflict begins—we need to include them from the beginning. This means that as we develop architectures and standards, we need to overcome some of our own instincts to over-classify our work so that we can include allies and partners from the start.

As we move into the Joint All Domain future, we also need to develop the Joint doctrine, policy, structures, training, and our people to fully realize these capabilities. Using new technology in old ways will not deliver decision superiority on its own.

General RAYMOND. The USSF is fundamentally focused on creating a modern, data-driven enterprise to achieve mission success in the space-domain and as a key contributor to joint multi-domain, interagency and joint warfighting success. In pursuit of Joint All-Domain capabilities, the USSF has encountered general challenges and obstacles within the DOD and across the interagency that include system complexity, limited personnel resources, and competing priorities. Coordination, communication, and cooperation are essential to address these in committed pursuit of true Joint All-Domain operations. Data sharing is vital to this effort within the USSF and across our joint, interagency, industry, academia, and international partners. As the first Service to be born-digital, we are providing several space and cyber domain capabilities, including the Unified Data Library, as a key contribution for all domain Command and Control (C2) capabilities. Additionally, we are focused on developing and refining space and Joint doctrine, policy, process, governance, tools, structures, training, and culture to fully realize the full potential of a Joint All-Domain future.

The USSF has encountered several specific challenges or obstacles in developing Joint All Domain capabilities. Software development is still constrained by competing demand for government and industry personnel and the time it takes to increase capacity. Data sharing and integration remain an immense system of systems challenge exacerbated by legacy DOD systems, the breadth of domain-specific demands, and service-specific Command and Control approaches. Network integration is a challenge given the diverse array of mission objectives, operational require-

ments, and interfaces. Although risk management frameworks differ, significant progress has been made to incorporate operational risk perspective in this area. Joint development environments are being fielded, but as of yet lack the overarching force design to drive enterprise changes. Cloud-based systems remain essential, but are challenged by security concerns, disparate Zero Trust implementations, and integration issues in a federated approach.

The USSF is addressing some of these challenges via people, policies, tools and partnerships to reduce obstacles in developing Joint capabilities. Within our authorities, the Space Force is raising the digital literacy of our workforce through Digital University to better understand and manage the latest technologies like cloud-based systems, artificial intelligence and software development and shift from a risk-averse to a more risk-informed culture.

We also continue to partner within the Department of the Air Force on common challenges.

The Department is working to shift from a network-centric to data-centric enterprise in order to build information advantages and advance data sharing.

At the end of the day, the Space Force must create a lean digital workforce that is supported by culture and processes we often see in cyber-secure focused industry. We will continue to work with Joint, interagency, coalition, industry and academia partners to resolve issues and develop solutions.

18. Senator KING. General Brown and General Raymond, would the Air Force and the Space Force be willing to work with Congress in reducing some of these obstacles, possibly by developing Goldwater-Nichols like reforms for Joint All Domain capability development, data sharing and integration, and network integration across the DOD and interagency?

General BROWN. We are always seeking ways to work with Congress in delivering better capabilities to the warfighter and streamlining our capability development process to accelerate change.

Within DOD, the services are closely coordinating through the Joint All Domain Command and Control (JADC2) Cross Functional Team, led by the Joint Staff, to pursue JADC2 capability development, data sharing and integration, and network integration. This effort includes joint capability development across the entire range of capabilities through a Joint All Domain Command and Control Implementation Plan.

In recognition that data sharing underpins our Joint All Domain capabilities going forward, we've also been working across the DOD and interagency on a series of high-level Data Summits to focus the efforts of our team.

On 20 July 2020, this group met at U.S. Special Operations Command to develop our DOD Reference Architecture 3.0 which will set common standards to ensure integration. In early August 2020, our cross-DOD and interagency data sharing and network integration teams will meet to further develop the DOD Reference Architecture 3.0. Our Department of the Air Force Rapid Capabilities Office, Chief Architect Office, Chief Data Officer's team, and other experts will participate to ensure a high level of integration.

General RAYMOND. Yes. The USSF is willing to work with Congress to efficiently, affordably, and responsively deliver better capabilities to the Space and Joint warfighters while streamlining our capability development, data sharing, and systems integration processes to accelerate change and ensure national security success.

QUESTIONS SUBMITTED BY SENATOR JACKY ROSEN

MQ–9

19. Senator ROSEN. General Brown, last week, Secretary Austin told me during the DOD Posture hearing that the Air Force is reducing the number of MQ–9 lines, but not the number of tails. I'm curious why there is any reduction at all when the Air Force today still lacks the intelligence, surveillance, and reconnaissance (ISR) capacity to meet Combatant Commanders' requirements contained in the 2018 National Defense Strategy. Can you please expand on what this reduction strategy is and whether there is soon to be a next generation program of record to replace the MQ–9?

General BROWN. In fiscal year 2022 the Air Force is only requesting a reduction in combat lines. This reduction is less than 10 percent of the current force presentation (4 of 60) and does not equate to reduction in aircraft inventory; no tails will be divested, no reduction in personnel, and no reduced squadrons. By keeping 60

combat lines, and not modifying the way the MQ–9 fleet is utilized, the platform will become more vulnerable and irrelevant, even in low-end conflicts.

The Air Force remains committed to providing MQ–9 intelligence, surveillance, reconnaissance, and strike capability to Combatant Commands and will continue to offer MQ–9 capability to CENTCOM for the foreseeable future.

While the MQ–9 provides utility today, it was not designed for operation in a future highly-contested environment. Modifying the MQ–9 force presentation is about balancing near and long-term risk.

The Air Force is looking at multiple systems that can replace the capacity and capability currently filled by the MQ–9. Continued modernization efforts seek to provide future warfighters the ability to access data and information at a moment's notice. Our systems must be able to penetrate contested areas and survive and the MQ–9, as we know it today, simply cannot.

QUESTIONS SUBMITTED BY SENATOR MARK KELLY

AMRAAM PROGRAM

The fiscal year 2022 request for AMRAAM production includes a significant reduction to the planned quantity for the Air Force and zero fiscal year 2022 funding for Navy production. The basis for these reductions was the previous schedule delay on the Form, Fit, and Function Refresh (F3R) cut-in for the next version of AMRAAM. It is my understanding that following the re-plan with the Air Force, the development program is meeting its schedule milestones. More than 850 employees in Arizona work on this program today, and I want to ensure we don't inadvertently cause a production break of this critical air dominance capability.

20. Senator KELLY. Secretary Roth and General Brown, the Air Force awarded Lot 34 (fiscal year 2020 funding) this spring, and plans to award Lot 35 (fiscal year 2021 funding) in July 2021, and Lot 36 (fiscal year 2022 funding) in July 2022. What is the confidence level of the Air Force on the F3R recovery—is it moving in the right direction?

Secretary ROTH and General BROWN. Yes, the program is progressing in the right direction. Due to hardware integration issues, the AMRAAM Form, Fit, Function, Refresh (F3R) program experienced a 13 month schedule slip. Since then, Raytheon Missiles & Defense (RMD) achieved a number of significant milestones and implemented a detailed plan to maintain schedule to the completion of the program. Additionally, RMD has demonstrated improvement in forecasting remaining work while burning down a backlog of tasks that were behind. This gives the government high-confidence in RMD's ability to meet its Functional Configuration Audit, a major milestone for the program, by January 2023. The program's critical path is holding steady and the program is confident in RMD's ability to execute the fiscal year 2022 budget.

21. Senator KELLY. Secretary Roth and General Brown, how will the Air Force and Navy ensure stable AMRAAM production across production lots planned for fiscal year 2021 to fiscal year 2022 without fiscal year 2022 Navy production funding? Please provide details on how prior year funding will be utilized to stabilize production rates.

Secretary ROTH and General BROWN. While the Air Force and the Navy pursued different funding approaches to address the F3R impacts to future production lots, both are intended to stabilize AMRAAM production quantities across Lot 34, Lot 35, and Lot 36. The Air Force chose to decrease AMRAAM procurement funding across fiscal year 2020, fiscal year 2021, and fiscal year 2022, while the Navy's approach was to zero-out fiscal year 2022 and carry over fiscal year 2021 funds to support both Lot 35 and Lot 36 procurement. It is imperative that the fiscal year 2021 Navy funding remains intact to execute this strategy and keep the production line above minimum sustainment rates. The services will continue to coordinate with each other and communicate with Congress to ensure these funding profiles are protected.

QUESTIONS SUBMITTED BY SENATOR ROGER WICKER

AIR FORCE OFFICER PROMOTIONS

22. Senator WICKER. General Brown and General Raymond, several years ago an anonymous Air Force Colonel writing under the pseudonym of Ned Stark published an article, "A Call for Senior Officer Reform in the Air Force: An Insider's Perspec-

tive," which criticized the service's officer promotion process. I think the grade of O–3 is too early to identify individuals as future general officers. This system could result in promoting below standard O–4s, O–5s, and O–6s to the general officer ranks. Do you believe the Air Force's current evaluation and promotion system best meets the needs of both the service and the individuals?

General BROWN. While the current Air Force talent management system has served us well, like all processes we utilize it is constantly evolving to improve and meet future developmental requirements. As a result, the Air Force has been overhauling its talent management system with a focus on ensuring we produce airmen capable of executing future Air Force missions as envisioned in the National Defense Strategy. This includes building leaders with the key Airmen Leadership Qualities (ALQs) we believe will be essential for success in the future fight like smart risk taking, innovation, leading inclusively and others. To set this course, the AF published 10 ALQs which form the foundation of new officer and enlisted evaluation systems currently under development. We also transformed the single Line of the Air Force promotion category into six developmentally focused categories adding agility for officer development and career progression. In 2020, we transitioned away from below the promotion zone consideration where we selected some officers ahead of their peers based on demonstrated and future promotion potential. This transition now allows officers' greater space for in-grade development and building deeper leadership skills and experience through less rigid career tracks. While not directly related, the Air Force certainly talked with and partnered with Colonel Jason Lamb, "Ned Stark," on many of the reforms we are undertaking to ensure our future leaders are just as capable as those we've been developing.

General RAYMOND. The Air Force has an excellent system it is building upon and evolving to meet its needs; however, the Space Force is much smaller and requires a more individualized talent management system. Until the Space Force is able to field the new system described in the Guardian Ideal, we will continue to use the Air Force system with some policy differences based in our unique Service requirements. We anticipate fielding our new developmental feedback process, appraisal system, and approach toward promotions before the end of fiscal year 2023. Mr. Jason Lamb, who wrote the referenced essay under the pseudonym Cole Ned Stark, was a principal author of the Guardian Ideal and is fully involved in its implementation as our Talent Strategist.

23. Senator WICKER. General Brown and General Raymond, what, if anything, are the Air Force and Space Force doing to address the issues raised in the article?

General BROWN. While the current Air Force Talent management system has served us well, like all processes we utilize it is constantly evolving to improve and meet future developmental requirements. As a result, the Air Force has been overhauling its talent management system with a focus on ensuring we produce airmen capable of executing future Air Force missions as envisioned in the National Defense Strategy. This includes building leaders with the key Airmen Leadership Qualities (ALQs) we believe will be essential for success in the future fight like smart risk taking, innovation, leading inclusively and others. To set this course, the AF published 10 ALQs which form the foundation of new officer and enlisted evaluation systems currently under development. We also transformed the single Line of the Air Force promotion category into six developmentally focused categories adding agility for officer development and career progression. In 2020, we transitioned away from below the promotion zone consideration where we selected some officers ahead of their peers based on demonstrated and future promotion potential. This transition now allows officers' greater space for in-grade development and building deeper leadership skills and experience through less rigid career tracks. While not directly related, the Air Force certainly talked with and partnered with Cole Jason Lamb, "Ned Stark," on many of the reforms we are undertaking to ensure our future leaders are just as capable as those we've been developing.

General RAYMOND. The Space Force is building upon the excellent work by the Air Force to expand the type and quantity of information available to the promotion board to help inform promotion recommendations. The approach that we outline in the Guardian Ideal has three primary components: performance appraisal, behavioral and competency assessments, and situational judgment testing. Performance management science and cutting edge approaches in the private sector have demonstrated that this will provide us better informed and data-driven assessments of who is best prepared for promotion. All of these tools are based on where a person is in the here and now, including the propensity for success, and not based on a record of performance largely based on past performance. The Department of the Air Force is one team who remain committed to developing our members and promoting the best candidates.

TRAINING AIRCRAFT (T–1)

24. Senator WICKER. General Brown, I understand that a plan is being finalized to retire the T–1 training aircraft currently used to support Specialized Undergraduate Pilot Training (SUPT), and the Air Force intends to move to an increased reliance on simulator training. What is the Air Force's plan for the future of the T–1 training fleet?

General BROWN. Over the last few years the Air Force has been analyzing better ways to train aircrews, to better prepare our pilots for the modern platforms now entering service (F–35, KC–46, MH–139, B–21, etc.).

The Air Force plans to transition away from some of the T–1 capacity in the coming years and will increase use of simulators and other Virtual Reality training devices. This new training program and syllabi are still in development.

SPACE FORCE FIRING

25. Senator WICKER. General Raymond, last month the firing of Space Force commander Lieutenant Colonel Matthew Lohmeier was widely publicized. According to a spokesman from the Space Force, he was fired due to comments he made in a podcast criticizing aspects of diversity training as being based in Marxism and discriminatory critical race theory. Regarding the firing, does it concern you that we may be stifling independent thinking and healthy self-critique within the ranks?

General RAYMOND. The specifics of Lieutenant Colonial Lohmeier's relief from Command are currently under review, and it would be improper for me to comment on the specifics of his case. However, independent thinking, self-assessment, and debate are encouraged in both the Air Force and Space Force.

CRITICAL RACE THEORY

26. Senator WICKER. Secretary Roth, last month I sent a letter to Secretary of Defense Austin expressing my concerns about possible political motivations behind this action. servicemembers are prohibited from participating in public broadcasts like a podcast if they do so as an advocate for partisan causes. If, in criticizing critical race theory, Lieutenant Colonel Lohmeier's comments were found to be partisan, it follows that the Department recognizes critical race theory as reflecting one side of a partisan debate, and if that is the case, it would be inappropriate for the Department to actively promote critical race theory through training initiatives at any level. Is it the Department of the Air Force's position that publicly opposing critical race theory represents prohibited partisan activity for servicemembers?

Secretary ROTH. The Department of the Air Force has not taken the position that publicly opposing critical race theory represents prohibited partisan activity for servicemembers. Lieutenant Colonial Lohmeier was relieved because a superior competent authority lost trust and confidence in his ability to command. Command is a privilege, not a right. Our Department of the Air Force Inspector General is conducting a comprehensive investigation which we will share with Congress when complete.

QUESTIONS SUBMITTED BY SENATOR THOM TILLIS

KC–10 & AERIAL REFUELING

27. Senator TILLIS. Secretary Roth and General Brown, the KC–46A Pegasus aircraft has yet to achieve full rate production and lacks a remote visual system that is fully functional during all light levels. Moreover, a KC–46 carries only 2,000lbs more transferable fuel than a KC–135 and carries 140,000lbs less than a KC–10. In an effort to reduce cost at the risk of mission failure, the Air Force seeks to retire legacy aircraft with fully functional and approved fuel transfer systems; specifically, KC–10s. In your opinion, are cost savings more important than strategic mission success? Put differently, should a legacy platform with proven, capable systems be maintained and utilized over a future system that has yet to meet primary mission requirements?

Secretary ROTH and General BROWN. Cost savings are not the reason the Air Force is transferring to the KC–46. The KC–46 will be a more reliable capability that ensures refueling capacity well into the future.

Also, the KC–46 provides capabilities the KC–10 cannot. These include capabilities for aeromedical evacuation, cargo missions, and its advanced communication system will extend ABMS to the edge of the battlespace. The KC–10 cannot be retrofitted to provide these capabilities in a platform with increased survivability, self-

protection, and situational awareness required to compete, deter, and win in complex security environments.

28. Senator TILLIS. Secretary Roth and General Brown, how many KC–46A air-to-air refueling missions are being sourced outside the continental United States in support of operational sorties (i.e. not training sorties)?

Secretary ROTH and General BROWN. The following numbers reflect the number of OCONUS sorties flown for each of the last few years. It includes regular component AMC tails only (not Air National Guard (ANG), Air Force Reserve Command (AFRC), Air Education & Training Command (AETC), United States Air Forces in Europe (USAFE), Pacific Air Forces (PACAF), Air Force Materiel Command (AFMC), or Air Force Special Operations Command (AFSOC)) that either took off or landed outside of the United States:

Calendar Year 2018: 0 OCONUS KC–46 sorties
Calendar Year 2019: 25 OCONUS KC–46 sorties
Calendar Year 2020: 123 OCONUS KC–46 sorties
Calendar Year 2021: 83 OCONUS KC–46 sorties (thru 31 May)

29. Senator TILLIS. Secretary Roth and General Brown, how Many KC–10 air-to-air refueling missions are being sourced outside the continental United States in support of operational sorties (i.e. not training sorties)?

Secretary ROTH and General BROWN. The following numbers reflect the number of OCONUS sorties flown for each of the last few years. It includes regular component AMC tails only (not ANG, AFRC, AETC, USAFE, PACAF, AFMC, or AFSOC) that either took off or landed (or both) outside of the United States:

Calendar Year 2018: 4,319 OCONUS KC–10 sorties
Calendar Year 2019: 4,546 OCONUS KC–10 sorties
Calendar Year 2020: 2,927 OCONUS KC–10 sorties
Calendar Year 2021: 983 OCONUS KC–10 sorties (thru 31 May)

30. Senator TILLIS. Secretary Roth and General Brown, how important is it that "warfighters train like they fight" and prepare for future deployments by tanking from platforms that they will encounter overseas and in combat?

Secretary ROTH and General BROWN. As Moody Suiter stated in the 1960's in response to combat losses in Vietnam, if we give our aircrew their first 10 combat sorties in a training environment, their survivability in combat will improve exponentially.

This concept applies across all elements of Air Force Operations and training. Our Aircrews must have training on all expected tankers before deploying. The capability to train like we fight is critically important. I think the Air Force has the right sight picture and is incorporating this concept into training appropriately.

31. Senator TILLIS. Secretary Roth and General Brown, the Air Force and U.S. Transportation Command have previously stated that more than 25,000 hours of aerial refueling missions are not being supported annually. Given that the KC–46 is still not fully operational, and the Air Force has already begun retiring some of the KC–10 fleet, I assume that there is still a significant shortfall in Air Force's aerial refueling capacity. What is the current shortfall? How does this impact training for aircrews and tanker availability for combatant commands?

Secretary ROTH and General BROWN. In April 2020, The Secretary of the Air Force provided the Congress with a report titled, "Fiscal Year 2020 NDAA Contractor-Operated Aerial Refueling Aircraft." That reported extrapolated "as many as 30,000 hours of aerial refueling missions are not being supported annually." That assessment resonates with the Joint Force's appetite for aerial refueling. However, requests for air refueling capability vary in criticality and are often unconstrained by resources. That said, the air refueling fleet remains stressed. USTRANSCOM manages the tension between available resources and requests for capability in order to prevent mission failure.

The transition to the KC–46 created an air refueling capacity bathtub, meaning the air refueling enterprise is at a low point in available capacity. However, acceptance of the KC–46 will ameliorate this capacity low point. Additionally, as forces withdraw from Southwest Asia, air refueling demands also decrease. As recently as 2017, USTRANSCOM supported 70 air refueling aircraft deployed to CENTCOM. By 2022, this will drop to about 35 aircraft. Additionally, the KC–46 crew ratio is higher across the Total Force when compared to both the KC–135 and about the same as the KC–10. When fully delivered and manned in 2029, roughly 160 more air refueling crews across the Total Force will exist, providing 10 percent more taskable aircraft on a daily basis than we had in 2019, before any aircraft were re-

tired. While we have a shortfall today, the trajectory is improving over time and will accelerate as the KC–46 reaches full operational capability.

USTRANSCOM's top priority is warfighting readiness and ensuring our component commands are capable of supporting their wartime missions. As such, training for a high-end fight is an absolute necessity. As operational activity decreased in Southwest Asia, a greater focus across the entire Mobility Air Force, including air refueling forces, shifted to full-spectrum readiness.

Since 2015, the average daily number of global air refueling missions was 139, and by the end of 2020, the average dropped to 100. This created opportunity for aircrews to conduct necessary high-end training. Tanker crew training is certainly necessary, but receiver pilot training presents a priority in order to maintain their combat edge.

While the number of tasked air refueling missions was about 100 a day in 2020, USTRANSCOM committed an additional 68 aircraft to receiver training. Looking to the future, air refueling workload is balanced with expected capacity, especially with the relief gained through use of the KC–46 interim capability release that can support many non-deployed and lower priority missions, freeing up fully capable KC–10 and KC–135 units to provide necessary support and refocus on training.

32. Senator TILLIS. Secretary Roth and General Brown, last year General Lyons testified before this Committee that the KC–10 and KC–135 legacy tanker retirements proposed in fiscal year 2021 would "create a capacity bathtub with significant impacts to combatant command daily competition and wartime missions, and negatively impact senior leader decision space for mobilization when confronted with a crisis." Congress prevented some, but not all, of these retirements in the National Defense Authorization Act for Fiscal Year 2021. Given that the KC–46 is still not fully operational, and aerial refueling requirements have presumably either increased or remained the same, would you support efforts to increase tanker capacity in order to meet aircrew training and daily combatant commander operational requirements?

Secretary ROTH and General BROWN. Reduced refueling requirements as a result of withdrawal from Afghanistan provides us a window for modernization of the force while also incurring minimal operational risk.

USTRANSCOM has confirmed that, with planned divestments, the Air Force will continue to have sufficient air refueling capacity to meet global Joint Force demands during the transition to a fully operational KC–46. No additional air refueling capacity is needed beyond the PB22 position to meet aircrew training and daily Combatant Command requirements.

33. Senator TILLIS. Secretary Roth and General Brown, I have serious concerns regarding the Air Force's desire to retire a significant number of legacy tankers prior to the KC–46 becoming fully operational. I am particularly concerned by the potential loss of the KC–10, which provides significantly more fuel offload than both the KC–135 and the KC–46. I understand that the KC–10 fleet has many more years left in terms of potential service life, and am concerned that prematurely retiring such a strategic asset would result in a loss of warfighter capability that cannot be regained for many years to come. Please describe the importance of the KC–10 to the Air Force's aerial refueling capability, and the potential impact to missions for Air Force, Navy, and Marine Corps pilots and aircrews if we cut additional KC–10s.

Secretary ROTH and General BROWN. The KC–10 has been a great aircraft, providing strategic air-refueling and airlift capabilities over the last 34 years; however, they are expensive to maintain. In order to ensure global reach for the Joint Force and air refueling capabilities that can generate combat power in austere and contested environments of the future, the Department of the Air Force is retiring the KC–10, certifying and fielding the KC–46, and maintaining upgraded KC–135s.

We do not have the manpower and resources for future Tanker capability unless we divest KC–10s in the near-term. Our operators and maintainers are a fixed resource and cannot fully operate and maintain two sets of tanker aircraft at fully operational capable levels.

34. Senator TILLIS. Secretary Roth and General Brown, I understand that, although the KC–46 has been cleared to conduct some aerial refueling missions, the aircraft will not be considered to be fully operational until major deficiencies such as the Remote Visual System are resolved, which likely won't be until 2023 at the earliest. I was surprised to learn that, despite this non- or semi-operational status, the KC–46s being delivered are being coded into the Primary Mission Aircraft In-

ventory (PMAI). Please explain why these aircraft are given the same inventory status as fully operational KC–10s or KC–135s.

Secretary ROTH and General BROWN. Primary Mission Aircraft Inventory (PMAI) is the correct designation for KC–46s that are being assigned to a unit, since the other categories (training, development, and special missions) are not applicable.

The Department of the Air Force and Boeing are on a path to correct remaining performance Category-I deficiencies as soon as 2023/2024, but the KC–46, consistent with operational restrictions, is currently demonstrating limited operational capability to conduct air refueling. The Air Force plans a conditions-based approach to leverage existing and planned KC–46 capability to provide predictable and sustainable tanker capacity through daily operational missions prior to Initial Operational Capability (IOC) declaration, lessening the tasks on the KC–135 and KC–10.

35. Senator TILLIS. Secretary Roth and General Brown, I understand that there have been conversations regarding possible uses for KC–10 aircraft prior to being fully retired and sent to the boneyard. I understand that one option is to provide the aircraft to industry, either through sale or as Government Furnished Equipment, for use in a commercial air refueling program. I understand that the Navy and Marine Corps have been successfully utilizing a commercial air refueling program for the last 20+ years. What is the status of those discussions? Shouldn't KC–10 retirements be halted until a decision is made on commercial air refueling? More generally, do you believe the Air Force should be pursuing a commercial air refueling program to address current and future aerial refueling shortfalls?

Secretary ROTH and General BROWN. The Air Force is currently completing an internal Commercial Aerial Refueling Study focusing on how daily tanker requirements are met within the force structure dictated by the Mobility Capabilities and Requirements Study 2020 (MCRS–20). If it is determined that additional tankers, crews, or flying hours are needed, then the Commercial Aerial Refueling Study will describe and evaluate sources to supply the additional need. However, the Air Force plans to continue KC–10 retirements since manpower and resources are needed to transition to the KC–46.

KC–10 retirements should not be halted until a decision is made on commercial air refueling. In coordination with USTRANSCOM, we have developed a sustainable way forward that maintains sufficient air refueling requirements as we bridge to the KC–46; for example, the Air Force's Interim Capability Release (ICR) process makes KC–46 capacity available for limited USTRANSCOM tasking.

36. Senator TILLIS. Secretary Roth and General Brown, the Air Force just issued a press release stating, "the Air Force is seeking companies that have the capability to deliver approximately 140–160 Commercial Derivative Tanker Aircraft—at a rate of 12 to 15 per year—to supplement the Air Force Tanker Aircraft fleet at the end of KC–46A production, and bridge the gap to the next Tanker recapitalization phase. The Commercial Derivative Aircraft must be operational by 2029." This while at the same time the Air Force is seeking to retire 30+ tankers, all of which would otherwise be operational in 2029. The KC–10, in particular, is well short of its end of service life. There are no recent, public service life estimates, but a Federation of American Scientists report from 1999, which has been cited regularly, projected 2043. A 2019 War on the Rocks article says the KC–10s are at only about 40 percent of their expected lifespan, which would put the service life well past 2050. It would appear that the Air Force does not expect the KC–46 to have a sufficient lifecycle to last until the next generation tanker (KC–Z) is fielded. If this is the case, and you have assets like the KC–10 that have more than 20 years left of usable service, why divest of fully operational tankers, like the KC–10, that can "bridge the gap" until the KC–Z is operational? From a monetary lens, is this a fiscally responsible use of tax payer dollars?

Secretary ROTH and General BROWN. The KC–10 has been a great aircraft, providing strategic air-refueling and airlift capabilities over the last 34 years; however, they are expensive to maintain. Maintaining the KC–10 fleet beyond the current divestiture plan increases demand for spare parts. Not right-sizing the fleet could jeopardize the planned resources for parts repair efforts to maintain a safe and air worthy FAA (Federal Aviation Administration) certified fleet.

In order to ensure global reach for the Joint Force and air refueling capabilities that can generate combat power in austere and contested environments of the future, the Department of the Air Force is retiring the KC–10, certifying and fielding the KC–46, and maintaining upgraded KC–135s.

USTRANSCOM concurs with the Department of the Air Force's decision to divest the KC–10 in order to facilitate the fielding of a fully operational KC–46 weapon system.

F–35 JOINT STRIKE FIGHTER

During his nomination hearing to be Secretary of the Air Force, Frank Kendall stated the F–35 is "the best tactical aircraft of its type in the world, and will be for quite some time." In response to Senators' questions regarding F–35 costs, Mr. Kendall said, "the key to keeping the cost down in an air fleet is getting the numbers up. There's a very strong correlation between the size of the fleet and the cost to sustain that fleet. So if there were one thing that I think would drive cost down overall, it's continue to buy."

37. Senator TILLIS. General Brown, the Air Force's fiscal year 2022 budget request included 12 less F–35 aircraft than were appropriated by Congress for fiscal year 2021, and the Air Force's Fiscal Year 2022 Unfunded Priorities List (UPL) did not include any additional F–35s. Further, the Air Force's fiscal year 2022 budget request for Advanced Procurement (AP) suggests the Air Force plans to procure no more than 43 F–35s per year beginning in fiscal year 2023. Do you disagree with Mr. Kendall's view that continuing to grow and mature the F–35 fleet at a rate consistent with Full Rate Production (FRP) can help manage costs and increase aircraft availability?

General BROWN. The Air Force must have the right mix of capabilities in the right capacity to ensure combat readiness for today and tomorrow. We need Block 4 F–35 modernization, enabled by Technical Refresh-3 (TR–3) hardware, on competition-relevant timelines to ensure continued F–35 relevance against China or Russia.

Generally, a larger fleet drives reduced sustainment costs per aircraft but the Air Force must weigh overall sustainment costs against the potential for increased retrofit costs and development costs for a fleet with multiple configurations.

Procuring additional aircraft before Block 4/TR–3 "cuts into" production, drives a retrofit bill, and is therefore not desired. As a cornerstone capability, the Air Force must retain the F–35's mission contribution, even if this requires offsets from within the program.

38. Senator TILLIS. General Brown, how does the Air Force plan to mitigate cost and aircraft availability challenges if it continues down the path of procuring less F–35As per year than originally planned for Full Rate Production?

General BROWN. The Air Force must have the right mix of capabilities in the right capacity to ensure combat readiness for today and tomorrow. We need Block 4 F–35 modernization, enabled by Technical Refresh-3 (TR–3) hardware, on competition-relevant timelines to ensure continued F–35 relevance against China or Russia.

Generally, a larger fleet drives reduced sustainment costs per aircraft but the Air Force must weigh overall sustainment costs against the potential for increased retrofit costs and development costs for a fleet with multiple configurations.

Procuring additional aircraft before Block 4/TR–3 "cuts into" production, drives a retrofit bill, and is therefore not desired. As a cornerstone capability, the Air Force must retain the F–35's mission contribution, even if this requires offsets from within the program.

39. Senator TILLIS. General Brown, the Air Force has been procuring F–35s at a rate nearing Full Rate Production for the past several years. Air Force leaders have testified that F–35s coming off the production line today have the best "break rate" in the Air Force. Recently publicized data showed F–35 as having the best "Mission Capable" rate out of all Air Force fighter fleets in 2020. Despite these significant achievements, the Air Force's fiscal year 2022 budget proposes reducing F–35 annual procurement below last year's appropriated level, while purchasing additional 4th generation fighters that have not been produced at rates for the Air Force in roughly 20+ years. As the Air Force tries to mitigate a fighter shortfall, how does this revised acquisition plan not add additional risk? How does the Air Force plan to mitigate this risk?

General BROWN. The Air Force is investing in a future fighter force needed to ensure air superiority for the Joint Force against any adversary. This includes a focus on investments to create a complementary combination of higher end and lower end fighters that provide the affordable capabilities and capacity needed to achieve NDS objectives.

The current fighter force path is unaffordable in both the near and long term due to increasing operating costs of 5th gen aircraft and rising modernization costs of an aging legacy fleet.

By reducing the number of types of fighter aircraft in the inventory from seven to four over the next 15–20 years will allow the Air Force to focus investments on capabilities needed to win (NGAD, F–15EX, F–35, F–16).

40. Senator TILLIS. General Brown, recent Air Force messaging on the F–35 program has been inconsistent and at times conflicted with feedback Congress has received from Combatant Commanders, other services, and international customers. Does the Air Force understand that by slowing F–35 procurement, it will inevitably increase procurement costs, decrease aircraft availability, and discourage further international involvement? If unchanged, I am deeply concerned the Air Force could put F–35 on a path similar to F–22 and be left without any advanced fighter fleet going forward.

General BROWN. The AF is continuing to modernize the F–22 to remain capable against improving adversaries, and there are no plans to retire it in the near-term. Results from the TACAIR study will be a force structure recommendation for a capable and affordable force structure with sufficient capacity to provide air superiority and global strike to the Joint Force.

The Air Force is absolutely not backing away from the F–35. In fact, the majority of the fighters we are procuring in our budget are F–35. Also, there is currently a delivery delay for full Block 4 capability (6–18 months; 2026 delivery). A slight slowing of F–35 procurement ensures we do not increase the number of aircraft requiring retrofit to achieve full Block 4 capability.

Air Force fighters average 29 years of age, and that is reflected in our readiness and fiscal challenges. We need to buy as many fighters as possible to recapitalize the force, we just need to approach procurement smartly.

41. Senator TILLIS. General Brown, you have previously stated that the U.S. Air Force is committed to the F–35 program and that it is the "cornerstone" of the Air Force's tactical fighter fleet. Can you confirm for the Committee that the U.S. Air Force remains committed to the F–35 program? How is F–35 the "cornerstone" of the fighter fleet and what important capabilities does it provide the Air Force?

General BROWN. The F–35 is a cornerstone capability for several reasons, first of which being it is the majority of the fighters we are procuring in our budget are F–35.

Additionally, the F–35 is the only western fifth-generation aircraft currently in mass production; it provides the U.S. and our closest allies and partners with potent combat power.

If called upon to fight a peer adversary today in a highly contested environment, the F–22 and F–35 would provide a potent one-two punch as part of a joint or coalition team. In the future, our Next Generation Air Dominance (NGAD) platform will be an even-more formidable teammate for the F–35 in that environment.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

JOINT PACIFIC ALASKA RANGE COMPLEX (JPARC) MODERNIZATION

42. Senator SULLIVAN. Secretary Roth and General Brown, in response to a question for the record concerning the interdependence of range modernization and readiness, the USINDOPACOM commander, Admiral Aquilino, stated, "Modernizing our ranges . . . will allow the joint force to train against an evolving threat and technologically advanced opponent with our allies and partners." I could not agree more. In March of 2020, the Department of the Air Force submitted a report to the congressional defense committees concerning range modernization for the Joint Pacific Alaska Range Complex (JPARC) and the Nevada Test and Training Range (NTTR). The report identified JPARC and NTTR as the only two major training ranges the Air Force would modernize to Threat Matrix Level 4—or near peer—capability. The report also stated it would complete such modernization efforts by fiscal year 2026. Does the President's budget submission keep the Air Force on track to complete this modernization effort by fiscal year 2026?

Secretary ROTH and General BROWN. Most of the infrastructure required for Level 4, including versions 1 and 2 of the Advanced Radar Threat Systems (ARTS), will be in place at these two ranges by fiscal year 2026. The final step to achieving Level 4 is fielding the ARTS v3. This is a reprioritization from the original plan that was based on the ARTS v4. The ARTS v3 will provide significantly greater capability and is projected to field in the fiscal year 2030 FYDP (as late as fiscal year 2032).

AF funds are being allocated to Joint Pacific Alaska Range Complex (JPARC) modernization as part of the Combat Training Ranges (CTR) funding. These capabilities will be deployed first to the Nellis Test and Training Range (NTTR) and JPARC—the only two AF ranges planned for Level 4 (near-peer) capability.

JPARC is currently scheduled to receive four medium-range ARTS V2s ($64.8 million) (2 each projected to be delivered in fiscal year 2023 and fiscal year 2024), two

long-range ARTS V1s ($81.1 million) (1 each projected to be delivered in fiscal year 2024 and fiscal year 2025), along with Radar Signal Emulators (RSEs) ($41.8 million).

The plan includes funding for development of high-fidelity surrogate targets matching simulated threat systems to stress 5th Generation sensor fusion capabilities.

Live Mission Operations Capability (LMOC) will be installed at JPARC ($4 million). Effort will deliver a common hardware and software platform called "War Room" to each training location, links each site via a Live Mission Operations Network (LMON), and fields a Multi-Level Security (MLS) architecture that enables LMOC to connect all live training systems.

E–3 MODERNIZATION

43. Senator SULLIVAN. Secretary Roth and General Brown, as you know the E–3 Airborne Early Warning and Control System (AWACS) aircraft is a vital piece of air combat command and control and essentially serves as the long-range eyes and ears for our air forces. In fact, the E–3 helped the North American Aerospace Defense Command (NORAD) intercept over 60 aircraft off the coast of Alaska last year—the most since the Cold War. This aircraft uses early 1970s technology and an airframe designed in the late 1950s. In February 2021, the Pacific Air Forces Commander, General Wilsbach, spoke at the Aerospace Warfare Symposium and advocated for the Air Force to procure the E–7 Wedgetail to replace the E–3, which is getting "harder and harder to get airborne." How does the Air Force plan to modernize the E–3 platform to keep it effective against near-peer competitors into the 2030s?

Secretary ROTH and General BROWN. Current E–3 upgrade programs such as the navigation and 40/45 computer processing modifications do not provide the capabilities that enable the aircraft to keep up with next generation airborne moving target indication (″AMTI″) and battle management requirements. The future AMTI platform must be able to sense and share data both on and off board systems across multiple frequency spectrums. Although there is promising future AMTI technologies that could someday potentially operate without a hosted airborne platform, these future concepts will not be ready before the end of service of the E–3 platform. A very near-term decision is needed for a bridging capability for an AMTI platform moving forward.

44. Senator SULLIVAN. Secretary Roth and General Brown, is procuring the E–7 platform that the Royal Australian Air Force operates a viable option? What capabilities does that aircraft provide that the E–3 does not?

Secretary ROTH General BROWN. The Air Force is exploring the viability of acquiring the E–7 which is used by both the Royal Australian Air Force and the United Kingdom's Royal Air Force. At the forefront of the Service's evaluation is the E–7's enhanced capability(s) and assessing the aircraft's suitability to meet existing and future Air Moving Target Indicator (AMTI) and Battle Management requirements. In comparison to the E–3, the E–7 offers a superior radar capability with a modern Multirole Electronically Scanned Array (MESA) radar capable of staring at sectors of interest and closing the kill chain on small and fast targets. Based upon early assessments, the E–7 could provide capability closing both near and mid-range AMTI gaps while also providing wide-area surveillance and integrated fire control at the tactical edge. Additionally, the E–7 also presents a potential opportunity for cost savings in operations, maintenance, and fuel costs.

ARCTIC STRATEGY RESOURCING

45. Senator SULLIVAN. Secretary Roth and General Brown, in July 21, 2021, the Department of the Air Force published its Arctic strategy, which Secretary Austin and Deputy Secretary Hicks committed to fully resource. In last week's Department of Defense posture hearing, Chairman of the Joint Chiefs of Staff General Milley reaffirmed the need to "fully resource the Arctic strategy." In a Strategic Forces Subcommittee hearing last week, General VanHerck, the U.S. Northern Command Commander and designated advocate for Arctic capabilities, testified that DOD resourcing for the various service Arctic strategies, to include the Department of the Air Force, was "inching along" but that the Department "didn't move the ball very far down the field" with the fiscal year 2022 budget. General VanHerck's observation is very discouraging and somewhat alarming given the increased competition in the region. Do you share General VanHerck's view that the implementation of the Air Force's Arctic strategy is too slow? If so, how do you plan on accelerating implementation of Air Force Arctic strategy?

Secretary ROTH and General BROWN. The Air and Space Forces have made significant strides on implementation across the strategy's four lines of effort: Domain Vigilance, Power Projection, Cooperation, and Preparation. Over the past year, we have been researching new technology like over the horizon radar and space assets to detect incoming threats and working hand in hand with Canada to co-develop a data sharing system. Additionally, the Space Force is developing public-private partnerships to bring much needed satellite communications to the Arctic which can be used by both civilians and joint force alike by the end of this year. In recognition of the role Alaska plays in global power projection, the Air Force is also on track to deliver the majority of F–35s to Alaska by the end of year. Meanwhile, we are investing hundreds of millions to modernize the Joint Pacific Alaska Range Complex to provide realistic training for these advanced aircraft. Understanding the environment is also a priority; while we work to mitigate the impact of climate change induced coastal erosion and permafrost thaw on our infrastructure, we are enhancing our weather forecasting to better predict storms and space weather that are unique to the region. While much progress has been made, we will continue our implementation efforts to achieve the objectives of the DAF Arctic Strategy.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

ARNOLD ENGINEERING DEVELOPMENT COMPLEX

46. Senator BLACKBURN. General Brown, Arnold Engineering Development Complex operates with WWII-era infrastructure. Do you assess these aging facilities and the backlog of projects awaiting testing to be national security risks?

General BROWN. We do recognize the test infrastructure's age as a causal factor regarding the backlog of projects to be tested and that these projects are vital to national security. Our challenge is that we must modernize and restore this equipment at the same time we are using it to execute test programs. Using planned down time and robust scheduling procedures we continue to prioritize use of the facilities for the highest priority projects in order to minimize delays to those weapon systems with the most impact to National security.

47. Senator BLACKBURN. General Brown, are we at a point where expanding our throughput capacity and modernizing our testing equipment and infrastructure would provide long run RTD&E cost savings and opportunity costs in terms of time?

General BROWN. Expanding our throughput capacity and modernizing test equipment and infrastructure would no doubt assist us in meeting our mission requirements on shorter timelines and would provide RDT&E cost savings. The Air Force in conjunction with the Department's OSD Test Resource Management Center (TRMC) is aggressively working to address aging test infrastructure. Currently, OSD TRMC, the Department's hypersonic investment lead, is funding in fiscal year 2022 a new high temperature aeroshell test materials facility at Arnold Engineering Development Complex.

48. Senator BLACKBURN. General Brown, do you believe modern, safe facilities to be a key element of retention? Are investment in our people's workspace a signal of how much we value their efforts?

General BROWN. We value all airmen and invest in them in a variety of ways to include salary, health benefits, continuing education, proper equipment, and safe workspaces. While we cannot specifically tie facilities to retention, overall the Air Force continues to experience historic retention rates, reaching a 20-year high in 2020 likely due to COVID and the economy. While motivation for retention is difficult to quantify, retention and exit surveys indicate job security, assignment choices, unit climate & leadership, and spouse employment are key retention elements. Finally, we continually look for ways to offer increased quality of life, quality of service, and career flexibility in order to attract, assess, develop and retain the airmen we need.

49. Senator BLACKBURN. General Brown, what obstructions exist that would preclude an expeditious standing up of the Ground Test Asset Board in consultation with Congress? What additional authorities or resources will this effort require?

General BROWN. The Ground Test Asset Board (GTAB) is an Air Force Flight Test Center (AFTC) only concept not yet fully approved for use. GTAB will be an AFTC communication tool to quickly educate Air Force leadership on the unique nature and critical path that these AFTC facilities occupy for transitioning programs to the battlefield. Given the concept status of GTAB it will be developed to operational sta-

tus by AFTC in a prudent expeditious manner. No additional authorities or resources are required.

50. Senator BLACKBURN. General Brown, do you believe that the current budget is sufficient to reach a 2 percent Plant Replacement Value given the Facility, Sustainment, Restoration and Modernization account is underfunded, appearing on the Air Force's Unfunded Priority List at $320 million?

General BROWN. The fiscal year 2022 President's Budget request for the Facility, Sustainment, Restoration and Modernization account would bring the DAF to 1.91 percent of the Plant Replacement Value. The $320 million on the DAF UPL will bring the Department to 2 percent of the Plant Replacement Value.

MQ–9 REAPERS

51. Senator BLACKBURN. General Brown, what is your view on the role of the large, existing fleet of flexible and highly reliable MQ–9 Reapers in Great Power Competition?

General BROWN. While the MQ–9 provides utility today, it was not designed for operation in a future highly-contested environment. Modifying the MQ–9 force presentation is about balancing near and long-term risk.

In fiscal year 2022 the Air Force is only requesting a reduction in combat lines. This reduction is less than 10 percent of the current force presentation (4 of 60) and does not equate to reduction in aircraft inventory; no tails will be divested and no squadrons will be reduced. Additionally, the Air Force is requesting funding in our fiscal year 2022 budget towards the completion of studies, analysis, and concept exploration to determine a capability that better aligns with National Defense Strategy objectives for near peer competition in the future.

The Air Force remains committed to providing MQ–9 intelligence, surveillance, reconnaissance, and strike capability to Combatant Commands and will continue to ensure daily requirements are fulfilled. Concurrently, we intend to continue development of future ISR platforms that can penetrate inside contested environments, persist in these locations, and be able to connect and share data in the advanced battle management system. The MQ–9, as we know it today, simply cannot accomplish these tasks.

The Department can offer more details pertaining to replacement ISR programs in a classified setting.

52. Senator BLACKBURN. General Brown, what would be the value of layering redundancy into our MQ–9 Command and Control architecture—specifically, moving MQ–9 command/return links to a commercial low Earth orbit constellation?

General BROWN. The Department of the Air Force is looking at multiple options to provide layered redundancy for the MQ–9 Command and Control (C2) architecture.

A low-earth-orbit (LEO) construct could provide resilience in global C2 structure by leveraging a commercial, cost-effective network that would be shared across the entirety of DOD, thereby providing an opportunity for communication and cost efficiencies beyond just the MQ–9.

The reduced latency, increased data rates, and numbers of satellites proliferated across a LEO constellation also allows for a more flexible employment framework that might provide benefits the Air Force is exploring for the MQ–9.

53. Senator BLACKBURN. General Brown, How do you intend to leverage Air Force ISR, to include the rapidly developing Air National Guard Cyber ISR Enterprise in the increasingly critical cyber domain?

General BROWN. The Department of the Air Force is fully committed to utilizing current and evolving Air Force ISR and the total force capabilities in the cyber domain. Through organically owned Air Force capabilities and those ISR and Cyber Airmen presented to USCYBERCOM's Cyber Mission Force, the Air Force continues to leverage the critical skills found in our total force ISR and Cyber Enterprises to achieve Joint All Domain Operations.

GUARD AND RESERVE

54. Senator BLACKBURN. General Raymond, can we expect to see movement toward a Space National Guard?

General BROWN. The DAF has completed a report required by the 2021 National Defense Authorization Act detailing how to best organize the Reserve component

within the Space Force. We anticipate delivery to Congress after OSD and OMB coordination is complete.

QUESTIONS SUBMITTED BY SENATOR JOSH HAWLEY

AFGHANISTAN

55. Senator HAWLEY. General Brown, do you have a sense of the resources that our withdrawal from Afghanistan will free up for the Air Force?

General BROWN. Not at this time. Afghanistan is a very fluid and dynamic situation in which the Secretary of Defense will make final determination on force posture with in the CENTCOM Area of Responsibility.

Once Air Force resources are redeployed, post Afghanistan withdrawal, we intend to recover, reconstitute, re-posture, and modernize those resources to build readiness and capacity in alignment with National Security/National Defense Strategies.

56. Senator HAWLEY. General Brown, how is the Air Force planning to reallocate those resources freed up by our withdrawal from Afghanistan toward the Indo-Pacific and China?

General BROWN. The global reallocation of forces is a part of the Joint Staff led Global Force Management process for Secretary of Defense decision.

Within the global reallocation process, the Air Force intends to recover, reconstitute, re-posture, and modernize post Afghanistan withdrawal resources towards building readiness and capacity in alignment with National Strategy.

Forces will be reallocated as directed by the Secretary of Defense.

F–15EX

57. Senator HAWLEY. General Brown, the Air Force has requested 12 additional F–15EXs on its Unfunded Priorities List this year. How does the F–15EX—and the 12 additional aircraft you've requested, in particular—help the Air Force reorient toward strategic competition with China?

General BROWN. The F–15EX serves as a replacement for the aging single role F–15C and reduces near and mid-term risk by increasing the Air Force's 4th Generation Air to Air capacity as well as Air to Surface capability. There are several ways in which the aircraft improves the Air Force and Joint Force's ability to compete with and deter China. The aircraft provides the greatest payload capacity of any air superiority fighter and provides the most effective enhancement and enabler of the Air Force's 5th Generation Fleet. The F–15EX will also provide superior sensing, range, and payload in support of Critical Infrastructure Defense. The aircraft also improves the Air Force's ability to utilize long range weapons in a potential conflict with a near peer adversary. The F–15EX serves as a replacement for the aging single role F–15C and reduces near and mid-term risk by increasing the Air Force's 4th Generation Air to Air capacity as well as Air to Surface capability. There are several ways in which the aircraft improves the Air Force and Joint Force's ability to compete with and deter China. The aircraft provides the greatest payload capacity of any air superiority fighter and provides the most effective enhancement and enabler of the Air Force's 5th Generation Fleet. The F–15EX will also provide superior sensing, range, and payload in support of Critical Infrastructure Defense. The aircraft also improves the Air Force's ability to utilize long range weapons in a potential conflict with a near peer adversary.

DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, JUNE 22, 2021

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

NAVY POSTURE

The Committee met, pursuant to notice, at 9:30 a.m. in room SD–G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Warren, Peters, Manchin, Duckworth, Rosen, Kelly, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Cramer, Scott, Blackburn, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. I would like to call the hearing to order.

The Committee meets today to receive testimony on the plans and programs of the Department of the Navy in review of the President's Fiscal Year 2022 Defense Budget Request. I would like to welcome our witnesses, Acting Secretary of the Navy, Thomas Harker; Chief of Naval Operations (CNO), Admiral Michael Gilday; and Commandant of the Marine Corps, General David Berger. We are grateful for your service, for the service of the men and women under your command, and for the support of all Navy and Marine families.

The administration's defense budget request for fiscal year 2022 includes approximately $211.7 billion in funding for the Department of the Navy, an increase of $3.7 billion from the fiscal year 2021 enacted budget. As the leaders of the Navy and Marine Corps, you face significant challenges as you strive to balance the need to support ongoing operations and sustain readiness alongside the need to modernize and sharpen the technological edge that is so critical to our military success. I would welcome an update from all of our witnesses on how they are balancing new concept implementation with the procurement of new systems and the upgrade of existing platforms, all while meeting current operational needs.

Our naval forces are maintaining extremely high operations tempo across all areas. Demand is overwhelming for attack submarines, air and missile defense cruisers, destroyers, and strike fighter inventories. The Navy is now in its 8th year of operating

with fewer than the legally required 11 aircraft carriers. The USS *Gerald Ford* is listed in the Navy inventory, but that carrier is more than 6 years behind schedule and not yet ready to deploy. While the *Ford* has been playing an important role in training aviators by conducting carrier qualification operations, she will not be ready to deploy for several more months. However, I am glad to see that the *Ford* has begun conducting full ship shock trials, an important step in the process for ensuring she is ready to engage in unrestricted operations.

Looming on the horizon during the next decade, the Navy will also need to buy new *Columbia*-class ballistic missile submarines to replace the *Ohio*-class fleet. This is an expensive undertaking on a very tight schedule, and I trust the Navy is making every effort to keep this program on track, and I would ask for our witnesses to give an update.

The Navy is using tools such as multiyear procurement authority to conduct its modernization programs more efficiently. Congress has approved multiyear procurement authority for both attack submarines and *Aegis* destroyers. These vessels represent the largest inventory shortfall against the goals of the 2016 Force Structure Assessment, with the actual Navy fleet 15 boats below the attack submarine goal and 14 below the goal for destroyers.

With that in mind, I am concerned that the Navy is breaking faith with Congress by submitting a budget that would break the multiyear contract for the DDG–51 destroyers. I understand that the number one item on the CNO's Unfunded Priority List is a second *Aegis* destroyer in fiscal year 2022. The Navy took a similar approach in fiscal year 2021 by asking for only one *Virginia*-class submarine, and then making the submarine the number one item on its Unfunded Priority List. That year, the second submarine was merely an option on the underlying multiyear contract, but in this case the absence of the second destroyer in the fiscal year 2022 budget would violate the terms of the current destroyer multiyear procurement contract. I would appreciate an explanation of this decision, and assurances that such actions of cutting a ship only to put it on the Unfunded Priority List is not a trend.

The Marine Corps is restructuring around two concepts: Littoral Operations in a Contested Environment and Expeditionary Advanced Base Operations. The key element of these concepts is a more flexible amphibious force that can support a broader naval fight once ashore. Rather than simply acting as a landing force, the Marine Corps hopes to help control the sea and air around them in support of the Navy. To accomplish this, the Marine Corps is prioritizing modernization of its ground vehicles, including partnership with the Army on the Joint Light Tactical Vehicle, or JLTV, to replace the Humvee, and targeted investments in the High Mobility Artillery Rocket System, or HIMARS, to provide Marines with ground-based indirect fire support. In addition, programs like the Amphibious Combat Vehicle, Ground-Based Anti-Ship Missiles, and Long Range Precision Fires will provide critical modernization, increased force protection, and enhanced lethality to marines. General Berger, while this restructuring has been ongoing for many months, due to COVID you have not really had an opportunity to

explain it to a wide audience, and I invite you to do so at this hearing.

Finally, 2016, Admiral Richardson released a force structure assessment that identified a new force structure goal, a fleet of 355 ships. Last year, we received, from Secretary Esper, what was portrayed as an updated assessment, which called for expanding the goal for the Navy fleet to include between 400 and 500 ships, with roughly 100 of these vessels unmanned.

I would like to know how the Navy intends to maintain a fleet of 355 ships, or even 400 to 500 ships, when it is frankly unable to maintain the current fleet of 294 ships on a consistent schedule. Deferred ship maintenance, reduced steaming and flying hours, and cancelled training and deployments have created serious readiness problems within the Navy. We remember too well the collisions of the *McCain* and *Fitzgerald* and the loss of life that resulted. So I am interested in hearing about the progress the Navy is making in continuing to implement changes that will ensure such incidents will not happen in the future.

Again, I want to thank the witnesses for appearing today, and I look forward to their testimonies.

Now let me recognize the Ranking Member, Senator Inhofe.

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Thank you, Mr. Chairman. I thank all of the witnesses for being here and for the great job they are doing. As we have said before, this is a lousy budget, but it is not the fault of these three people who are here today. They do not have a choice. They are doing what they are ordered to do, and I do not like it, and not many Members of this Committee like it, because this budget does not keep up with inflation, much less the 3 to 5 percent—if you read the book [National Defense Strategy (NDS) Commission Report—Providing for the Common Defense], this is what we go by, and we have since 2018, it is very clear where we should be today. Our increases in the military should be between 3 and 5 percent. It has been here, and we have talked about this for a long period of time. We are there and we are not doing it.

So the budget like this sends China and our other potential adversaries the wrong messages, they are not willing to do what it takes to defend ourselves, our allies, and our partners. That is the message that they are getting from us.

We should be worried about China for a multitude of reasons, but looking just at their navy, they passed our fleet size target of 355 ships last year, and will reach the 460 ships by 2030. They are on schedule to do that. That is an increase of 105 ships in 10 years. Meanwhile, this budget supports, at best, the status quo U.S. Navy and Marine Corps. Our Navy is under 300 ships today, and there is no growth. In fact, while China is growing its fleet, our Navy is struggling to avoid shrinking, because right now that is what it is, along with the rest of the military.

It is an unacceptable situation because our military is not being given the resources it needs. As I have said, this budget makes bad choices, not hard choices. For example, Admiral Gilday was forced to cut the destroyer, not because he does not need it and does not

want it. He wants it, but he is forced to cut it. He did not have a choice.

The budget also proposes to inactivate 15 ships, 10 of which have more years of service left. It buys 6 fewer F–35C Joint Strike Fighters than required, divests all 12 patrol craft, cuts Navy and Marine Corps munitions by roughly 10 percent. As bad as this budget is, I am concerned about next year, that it will be worse.

Secretary Harker, on June 4, you directed the Navy to defund nuclear sea-launched cruise missiles and prioritize the modernization of aircraft and ships. You had to make a choice between aircraft, ships, and submarines. China does not have to make a choice between aircraft, ships, and submarines.

So we have got a lot of work to do. We have got a problem, and I think we all understand this.

Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Inhofe. Mr. Secretary, your testimony, please.

STATEMENT OF THE HONORABLE THOMAS W. HARKER, ACTING SECRETARY OF THE NAVY

Mr. HARKER. Chairman Reed, Ranking Member Inhofe, distinguished Members of this Committee, thank you for your bipartisan efforts on behalf of the sailors, marines, and civilians in the Department of the Navy. I am honored to be here with General Berger and Admiral Gilday. I support their efforts to build a more integrated, all-domain naval force through the NAV (navigation) Plan and Force Design 2030.

In order to move those plans forward within existing resources, we have had to make some very hard choices in this budget. But that is exactly what the American people expect us to do. Every dollar is a strategic asset that must be maximized to stay ahead of the pacing threat of China, and many other challenges facing our fleet and our union. Every investment must be done in a balanced and sustainable manner to ensure we maintain the readiness of our current fleet while building the capacity and capability we will need in the future.

The cost of readiness is increasing. Maintenance costs have grown at a rate that is 2.5 percent above inflation. Personnel costs are also growing at a rate greater than inflation. This growth squeezes the rest of the budget. In order to maintain our readiness, we have had to delay some of our planned ship purchases to future years. In order to invest in a superior future for us, we had to divest of less capable assets. These were not easy choices.

In order to ensure future availability and readiness of our fleet, we are prioritizing investments in our physical infrastructure, including full commitment to the Shipyard Infrastructure Optimization Program. I have visited all four of our public shipyards, as well as most of the private shipyards and other commercial facilities. It has been an inspiration to shake the hands of the men and women who are building and maintaining our fleet and to speak with every level of labor and management about the issues they face and the need for consistency in funding and demand. That is why we are increasing the capability and resiliency of these century-old installations, increasing the size and capability of our dry

docks, and equipping our 40,000-person workforce with the tools they need to maintain our new, more lethal assets.

To ensure our resources reach the warfighters who need them, we are demanding rigorous self-assessment and responsive accountability, in every part of our enterprise, through the Performance To Plan initiative. This effort has improved readiness of our strike fighters and is being rolled out successfully across the fleets.

As good stewards, we are on the right path towards obtaining an audit opinion for the Navy and Marine Corps general funds and the Department's working capital fund. We are the only Military Department that has eliminated audit material weaknesses—three in the Navy, one in the Marine Corps—and are leading the way on this critical effort inside the Department. This has enabled us to improve cybersecurity in our business systems. Since 2017, the Marine Corps has closed 41 out of 110 IT [information technology] findings, 17 of which were cybersecurity related. We are also increasing investment in the Department's oversight functions while maximizing the return on our investment in the performance audit process.

Effective use and management of data is key to our digital transformation and will change how we fight and win at every level. This requires the modernization of our information technology infrastructure, which is a critical warfighting priority for the Department.

We are prioritizing the mental health of our force, speaking out at a senior level about the benefits of counseling and the availability of counselors, chaplains, and other professionals. We appreciate the Committee's attention to this vital issue and your support in providing additional mental health support to our sailors and marines in our forward operational units.

We are fighting the scourge of sexual harassment and sexual assault through efforts like the The Watch List, a tool that uses Navy and Marine Corps data to alert commanders to conditions in their units that may lead to these toxic behaviors. We are increasing investment in this area, focusing on the prevention of, and response to, sexual harassment and assault. In this fiscal year 2022 budget we have added over 200 personnel across the Navy and Marine Corps focused on prevention. The majority of these personnel will be placed at Navy and Marine Corps installations, working with sailors and marines. We are also adding an additional 80 sexual assault response coordinators for the Marine Corps, as well as 18 Navy criminal investigative service personnel dedicated to sexual assault prevention and response.

We look forward to the findings of Secretary Austin's 90-day Independent Review Commission and are committed to making meaningful and lasting progress on this issue.

Around the world and around the clock, the sailors, marines, and civilians of our integrated force stand the watch and execute the mission. On behalf of each of them and their families, thank you for your time and dedicated oversight. I look forward to your questions.

[The prepared statement of Mr. Harker follows:]

PREPARED STATEMENT BY THE HONORABLE THOMAS HARKER

INTRODUCTION

Chairman Reed, Ranking Member Inhofe, distinguished Members of the Committee, thank you for the opportunity to discuss the posture of the Department of the Navy (DON). I appreciate the hard work of the Members and Staff of this Committee to ensure funding stability and principled oversight for every sailor and marine now standing watch around the world.

The reemergence of long-term strategic competition from China and Russia is spurring a period of rapid transformation in the global security environment. The disruptions related to the COVID–19 pandemic underscore the need for agility and distributed readiness. Climate change is accelerating, and its impact on both our planet and force will continue to grow as significant weather events threaten our infrastructure, and the arctic opens to unprecedented activity.

In a world more interconnected and interdependent than ever before, a fully integrated and forward maneuverable Navy-Marine Corps Team has never been more important to the security of our Nation and the preservation of the rules-based international order. We must protect our Nation, our allies and partners, and our global interests, while also leading on the urgent issues facing our personnel and planet, from the mental and physical health care needs of our people, to the scourge of sexual assault and harassment, to the need for diversity and inclusion at every echelon, to the ongoing threat of climate change.

General Berger, Admiral Gilday, and I stand united in our resolve to ensure your DON will be ready for the global challenges before us with the personnel, platforms, and technology to secure vital sea lanes, stand together with our allies, and protect the United States of America.

DEFEND THE NATION

The President's Budget submission for fiscal year 2022 (PB22) reflects hard choices to divest of less capable platforms and systems to invest in a powerful and superior future force. Throughout the budget process and in all aspects of capability acquisition, design, construction, and deployment, we must balance the urgent readiness needs of our force today with investments in the future force and effective business process reforms in order to ensure our sailors and marines are always ready to fight and win in any clime or place.

Force Posture

The presence and availability of naval forces must always reflect the strategic needs of the Nation, providing effective options for the President and Secretary of Defense to counter every challenge. To ensure preparedness, the DON provides maximum operational flexibility through warfighting concepts including Distributed Maritime Operations, Littoral Operations in a Contested Environment, and Expeditionary Advanced Base Operations, ensuring continual overmatch and flexibility in the battle space.

Secretary Austin has identified China as the pacing threat for our military forces, and we will continue to position our integrated global maritime force to lead in the Indo-Pacific. But ours is a global force with global responsibilities, including increased Russian presence in the Atlantic, terrorism and instability in the Arabian Gulf, an increasingly blue arctic, a global need for agile and ready Marine forces to respond to the unexpected in every domain, and the constant threat of cyberattacks to our force, support infrastructure, industrial base, and supply chain.

The DON fiscal year 2022 budget request delivers ready maritime forces through sustained investment and performance improvement, developing more lethal, networked capabilities and concepts, closely integrated between the services and with our joint force and government partners. Within limited resources, we will field the right platforms and capability to maintain freedom of the seas, support international law, and stand by our allies as we continue to fly, sail and operate wherever international law allows.

That spirit is reflected in the guidance put forth by our services. I support Admiral Gilday's *Navigation Plan,* which refocuses our integrated all-domain naval power on the core functions of sea control and power projection we need to compete and win. It places a high priority on a more lethal and better connected fleet to project power from blue water, to the littorals, to the shoreline and beyond.

The guidance centers on four lines of effort:

- *Deliver a More Ready Fleet.* Deliver a Navy that is organized, trained, and equipped to deploy forward and win in day-to-day competition, in crisis, and in conflict.

- *Deliver a More Lethal, Better-Connected Fleet.* Deliver a Navy capable of projecting synchronized lethal and non-lethal effects across all domains.
- *Deliver a Larger, Hybrid Fleet.* Grow a larger, hybrid fleet of manned and unmanned platforms—under, on, and above the sea—that meets the strategic and operational demands of our force.
- *Develop a Seasoned Team of Naval Warriors.* Develop a dominant naval force that can outthink and outfight any adversary.

To meet the forward maneuverable force requirements of the Joint Force long into the future, the Marine Corps has put into motion an aggressive modernization of the Service. I support General Berger's *Force Design 2030,* which is not simply an improvement on its existing form and function. It is a transformational effort rooted in the anticipated challenges of the future operating environment. Building on the cooperative efforts of all of our sea services, the Marine Corps is reinvigorating the Fleet Marine Forces within existing resource constraints as an indispensable element to global maritime operations.

The goal of Force Design 2030 is to provide a Marine expeditionary assets that will:

- Successfully compete with peer adversaries in the maritime gray zone
- Deter, and if required, fight and win in support of naval campaigns
- Facilitate sea denial and sea control
- Win the reconnaissance and counter-reconnaissance competition
- Persist inside actively contested spaces
- Be capable of "rapidly sensing, making sense of, and acting upon information" inside an adversary's weapon engagement zone.

Across both services and throughout the DON, we are executing force designs centered on Naval Expeditionary force deployment, giving us a sustainable edge and a resilient capability to deliver the integrated all-domain naval power required by the Joint Force. We are investing in the readiness of the integration-ready platforms to ensure continued freedom of action throughout the maritime domain, from amphibious and ground element equipment, to agile warships and submarines, to dominant aircraft carriers and air wings. Successful implementation of the concepts within the *Navigation Plan* and *Force Design 2030* will be pursued through a unified, integrated effort at every echelon.

Maintain the Edge

We greatly appreciate the Committee's efforts to ensure funding stability and predictability over the past several years. This has given our force the agility and flexibility needed to address emerging threats, to invest in critical future capabilities for our integrated naval force, while shifting away from less beneficial spending.

The DON is building on this foundation by aggressively pursuing better readiness, lethality, and capabilities in those areas of warfighting technology showing the greatest promise of delivering non-linear warfighting advantages. From artificial intelligence and cyber weapons to unmanned platforms and directed energy, we are on the cusp of technological breakthroughs that will define future conflict. Our future force will be defined by our decisions today.

We will continue to invest in key naval capabilities to control the seas and project power in every domain. We will field a resilient, networked, and dispersed fleet, connected through the Naval Operational Architecture to provide decision advantage in contested environments. We will continue to invest in advanced technologies such as long range hypersonic and directed energy capabilities to ensure maximum reach, survivability and decision space for our forces.

Our number one shipbuilding priority remains resourcing *Columbia* SSBN for on-track delivery in order to ensure the future strength of the most survivable leg of our Nation's nuclear triad. We are also advancing our asymmetric undersea attack advantage through the Tactical Submarine Evolution Plan, including follow-on Blocks VI and VII of the *Virginia*-class, and the SSN(X) program. We are advancing battle force shipbuilding programs such as the *Constellation*-class frigate and the *Gerald R. Ford*-class carriers, as well as enhancing our fleet capabilities through additional battle force ships.

We are also extending the reach of our warriors from the sea with the addition of sea-based platforms such as USS *Miguel Keith,* our third Expeditionary Sea Base, which was commissioned on May 8th. To ensure our Marines maintain their edge, we will continue to invest in key Marine Corps development programs that support the Marine Corps Force Design concept, such as the Ground Based Anti-Ship Missile, Ground Based Air Defense, Medium Altitude-Long Endurance Unmanned Aerial System, Long Range Unmanned Surface Vessel, and the Light Amphibious Warship. These enhance the ability of Marines to maneuver and deter competitors within range of enemy weapon systems.

Targeted investments in key emerging technologies and capabilities will enhance and sustain amphibious battlefield maneuverability ashore and superiority at sea, with the support of properly resourced facilities, infrastructure, and systems to sustain our frontline forces.

Continual Readiness

Hard experience has shown long term readiness cannot be sustainably achieved through "can do" and "make do" improvisation. Our front line personnel may be determined, adaptive, and skillful enough to get the job done in the face of equipment shortfalls and intense battle rhythms, but relying on their adaptability is no substitute for genuine fleet readiness. We owe it to the sailors and marines out in the fleet to make sure they always have the tools they need to do the dangerous jobs we ask of them.

The changes generated from the Readiness Reform and Oversight Council (RROC) and other introspective efforts have enabled us to improve readiness, training, and maintenance processes at every level. For example, we've implemented a uniform readiness assessment and certification process that must be followed before a ship can be certified to return to the fleet. We have also increased opportunities for shipboard certification and skills enhancement, while adjusting manning schedules to maximize safety and improve quality of life and professional effectiveness for our personnel while underway. These and many other changes will result in a better prepared and equipped force.

We continue to build on our efforts to increase availability, improve maintenance, and maximize throughput, by making targeted shore investments designed to increase fleet readiness. The Navy's four public shipyards—Norfolk Naval Shipyard, Portsmouth Naval Shipyard, Puget Sound Naval Shipyard and Intermediate Maintenance Facility, and Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility—are critical infrastructure elements of America's national defense. In order to improve naval maintenance production capacity at these facilities, the DON is fully committed to the Shipyard Infrastructure Optimization Program (SIOP), comprising three primary focus areas: dry dock recapitalization, facility layout and optimization, and capital equipment and modernization. The DON is dedicating the resources and oversight necessary to ensure the required maintenance is completed across all shipyards as quickly as possible, and has established a Program Office (PMS–555) to ensure integration of all elements of the plan.

Building on the successful Naval Aviation Enterprise efforts to meet Strike Fighter aircraft availability goals for both the Navy and Marine Corps, we are targeting greater aviation readiness across the force, incorporating commercial best practices to improve performance. Through the Performance to Plan initiative we're using data driven decision making to enable to remove the root causes of maintenance delays as well as operational mishaps. This data-driven approach is based on a "Get Real, Get Better" approach, demanding rigorous self-assessment, strong characterization of current performance, and detailed analysis backed by accountability and the opportunity to implement needed improvements.

We appreciate the Committee's interest in ensuring our Naval forces have the right facilities to train, fight, and win, even as various demands on the land, sea, and air reduce the available area for military training. Specifically, we are grateful for the Committee's continued attention to the urgent need to expand the Fallon Training Range Complex, which is necessary to the readiness of every Naval Aviator and Navy SEAL. We are listening to the interests of Tribal governments, environmental organizations, and the local community, as well as our counterparts across the Federal Government, and are committed to finding a favorable solution for everyone involved.

Combat Climate Change

The United States Navy and Marine Corps recognize the reality of global climate change, our responsibility to mitigate our contribution to it, and our need to prepare for its short and long-term effects. As we grapple with the effects of climate change on maritime operations around the globe, the DON must continue to lead and find ways to go farther, both in substantially reducing our impact on climate change and building a force that is resilient to its potential effects.

We must adapt our infrastructure for the coming changes with initiative and problem solving throughout the DON. In the past few months I have visited and recognized several Marine Corps and Navy installations that have demonstrated leadership in climate resiliency, environmental stewardship, and sustainable development. These facilities include Parris Island, Naval Base San Diego, Marine Corps Air Base Camp Pendleton, and Naval Base Point Loma. We will continue to invest in vehicles, infrastructure, and technology that increase our resiliency and effi-

ciency, as we pursue the use and availability of alternative fuels. The DON is determined to lead from the front against the threat of climate change.

TAKE CARE OF OUR PEOPLE

The greatest source of readiness and strength for our force will always be the people who wear the uniform and comprise our civilian workforce, as well as the families that serve alongside them. We are committed to ensuring our sailors, marines, and civilians are trained and equipped to execute the mission and return home safely, and that their families are provided with the housing, medical attention, and education they deserve.

Building the Future Force

To maintain a Fleet prepared to fight and win in long term strategic competition, we continue to evaluate and improve our capability to attract, retain, and develop a talented and diverse workforce. In the context of an intense competition for talent in our country, and in light of the rapidly evolving tactical and technical landscape, we are modernizing and enhancing our entire talent management approach to succeed.

We are continuously identifying opportunities for personnel to develop their leadership skills throughout the ranks, promoting equal opportunity in every aspect of our force. The DON is investing in the training, education, and professional development of our officers, enlisted personnel, and civilian teammates with special emphasis on partnerships with civilian institutions to enhance educational opportunities for our junior sailors and marines.

Eliminate Toxic Behaviors

It is a personal priority for all three of us to build a climate of trust, respect and inclusion throughout our force. A major focus of that effort must be on recognizing and stopping destructive behaviors early and consistently, so leaders at every level can take appropriate and effective actions.

We remain determined to eliminate sexual assault, sexual harassment, and gender discrimination from every part of our force. These behaviors are a betrayal of those who have stepped forward to serve in uniform. We will continue to work with this Committee to share best practices and ideas, relentlessly pursuing a future where no sailor, marine, or civilian teammate ever has to fear for their own safety while protecting us all.

To assist leaders in this effort, we have developed *The Watch List: Top Five Signals of Risk for Sexual Assault,* a research-driven tool that used Navy and Marine Corps data to identify five of the key destructive behaviors that increase risk for sexual assault. These include sexual harassment, gender discrimination, lack of responsibility and intervention, lack of respect and cohesion, and workplace hostility behaviors. We have promulgated The Watch List throughout the Navy and Marine Corps and are actively working to develop tools that will provide operational commanders data on their units so they can take action to prevent incidents.

We are actively engaged in rooting out extremism throughout our force. In coordination with efforts across the joint force, the DON has conducted "Extremism Stand Downs" at every echelon. This process sparked important conversations and made the position of our leadership and force clear to every sailor, marine, and civilian in the DON, and we will continue to build on these efforts.

Trust is at the heart of all our warriors do. Extremist ideologies are a strategic threat to that trust and have no place within the Navy and Marine Corps. We will persistently focus on this problem, and appreciate this Committee's partnership and involvement in this critical effort.

As leaders we must do all in our power to ensure that our people feel respected and valued. We cannot and will not tolerate discrimination or racism of any kind. Our core values and oath demand that we critically examine all of our policies and practices to remove inequity and unconscious bias.

Promote Mental Health

Mental health is a critical aspect of our readiness as a force—and our responsibility to our warriors and their families. We have made it a priority to ensure the ready availability of mental health professionals, chaplains, family counselors and other support professionals when our people are in need—or when they see the need in others.

I know from personal experience how helpful counseling can be during both personal and professional struggles. That's why as part of our recognition of May as Mental Health Awareness Month, I launched a series of videos encouraging leaders throughout the DON to share their personal stories of seeking and receiving coun-

seling and help. I also emphasized this point to our newest officers at the US Naval Academy Commissioning Ceremony, and will continue promoting mental health care throughout the force. We have to remove the stigma and start the conversation, particularly as our warriors and their families contend with the added stressors related to COVID–19.

The DON is committed to ensuring the health, safety, and well-being for all members within our military community. The loss of any sailor, marine or civilian to suicide is one too many. The DON offers a variety of suicide prevention efforts, encouraging positive help-seeking behaviors, eliminating stigma, and increasing visibility and access to critical resources. We are constantly revisiting and revising the portfolio to meet the needs of our people, and have increased our investment in this area.

Take Care of Our People

We are reforming operating procedures and promotion practices to reward initiative, applied problem solving, and innovative thinking at every level. A top priority as we evaluate personnel practices are the needs and challenges of military families, particularly dual service families. Senior leaders are also taking a personal and hands-on approach to ensure enduring excellence in housing, dependent education, and other quality of life concerns for our military families.

Through a combination of non-monetary, quality of life, and customer service programs, we are increasing our responsiveness to the needs of the individual warfighters and their families, making continued service a viable and attractive option. We are expanding opportunities for civilians with prior service through the Targeted Reentry Program. We are also expanding avenues for personnel to learn, operate, and innovate with partners from the private sector, across the joint force, and alongside our allies.

Defeat COVID–19

With consistent personal and fleet discipline and continued refinement of best practices, we have ensured a robust, proactive, and coordinated COVID–19 response across the DON. We are preventing and containing outbreaks with minimal impact on fleet readiness, and are doing everything in our power to get the vaccine out to our sailors, marines and civilians as quickly and effectively as possible.

The DON is also working with the Federal Emergency Management Agency to assist local, state, and Tribal governments in the overall vaccination effort of the Nation, building on the proactive contributions to the urgent medical and security needs of the American civilian population, including the deployment of COMFORT and MERCY to our Nation's two most populous cities, and the deployment of medical personnel to facilities in communities across the country.

Like all Americans, the Navy and Marine Corps have adjusted to this global pandemic, from addressing outbreaks aboard ships, to changes in recruitment and training, to supporting our military families through extended deployments and virtual leaning. We have invested significant resources to upgrade the Navy and Marine Corps intranet to improve functionality and to enable telework for our military and civilian workforce.

The Navy and Marine Corps continue to operate under Force Health Protection measures to protect marines, sailors, civilians, contractors, and our military families. Across the DON, we've implemented flexibilities to help minimize risk to military personnel and their families, respond to evolving situations, and ensure the readiness of our force. We continue to use active testing protocols to detect asymptomatic COVID–19 positive personnel, contain outbreaks aboard vessels, and conduct surveillance to detect and treat the disease as early as possible.

We will not relent in these critical measures. We are well positioned to emerge stronger than ever, as the pandemic has forced us to rethink and refine our recruitment, training, and personnel movements across the DON, as well as our shipyard operations, deployments, and maintenance schedules, with efficiencies and applications of technology that can continue to benefit our operations and throughput long after COVID–19 is in our wake.

SUCCEED THROUGH TEAMWORK

A dominant naval force is central to the effective execution of our strategic goals. We must be ready at all times to execute as one integrated naval force—Navy and Marine Corps seamlessly linked at every level—with common logistics, infrastructure, practices and support networks—executing a fleet-wide emphasis on resilient and combat ready forces. These integrated connections must extend beyond the DON as well, encompassing our vital partners across the joint force and the whole-

of-government, as well as our industry partners, shipyards, and allies and partners around the world.

Trust and Collaboration

Leaders throughout the DON are actively engaged with the joint force and the whole-of-government to meet the maritime challenges that face our Nation. One key initiative of this collaboration is the Tri-Service Maritime Strategy, *Advantage at Sea.* This is was truly collaborative maritime strategic planning effort led jointly by all three of our Nation's sea services—Navy, Marine Corps, and Coast Guard. In order to execute these goals, Admiral Gilday, General Berger, Admiral Schultz and I are working together in order to promote integration, communication, and collaboration as a warfighting priority. There can be no daylight between us as we strengthen the integrated all-domain Naval power of the United States.

Operationalizing the Audit

In my previous roles as Assistant Secretary of the Navy for Financial Management and Comptroller, and while Performing the Duties of Comptroller for the Department of Defense, I saw first-hand the importance of effective, transparent examination and oversight, and I witnessed the direct relationship of accountable financial controls to our frontline strength. In my current role as Acting Secretary of the Navy, I am determined to strengthen this process in order to provide our Congressional oversight partners with complete visibility and accountability for every dime.

Central to this effort is building on the findings of our financial statement audit process, and improving that process moving forward. As I've emphasized to senior leaders across the Navy and Marine Corps, the audit is Commander's business. Accurate inventory, proper resource allocation, redundancy elimination are all directly connected to our end strength.

We are on the right path towards obtaining an audit opinion for the Navy and Marine Corps general funds, and the DON working capital fund. We have a detailed roadmap that will guide our effort, placing a strong emphasis on budgetary reform, including receipt, distribution, execution, and monitoring.

The President's Budget 2022 increases investment in DON oversight functions. In addition to our work on the financial statement audit, we are looking at ways to increase effective oversight going forward, removing redundancy and duplication of effort in every part of our enterprise through the performance audit process. I have met with leaders across the government and the DOD to discuss audit planning and understand areas of high risk, and am incorporating that feedback into the fiscal year 2022 audit priorities direction provided to the Naval Audit Service and our internal control program under the Federal Managers Financial Integrity Act and OMB Circular A–123. Our top priority is to ensure that our oversight capabilities and capacity is as efficient and effective as possible in order to keep our promise to the American taxpayer and the warriors on the frontline.

Sustaining Maritime Information Superiority

Leaders in every functional unit and discipline have been directed to set business systems modernization on an integrated path that is sufficiently resourced and supported across the DON. We are using data driven decision-making to achieve tangible savings while consistently working to become more effective and more efficient.

Modernization of our information technology infrastructure is a critical warfighting priority for the DON. Effective use and management of data is key to our digital transformation, and will change how we will fight and win at every level. We are consolidating legacy systems and will have moved from ten financial systems to three by the end of this fiscal year. I have established top-down performance management efforts, driven by data, to ensure the cyber resilience and strength of our defense business and warfighting networks.

As an information age naval force, every DON warfighting function and mission area is dependent on data and information to rapidly inform decision-making throughout the entire competition to conflict continuum. The dependency on secure and reliable IT has grown exponentially over the last decade and is critical to maintaining a competitive warfighting advantage. Simply put, information is combat power.

In order to generate and sustain that power, the DON is building on the findings of our Cybersecurity Readiness Review with an Information Superiority Vision, detailing how the Navy and Marine Corps will:

- *Modernize* our infrastructure to bring the DON to parity with industry, move data and information from anywhere to anywhere securely.
- *Innovate* and leverage emerging technology including 5G and Artificial Intelligence to drive capability outcomes for competitive advantage at speed.

- *Defend* forward with robust information protection regardless of where data resides.

Through Operation Flank Speed, the DON is shifting enterprise collaboration and productivity services to an enduring cloud-based Microsoft Office 365 solution which will provide world-class security and collaboration tools to improve productivity across our distributed workforce.

This initiative will modernize our infrastructure to a more cloud-enabled, performant, and defendable network allowing data and information to move from anywhere to anywhere securely. It will also improve our overall cyber readiness posture by implementing key Zero-Trust-Architecture principles; securing devices and endpoints, establishing identity and user privileges, and introducing content and data rights management.

The Marine Corps has now completed the transition of all users to Microsoft Office 365, and I have directed the transition of over 470,000 users in the Navy no later than December 31, 2021. Flank Speed will create the capabilities needed to increase Naval lethality and our ability to fight and win.

Failure to invest now will result in this effort now would further delay much needed improvements to our core technology infrastructure and leave the workforce without a sustained follow-on capability once the DOD-provided Commercial Virtual Remote capability is sunset in June 2021, extending our reliance on outdated, duplicative and less secure legacy IT systems that cost more and deliver less, further eroding DON's competitive warfighting advantage.

Strengthen Relationships with Stakeholders

Working alongside our vital industry partners, we are aligning our efforts to produce the right platforms and capabilities for the warfighter, and ensure maximum availability and throughput from design to production to maintenance.

We're working closely with our partners and suppliers in the defense industrial base to ensure the continued viability of the crucial businesses and infrastructure needed to ensure our ships, aircraft, and ground equipment are available when needed for the defense of our Nation, both during the current COVID–19 challenge and long into the future. A robust, resilient, and nimble industrial base and supply chain is critical to the long term strength of our Navy and Marine Corps. Funding predictability and long term planning are key elements in ensuring the efficiency of our acquisitions and maintenance processes in partnership with a supply chain calibrated to deliver maximum value to the taxpayer and warfighter.

At our public shipyards, the DON took aggressive steps at the start of the COVID–19 pandemic to implement and require safety measures to protect the personnel, civilians, contractors, and families. These steps have included maximum telework opportunities for shipyard employees, administrative leave for high-risk individuals unable to telework, altered shifts to maximize social distancing, sanitization and hand-washing stations throughout the shipyard, cloth face coverings and face shields for the workforce, and screening checks at all workplace entry points.

Global Engagement

We cannot meet the global challenges our Nation faces alone. Readiness requires presence and rapid capabilities in every part of the world, as well as specialized and localized knowledge to handle evolving and challenging situations. The strategic maritime defense partnerships we maintain today with our partners and allies extend the reach and power of our force. They underscore the importance of cooperation and coordination in maintaining the rules-based international order that enables so much of our global prosperity and security.

Our personnel regularly train and operate alongside their foreign counterparts, test the interoperability of our systems, and build our collective readiness on the front lines of great power competition. Operational exercises, international port calls, joint Marine force training, and other interactions generate the personal contact that builds understanding, respect, and trust across national and functional lines. Our sailors, marines and civilian personnel know that through their service they are front-line diplomats for our Nation. Their professionalism and dedication promotes the connections that strengthen our collective security and cultivate shared ideals that send the message that the United States is a friend worth having.

CONCLUSION

Our sailors, marines, and civilian teammates will always be our greatest source of strength in a challenging and changing world. On behalf of each of these brave patriots and the families that serve at their side, I once again thank the leadership and membership of this Committee for your attention, interest, and ongoing commit-

ment to the defense of the United States of America. It is an honor to work with each of you, and I look forward to your questions.

Chairman REED. Thank you very much, Mr. Secretary. Admiral Gilday, please.

STATEMENT OF ADMIRAL MICHAEL M. GILDAY, USN, CHIEF OF NAVAL OPERATIONS

Admiral GILDAY. Chairman Reed, Ranking Member Inhofe, distinguished Members of the Committee, thank you for the opportunity to testify today alongside Secretary Harker and General Berger. I am thankful for the enduring support that this Committee provides the greatest navy in the world.

I do believe this hearing comes at a critical time for our country. The competition at sea is intensifying. China and Russia are rapidly mobilizing their militaries, attempting to undermine our alliances and degrading the free and the open order. The Chinese battle force is the largest in the world, and it is growing. Backed by a robust industrial base and the biggest shipbuilding infrastructure in the world, they command a modern fleet of surface combatants, submarines, aircraft carriers, amphibious assault ships, and next-generation fighters.

Furthermore, they are strengthening their space capabilities and stockpiling an arsenal of long-range missiles to hold us and our allies and partners at risk. China is deliberately modernizing for the 21st century, and is building all-domain capabilities to rival our own.

Make no mistake. Our fleet can control the seas in conflict and project power ashore today, but we will be increasingly challenged to do so in the future unless hard choices are made. The results of analysis over the past 5 years, inside and outside the Pentagon, have been consistent and they have been clear—America needs a larger, more capable fleet. Importantly, our latest study gave us the headlights not only for the size but also for the composition of that force. We need to transition away from older, less capable platforms and deliver the platforms and systems that provide overmatch. At the same time, we need to grow.

However, our Navy faces the task right now of recapitalizing our strategic nuclear deterrent, something we have not done in 40 years, and we are making a once-in-a-century investment in our public shipyards—long overdue—while preserving our current readiness so the fleet can confidently operate forward and be relevant.

Nearly 70 percent of the ships that we have today we will have a decade from now. We have to take care of the ships that we own, but the price tag on that readiness is rising. Over the past two decades, manpower, operations, and maintenance costs, which make up almost 60 percent of our budget, have grown at a rate, as the Secretary mentioned, 2.5 percent above the rate of inflation. Meanwhile, the Navy's buying power is less than it was in 2010. Back then we had 288 ships. Today we have 296. Given these factors, if the Navy's top line remains flat or if it goes down, the size of our fleet will definitely shrink.

Nevertheless, we are determined to deliver the most ready, the most capable, and the most lethal Navy we can with the budget

that we are given. To do this, we are improving maintenance in our shipyards and aviation depots, we are ensuring our ships are properly manned, that our magazines are filled with ammunition, spare parts are in our storerooms, and our sailors are getting the steaming days and the flying hours that they need to hone their skills.

We are working hard on a more robust, resilient network infrastructure as part of JADC2 [Joint All-Domain Command and Control]. We are investing in long-range precision fires like hypersonics and Tactical Tomahawk, and we are developing directed energy systems to improve fleet survivability.

Our eye is on the larger hybrid fleet. The investments in our shipbuilding account reflect the rigorous analysis we conducted last year as well as the needs of our combatant commanders, who are determined to build affordable capacity, which includes a deliberate approach to uncrewed vessels. We are making sure that every sailor can outthink and outfight any adversary by scaling our 21st century training framework, and also our live virtual constructive training.

Senators, the average age of the Chinese fleet is 11 years. Ours is 21. It is time to move decisively and field the future Navy. We must modernize now, in this decade, or we will risk falling behind. We need to keep a forward posture that maintains America's safety and prosperity.

I am extremely proud of our sailors, our Navy civilians, and our families who sustained a historic, high OPTEMPO [Operational Tempo] in the midst of this pandemic. They are the source of our strength, as are the patriots in our shipyards and our aircraft depots, and our partners in industry, companies large and small, who keep the production lines moving.

Again, I am grateful for this Committee's support to the Navy and the Marine Corps team. I look forward to answering your questions. Thank you.

[The prepared statement of Admiral Gilday follows:]

PREPARED STATEMENT BY ADMIRAL MICHAEL M. GILDAY

Chairman Reed, Ranking Member Inhofe, distinguished Members of the Committee, thank you for the opportunity to testify today on the posture of the United States Navy. Moreover, on behalf of all our sailors, Navy civilians, and their families, thank you for your continued leadership and support. With the funding provided by Congress these last several years, we are building back our readiness, strengthening our advantages at sea, and keeping our fleet deployed forward where it matters.

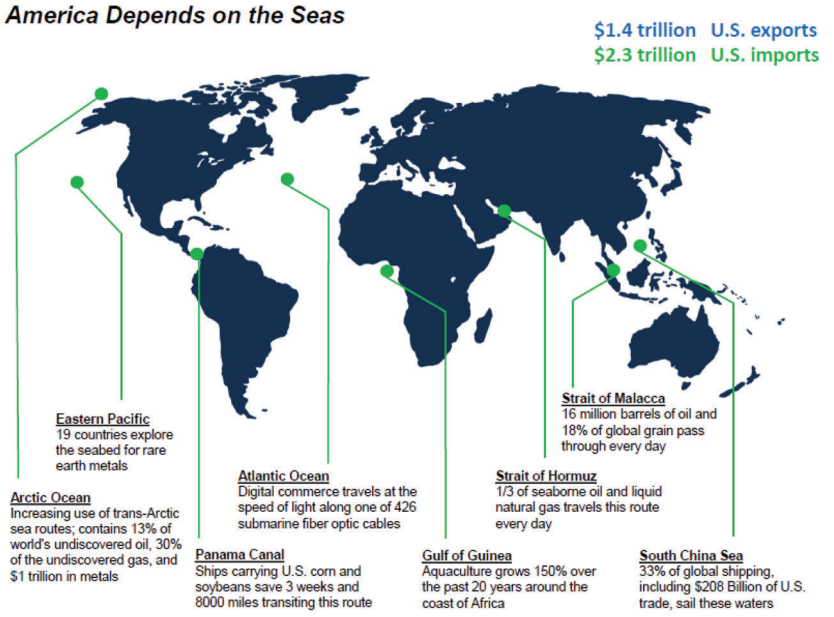
This hearing comes at a critical time for our country. Multiple nations are working to undermine the free and open rules-based international system that has benefited so many for so long. Our rivals are rapidly modernizing their militaries to erode our advantages. The COVID–19 pandemic threatens the health and livelihood of our people. Climate change puts our coast lines at risk with rising seas levels and more severe weather. And the maritime environment—a vital source of our Nation's prosperity and protection—has become increasingly contested. America's Navy is ready to meet these challenges. As we have done since our founding, we will set sail to defend our Nation, take care of our people, and succeed through teamwork.

The President has made it clear—America stands at an inflection point. The choices we make today will have a dramatic impact on the future of our Nation. The very nature of the free and open international system is threatened. To defend our Nation, safeguard economic opportunity, and secure the blessings of liberty for years to come, we must renew our enduring advantages and work in concert with our allies and partners to secure the rules-based order at sea.

AMERICA IS A MARITIME NATION—OUR PEOPLE DEPEND ON THE FREEDOM OF THE SEAS

The United States Navy—alongside the Marine Corps and Coast Guard—provides a unique, enduring advantage to the American people. Since our Nation was founded, Americans have relied on the seas for prosperity and protection. For 245 years, our Navy has deployed forward to ensure safe passage for our commerce and to keep fights far from our shores. Since the end of World War II, we have sailed with like-minded navies to build and sustain the open, rules-based international system at sea. Together, we have provided stability, deterred great power war, and ushered in prosperity for billions across the world.

Over time, our reliance on the seas has only grown. Today, 90 percent of global trade by volume travels by sea, facilitating $3.7 trillion in U.S. commerce annually and supporting 31 million American jobs. Ninety-five percent of global internet traffic travels along undersea cables, fueling our digital economy and accounting for $10 trillion of financial transactions every day. The free flow of commerce—both physical and digital—cannot be taken for granted. It relies on the rules-based international system at sea and unimpeded access to markets through open waterways. Even minor disruptions can have extraordinary impacts. The recent grounding of the container ship *Ever Given* in the Suez Canal, which delayed hundreds of ships and cost the global economy an estimated $9.6 billion per day, highlights the importance of predictable passage through the world's strategic waterways. If a rival nation attempted to control passage through the South China Sea—a strategic location where $208 billion of U.S. commerce flows annually—the impact to the global economy would be extremely costly.



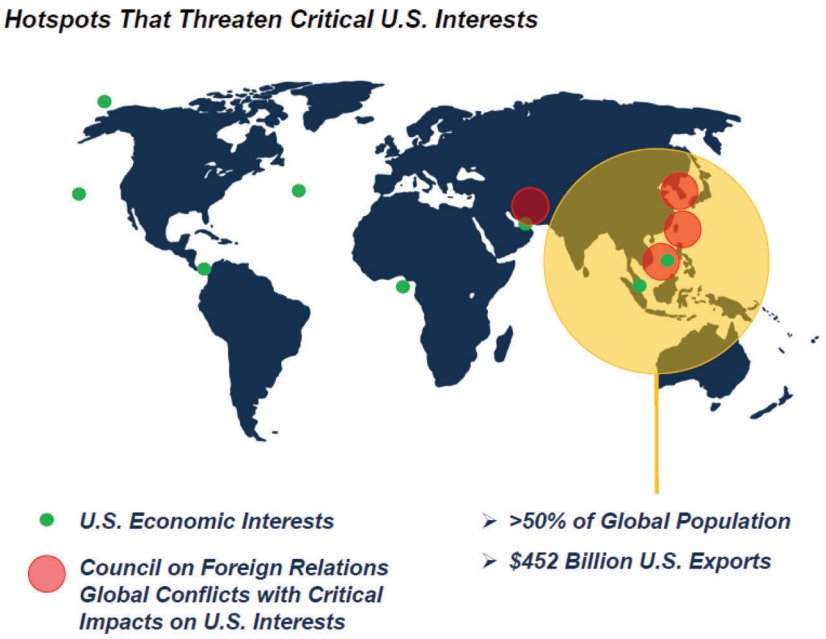
Meanwhile, the competition for offshore resources such as aquaculture, energy, and rare-earth minerals is increasing across the globe. Currently, 93 percent of the world's fishing stocks are overexploited, threatening a major protein source for 3.3 billion people. Several nations have deployed distant water fishing fleets and expanded the use of maritime militias in their quest to maintain their lucrative fishing industries. Additionally, many nations are increasingly looking to maritime sources of energy and mineral wealth. The global oil and gas industry, which generates an estimated $3.3 trillion in annual revenue, is turning toward energy exploration along the seafloor to extract untapped reserves. With trillions of dollars in raw resources awaiting discovery on the unmapped ocean floor, states and multinational companies are racing to develop capabilities for deep-sea mining.

The world's oceans have always been a wellspring of wealth and prosperity. Today, and in the years ahead, they pose an increased risk of competition turning into conflict.

THE GROWING CHALLENGE TO THE UNITED STATES AND THE OPEN INTERNATIONAL SYSTEM

Despite benefiting from free and open seas for decades, the People's Republic of China (PRC) and Russia are currently working to undermine the rules-based international system at sea. Both are attempting to control access to key waters and the resources that lie within these waters, inhibiting freedom of the seas and overflight. Both are intimidating their neighbors and attempting to enforce unlawful claims with the threat of force. Both are expanding sophisticated networks of sensors and long-range weapons to hold important waterways at risk. Both are leveraging offensive cyber tactics to advance their competitive advantage, illegitimately obtaining U.S. intellectual property to close research and development gaps and disrupt our industrial base And both are attempting to replace the free and open international system with a more unilateral and self-serving one by turning incremental gains from their malign actions into long-term advantages—such as militarizing contested features in the South China Sea or illegally annexing the Crimean peninsula.

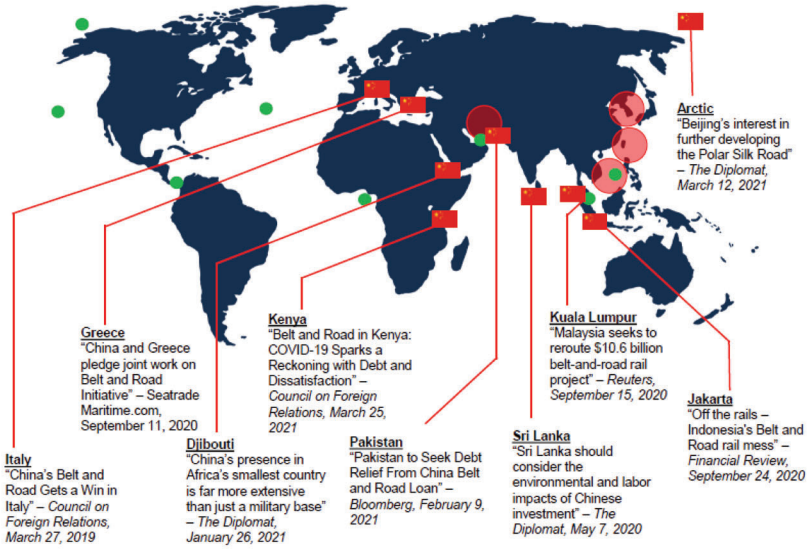
The PRC's and Russia's revisionist approaches at sea threaten United States interests, undermine alliances and partnerships, and degrade the free and open international order. Moreover, the PRC's and Russia's aggressive naval growth and modernization are eroding United States military advantages. Unchecked, these trends will leave the Navy unprepared to ensure our advantage at sea and protect national interests within the next decade.



The PRC—our pacing challenge—is carrying out a strategy aimed at the heart of America's maritime power. They are deliberately working to erode maritime governance, inhibit freedom of the seas and overflight, deter our engagement in regional disputes, and displace the United States as the partner of choice across the world. To achieve its strategic goals, the PRC has rapidly grown its Navy from 262 to 350 ships. Today, their fleet includes modern surface combatants, submarines, aircraft carriers, amphibious assault ships, and polar icebreakers. Expanding their robust naval force with a hundreds of Coast Guard and maritime militia vessels, they routinely harass neighbors to exert pressure at a level below traditional armed conflict.

They have built the world's largest missile force to target regional waters in an attempt to intimidate others. They have strengthened all dimensions of military power to contest the United States from the seafloor to space and in the information domain. Under the One Belt, One Road Initiative, they are extending their maritime infrastructure across the globe through aggressive investments, particularly in ports, to control access to critical waterways.

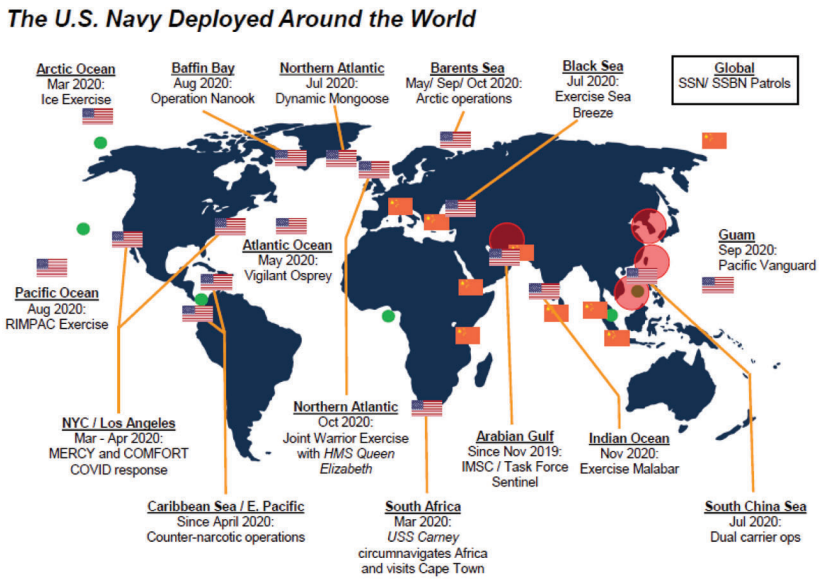
China's One Belt, One Road: Maritime Expansion



As our United States Indo-Pacific Commander recently stated, the greatest danger for America and our allies is the erosion of our conventional deterrence with respect to the PRC. Absent a convincing conventional deterrent, the PRC will continue to take action to undermine the free and open conditions at sea upon which our citizens rely. While the PRC is expanding its influence across the globe, this challenge is most acutely present in the Indo-Pacific, including the East and South China Seas and increasingly in the Indian Ocean. History shows that a strong U.S. Navy provides a stabilizing influence across the world, assists in peaceful maritime dispute resolution, and expands economic opportunities for the American people. The future will prove no different.

U.S. NAVY—DEPLOYED FORWARD TO DEFEND AMERICA AND OUR ALLIES AND PROTECT THE FREEDOM OF THE SEAS

The U.S. Navy is responding to the challenges to our free and open international system by demonstrating our global reach, enforcing common principles, sustaining the conditions that enable shared prosperity, strengthening our alliances and partnerships, and modernizing our fleet to control the seas in conflict and project power in contested environments. Today, over 42,000 sailors are deployed on 111 ships and submarines to preserve freedom of the seas, deter conflict, and keep America and our allies safe. Together with the Marine Corps and Coast Guard, our Navy is delivering integrated all-domain naval power across the globe. And we are doing this in the midst of a global pandemic.



Even with many parts of the world shut down in response to COVID–19, the worldwide demand for naval forces required us to maintain a high operational tempo, which included eight major Carrier Strike Group and Expeditionary Strike Group deployments in fiscal year 2020. Since I appeared before you last year, the Navy has continued to steam and fly from the Arctic Circle to the Cape of Good Hope and from the Caribbean to the South China Sea. Our hospital ships provided relief to American communities; we executed underway training events for deployment certification; and we conducted exercises as part of the Joint Force and alongside our allies and partners. Our ability to sustain a forward posture rests on the individual commitments of over 600,000 sailors and Navy civilians and their families. Their adaptive spirit and commitment to COVID–19 protocols kept the force healthy and our ships at sea.

The pandemic taught us a great deal about operating in a challenging environment. Our entire force learned how to adapt as we iterated and honed our COVID–19 Standardized Operational Guidance. Our logistics teams learned what it means to sustain our fleet with limited means. Our information technology workforce quickly scaled virtual private network licenses and supported the roll-out of virtual and remote environments to keep us connected. Our dedicated, patriotic shipyard and aviation depot workforce adapted to our COVID–19 protocols, came to work, and got our ships and aircraft back to sea. And we learned how brittle portions of our defense industrial base could be if not postured appropriately. We took every opportunity to learn throughout this dynamic year—and shared those lessons with our allies and partners—to improve the resiliency of our Navy in the years ahead.

We certainly did not address the challenges of continued maritime operations during this pandemic alone. Our broader Navy team—which includes Congress, industry, research institutions and laboratories, and our international allies and partners—overcame so much to design, build, and sustain our fleet through this pandemic. We cannot thank all of you enough. As our Nation—and the world—emerges from this pandemic, we will continue to face the daunting challenge posed by long-term competition with the PRC and Russia. And we will need your support, now more than ever, as we modernize and recapitalize the Navy to sustain our enduring advantage at sea.

TIMELESS ROLES OF SEA CONTROL AND POWER PROJECTION

American security and prosperity is underpinned by the U.S. Navy's ability to control the seas and project power ashore in conflict. The world would be a less prosperous, more dangerous place if the seas were not open and free for the benefit of all. Every day, combat-credible naval forces operate forward to reassure our allies

and partners, confront malign behavior, and deter potential adversaries from escalating into conflict. We preserve a stable and secure global maritime environment and advance prosperity through transit, trade, and the lawful pursuit of natural resources. Our ability to carry out these essential functions comes from our ability to credibly control the seas and project power ashore in conflict. These missions are timeless.

Controlling the seas protects friendly shipping, provides the Joint Force and our allies freedom to maneuver, and denies the use of the seas to our adversaries. In the past, sea control required us to fight our adversaries on, under, and above the sea. Now, in our digital age, it requires us to also fight in space, cyberspace, and across the electromagnetic spectrum. In short, modern sea control demands the all-domain power of our Navy and Joint Force.

America also needs a Navy that can influence events ashore. This starts with deterring nuclear attack against our Nation with our ballistic missile submarines—the most survivable leg of the nuclear triad. Projecting power and influence from the seas is vital to deterring aggression and resolving crises on acceptable terms to the United States. Our Navy must field capabilities in all domains—employing information warfare, cyber capabilities, special operations, and a host of conventional weapons launched from on, under, and above the sea—to convince our rivals they have no viable means of achieving their objectives through force. Our sea control and power projection capabilities, alongside our strategic deterrent, provide America and our allies their surest guarantee of peace. If the Navy fails to deliver a fleet that can control the seas and project power, our Nation will lack the conventional deterrent needed to protect America and our allies and expand economic opportunities for the American people.

While America's need for sea control and power projection capabilities has not changed over time, how we operate and what we operate with is changing. Emerging technologies have expanded modern fights at sea into all domains. Ubiquitous and persistent sensors, advanced battle networks, and long range weapons have made contested spaces more lethal. Advances in artificial intelligence have increased the importance of achieving decision superiority in combat. Additionally, autonomous systems have shown promise for an effective and affordable way for us to fight and win in contested spaces. These technologies offer clear advantages to the militaries that integrate them first. America cannot afford to fall behind.

Meanwhile, our fleet is adapting to operate in new ways. To preserve and promote the rules-based order, we are taking a more assertive posture in daily operations. We are challenging excessive maritime claims by sailing and flying wherever international law allows and expanding our decision advantage by persistently monitoring activities at sea to expose malign behavior that undermines the rules-based order. Our cyber teams are actively defending our networks and projecting power in the cyber domain to maintain a tactical advantage against our rivals. Furthermore, we are dynamically deploying our forces forward to deter our rivals from making incremental gains and to work alongside our allies and partners to keep the seas free and open.

Should deterrence fail, our Navy stands ready to confront aggression and decisively win a fight. Using concepts such as the Joint Warfighting Concept and Distributed Maritime Operations (DMO), we will mass sea- and shore-based fires from distributed forces. By maneuvering distributed forces across all domains, we will complicate adversary targeting, exploit uncertainty, and achieve surprise. Controlling the seas by constraining or destroying adversary fleets will enable freedom of movement at sea and power projection ashore. Working with the Joint Force and our allies and partners, Navy submarines, aircraft, and surface ships will launch massed volleys of networked weapons to overwhelm adversary defenses and compel a termination of conflict on favorable terms. *Delivering an all-domain fleet that is capable of effectively executing these concepts is vital to maintaining a credible conventional deterrent with respect to the PRC and Russia.*

DELIVERING ALL-DOMAIN NAVAL POWER

To deliver the all-domain naval power America needs, our Navy must evolve our capabilities and grow our capacity. The Navy—working in close collaboration with the Joint Force—has studied, identified, and prioritized the future capabilities we need to execute our evolving warfighting concepts and maintain a credible deterrent with respect to the PRC. The PRC has invested heavily in anti-access capabilities. In conflict, they will seek to contest all domains and hold our forces at risk with sophisticated networks of sensors and a large number of long-range, precision weapons. To effectively deter the PRC as part of the Joint Force, our fleet must be imbued with distributed weapons of increasing range and speed, more magazine depth,

more mobility, more stealth and deception, and more sustainability. This requires a deliberate adjustment to our naval force structure.

Based upon multiple rigorous, threat informed assessments conducted over the past five years—both inside and outside the Navy—it is my best military advice that America needs a larger Navy to counter the People's Liberation Army Navy (PLAN) that is growing in both capability and capacity. To fill critical Joint Force demands, the Navy requires greater numbers of submarines, smaller and more numerous surface combatants, more lethal offensive capabilities, a host of integrated unmanned platforms—under, on, and above the seas—and a modern strategic deterrent. We also need a robust network infrastructure to link our distributed forces together and resilient logistics to sustain them. *In short, a balanced, hybrid fleet of manned and unmanned platforms is the most effective and affordable way to meet the security demands of our Nation.*

Analysis has also confirmed that numbers are not the only factor—the composition and combat effectiveness of our fleet matters more. Naval power is not a function of ship numbers alone, nor is it simply a result of the lethal systems employed from those ships. It comes from the concepts that shape how we fight and the means to maintain, train, and equip our forces to win in combat. And it fundamentally comes from developing sailors—the true source of our naval power—who can outthink and outfight and adversary.

Within the scope of the President's Fiscal Year 22 Budget request, we are maximizing our Navy's contribution to the Joint Force. We are prioritizing a fleet that is ready for combat over a larger fleet that is not ready to fight. We are divesting of legacy assets that do not bring sufficient lethality to the fight and investing in next-generation platforms and systems that close critical Joint capability gaps. Meanwhile, we are prioritizing the training and education needed to prepare our sailors to outthink and outfight any adversary. And we are using every dollar we can to sustainably grow the fleet. As we prepare our fleet for long-term competition with the PRC, we are focused on key objectives in the following areas—readiness, capabilities, capacity, and our sailors.

READINESS

To sustain America's advantage at sea, we must deliver combat-ready forces to deter aggression and keep the seas free and open. Deploying battle-ready ships, submarines, and squadrons around the world—from the South China Sea to the Arctic—deters aggression, reaffirms our commitment to allies and partners, and keeps the seas open and free. Readiness underpins our forward-engaged posture and touches all elements of the Navy, from our shipyards and aviation depots to the steaming and flying hours our sailors use to hone their skills. With nearly 70 percent of the fleet we will have in 2030 already in service today, affordably sustaining our ships and aircraft is vital to meeting future demands. This is why President's Budget 2022 places such an emphasis on critical components of our Navy's readiness.

Our force is in a higher state of readiness today than prior to 2017 with a healthier surge force, improved shipboard manning, better training for our crews, and improved parts availability. Increased funding, combined with cultural reforms throughout the fleet, have arrested the decline in our readiness and put us on a path to recovery. Still, we have much work to do.

Deploying combat-ready forces starts with taking expert care of our platforms. To this end, we are using data-driven reforms to improve maintenance processes, increase operational availability, and save taxpayer dollars. We have seen tremendous success with these methods in our aviation community. For years our F/A–18 aircraft were stuck at a 55 percent mission capable rate. At the time, we assumed only an increase in inputs—aircraft, manpower, or parts—could raise the number of ready jets available to our pilots. However, in fiscal year 2019 we shifted our focus to cultural reform and used the power of data-analytics to raise our F/A–18E/F mission capable rate to 80 percent—a rate we have continued to maintain throughout all of fiscal year 2020 and into fiscal year 2021. With higher numbers of aircraft available, our aircrew are more ready to fly and fight than at any point over the last decade.

We are now applying a similar approach to improving ship maintenance. On-time private shipyard surface ship availability completion rates rose from 37 percent in fiscal year 2019 to 67 percent in fiscal year 2020. Meanwhile, public shipyards reduced maintenance delay days by over 75 percent from fiscal year 2019 to fiscal year 2020. To generate these gains, we modified contracting strategies, increased dry dock capacity, and optimized facility and pier layouts. We improved planning and adjusted maintenance durations to better align workload with shipyard capacity. We

also leveraged authorities provided by Congress, such as the three year "Other Procurement, Navy" pilot program, to increase flexibility and stabilize demand for our shipyard workforces.

Unfortunately, COVID–19 impacted our recent ship depot maintenance gains—as the need to protect our people caused delays in on-time completion of ship maintenance. Half of our maintenance availabilities in both public and private shipyards are trending late due to workforce capacity reductions. To mitigate further impacts in our private shipyards, we accelerated awards of contract options and improved the cash positions of the industrial base. For our public shipyards, we mobilized over 1,300 skilled Navy Reserve sailors, increased overtime usage, and rebalanced future workloads to address these delays. These efforts have stemmed the disruption COVID–19 caused to our shipyard maintenance and will mitigate work spilling over into fiscal year 2022. We are methodically and safely returning to normal operating conditions. Though some delays will continue to persist until the shipyards return to full strength, the production workforce in both public and private shipyards is returning to pre-pandemic levels.

Sustaining our advantage at sea requires us to make targeted investments in critical infrastructure. This includes ensuring our worldwide constellation of bases are postured to sustain and support our fleet at sea. Of particular importance are critical elements of our national defense industrial base such as our public shipyards and aviation depots. Our Shipyard Infrastructure and Optimization Program (SIOP) provides a strategic roadmap for necessary investments in dry-docks, capital equipment, and optimizing the layout of these vital national assets. We have already broken ground on a perimeter floodwall at Norfolk Naval Shipyard, and are building a new lock system at Portsmouth Naval Shipyard with many more projects on the horizon. We are also recapitalizing our aviation depot infrastructure. Through our Naval Aviation Fleet Infrastructure Optimization Plan (FIOP), we are developing a 10-year Master Plan that provides our aviation depots the capacity to sustain and modernize our aircraft, engines, components, and support equipment. Meanwhile, we are also transforming our Navy enterprise shore network infrastructure into a secure, resilient digital platform.

Sustaining our advantage also requires us to master all-domain fleet operations. To credibly deter aggression, we must integrate the all-domain power of the Navy with the Joint Force and our allies and partners. This starts with providing our sailors adequate ranges to train for the high-end fight. The speed and scale of a potential fight for control of the seas has changed. The size of our premier Carrier Air Wing and SEAL training center—the Fallon Range Training Complex (FRTC)—is no longer sufficient. Within existing capacity, our sailors cannot sufficiently train with longer-range weapons or practice the tactics and techniques they will need to employ against a near-peer threat. We will continue to work with Congress, tribal leadership, local communities, and key stakeholders in the year ahead to modernize the FRTC and ensure our sailors have the infrastructure they need to train to win in combat.

Mastering all-domain fleet operations also requires a rigorous learning campaign. We are conducting a series of fleet battle problems, wargames, and exercises to refine our concepts and capabilities. For example, we recently conducted our most complex exercise to date involving unmanned systems, which brought unmanned surface vessels and aircraft under the control of a *Zumwalt*-class destroyer—the USS *Michael Monsoor* (DDG–1001). This summer we will conduct Large Scale Exercise 2021—bringing together our fleets from across the globe to test out key components of our DMO concept. Overall, our campaign of experimentation and learning prepares our sailors for high-end warfighting and drives updated joint concepts, fleet requirements, and future naval capabilities.

Sustaining our advantage at sea depends on developing, training, and fielding battle ready surface force crews. As of the end of 2020, we have fully implemented all 111 Comprehensive Review/ Strategic Readiness Review recommendations. Over 1,700 junior officers have now graduated from our new Junior Officer of the Deck course with training aligned to International Maritime Organization's standards. We are broadening the use of instructor-led virtual reality training through the construction of two Mariner Skills Training Centers and the modernization of our Integrated Navigation Seamanship and Ship handling Trainers. With the support of Congress, we are investing in and employing meaningful reforms in how we man our surface fleet, train our crews, schedule and execute workups and deployments, and how we equip and maintain the surface force.

We will continue to invest in these key priorities and drive maximum efficiency from every dollar to deliver the naval power America needs. We are currently meeting operational demands while adapting to protect our sailors and their families.

But readiness recovery remains a long game and will require sustained funding over time to fully recover.

CAPABILITIES

To sustain America's advantage at sea, we must deliver a more lethal and better connected fleet. The fight at sea is evolving rapidly. Emerging technologies have expanded into all domains and made contested spaces more lethal. Artificial intelligence and machine learning, autonomy, quantum computing, additive manufacturing, and new communications technologies are transforming the maritime environment. These changes emphasize the need for the Navy to develop sea control and power projection capabilities at speed and scale. That means more lethality, more survivability, better combat logistics, and a resilient network that connects command and control nodes, platforms, weapons, and sensors all together.

President's Budget 2022 prioritizes capabilities that amplify the fleet's ability to disperse and project synchronized lethal and non-lethal effects from multiple axes and in all domains. To achieve this vision, we are developing a Naval Operational Architecture (NOA) that integrates with Joint All-Domain Command and Control. The NOA is a collection of networks, infrastructure, data, and analytic tools that connects our distributed forces and provides decision advantage. Beyond recapitalization of our undersea nuclear deterrent, there is no higher development priority. We launched Task Force Overmatch this past October to align resources and expertise from across our force to field the NOA by the middle of this decade.

Developing longer-range, higher-speed weapons—such as hypersonic missiles—will give our warfighters the competitive advantage they need. Hypersonic missiles change the risk calculus for our rivals by providing a non-nuclear sea-based prompt, global strike capability. We are working in close partnership with the Army to deliver a truly-joint, conventional hypersonic weapon across land and sea-based platforms. We conducted a successful test of our common hypersonic glide body in March 2020, which keeps our Conventional Prompt Strike program on-track to field this game changing capability by the mid-to-late 2020s. President's Budget 2022 signals our strong support for developing this vital joint capability.

Our adversaries are attempting to deter us with massive numbers of sea- and shore-based missiles. To complicate their ability to understand the potential battlespace, we are investing in Counter-Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance, Reconnaissance, and Targeting systems. Our response also includes fielding an inexhaustible directed-energy system that accurately and reliably defeats anti-ship cruise missiles (ASCM). The High Energy Laser Counter ASCM Project is expediting the development of critical technologies to protect our ships from the cruise missile threat. At the same time, we are pursuing other directed energy initiatives in parallel—such as the 150 kilowatt class laser weapon system—to accelerate learning and fielding of this critical capability. The recent demonstration onboard USS *Portland* showed how we can disable an unmanned aerial vehicle using directed energy. We will continue to invest in laser technology and non-kinetic defensive systems to increase fleet survivability while maintaining free magazine space for our offensive weapons.

Our logistics enterprise and strategic sealift capacity are also vital to sustaining our advantage at sea and keeping the Joint Force operating forward. Accordingly, we are modernizing networks and communication and navigation systems of our Combat Logistics Force to best posture this aging fleet to operate in a contested environment. We are also investing in increased fuel distribution capacity as well as improvements in our expeditionary rearm capabilities and resuscitative care surgery systems. Specific to the Sealift Fleet, which provides inter-theater lift capability to the Joint Force, we have accelerated recapitalization, leveraging a "buy used" strategy to replace our least ready vessels, and invested in service life extension for the net effect of increased readiness. We are grateful for Congress's authorization to affordably revitalize our Sealift Fleet with used vessels. We are moving ahead with purchasing two used ships in 2021 and five used vessels in President's Budget 2022, signaling our continued support for this approach. We will continue to work with Congress to efficiently recapitalize this critical capability in the years ahead and request that Congress remove remaining obstacles to used ship procurement. Our longer-term plan is to construct new vessels to replace prepositioned vessels in the Maritime Prepositioning Force as those ships begin to reach expected service life at the end of this decade.

Pivoting toward the future and resourcing needed capabilities—especially in the Indo-Pacific region—requires tough choices. To invest in the next-generation capabilities we need to meet the challenge of near-peer competitors, we need to divest of our legacy capabilities that no longer bring sufficient lethality to the fight. We

will work transparently with Congress to make these critical divestment decisions and free up resources to modernize the fleet.

CAPACITY

To sustain America's advantage at sea, we must field a larger, hybrid fleet that is designed for sea control and power projection. To provide a credible conventional deterrent in peace and win in war, we need to sustainably generate cost-effective platforms and mature unmanned systems. This transition will increase the capacity of the fleet, expand our ability to distribute our forces, and rebalance the fleet away from exquisite, manpower-intensive platforms and toward smaller, less-expensive ones. By growing a hybrid fleet—on, above, and below the seas—we will ensure our success across the continuum of day-to-day competition, crisis, and conflict.

As we design and build a larger, hybrid-fleet, our number one acquisition priority remains delivering the *Columbia*-class ballistic missile submarine on time. No mission is more important to our Nation than providing a secure and reliable strategic nuclear deterrent. Our ballistic missile submarines are the most survivable portion of our nuclear triad and provide an assured response to any strategic nuclear attack on the United States. With our *Ohio*-class submarines nearing the end of their service life, we cannot afford to get behind in delivering on the *Columbia* program. The first submarine is starting construction this year with the second boat on-track for procurement in fiscal year 2024. We will continue to drive affordability, technology development, and integration efforts to ensure the program remains on schedule and our ballistic missile submarines remain on patrol in the decades ahead.

Meanwhile, our future fleet places a premium on expanding our undersea advantage. During conflict, sea control and sea denial from beneath the waves are among our Navy's core advantages—we cannot afford to yield any ground to our competitors. We are now planning to construct the tenth Block V *Virginia*-class submarine with a Virginia Payload Module (VPM). President's Budget 2022 underscores our sustained support for procuring two *Virginia*-class submarines per year. Sustainable production of the *Virginia*-class submarine, in addition to the development of a follow-on attack submarine program, is key to sustaining our undersea advantage in the years ahead.

As we shift our focus toward smaller platforms that can operate in a more dispersed manner, there is a clear need to rapidly incorporate unmanned systems into our fleet architecture. They expand our intelligence, surveillance, and reconnaissance advantage, add depth to our missile magazines, enhance fleet survivability, and provide more risk-worthy vessels to operate inside the weapons engagement zone of any adversary. In other words, they give our operational commanders flexible and effective options to maneuver within a contested environment. The Navy is taking a deliberate approach to developing unmanned systems through our Unmanned Campaign Framework. Our framework lays out an overarching vision on how we intend to produce tested and proven systems at scale, as well as develop the core technologies required to successfully integrate unmanned systems on, below, and above the sea. By the end of this decade, our sailors must have a high degree of confidence and skill operating alongside proven unmanned platforms. The combined capability of manned and unmanned systems will provide our operational forces the advantage we need in a future fight.

Nuclear powered aircraft carriers are the most survivable and versatile airfields in the world. For decades to come, they will remain a cornerstone of the Navy's forward presence, sea control, and power projection capabilities. USS *Gerald R. Ford* (CVN 78) represents a generational leap in the aircraft carrier's capacity to project power. Over the past year, *Ford* has been underway, executing over 7,100 total launches and recoveries with the Electromagnetic Aircraft Launch System and Advanced Arresting Gear. Additionally, over 30,000 pounds of ordnance has been moved, loaded and expended by embarked F/A–18 aircraft using Advanced Weapons Elevators (AWEs). Seven of *Ford's* AWEs have completed certification and the remaining four are on track to certify by this summer. We expect *Ford* to be cleared for blue water operations later this year and ready for employment in 2022.

The striking power of our Carrier Air Wing is vital to controlling the seas and projecting power in a high-end fight, and the adaptability of the air wing keeps our carriers relevant for 50-plus years of life. The air wing of today is currently transforming with the addition of the F–35C, the E–2D Advanced Hawkeye, and the CMV–22B Osprey. President's Budget 2022 increases our F–35 inventory to get the fleet closer to a fourth generation and fifth generation fighter mix. Carrier Air Wing TWO—which includes the first operational F–35C squadron—is currently undergoing pre-deployment training and will deploy later this year. Meanwhile, we are rapidly developing the MQ–25 Stingray—the Air Wing's first unmanned platform—

to extend the striking range of our fleet. And we are laying the groundwork for the highly networked air wing of the future—a 6th generation family of systems that leverages manned-unmanned teaming—which will deliver overwhelming firepower in contested spaces in the years ahead. Delivering a 6th generation family of systems is vital to keeping pace with PRC fighter development and sustaining our advantage over the seas. America cannot afford to fall behind.

We are also going through a surface combatant reset on ship design and construction to provide the next enduring hull forms for small and large surface combatants. Our surface combatant inventory is aging with limited options for future upgrades. At the same time, our future fleet design places an emphasis on greater numbers of small surface combatants. The *Constellation*-class frigate is a versatile, multi-mission platform capable of supporting day-to-day operations and the high-end fight. We began cutting steel on Constellation this year, and we are excited to incorporate this ship into the fleet in 2026. Meanwhile, the future large surface combatant (DDG(X)) will bring the space, weight, and power needed to incorporate future capabilities for the high-end fight such as high power lasers, long-range strike, and sensor growth. Together, both ship classes will bring more lethality, more survivability, more endurance, and more self-sufficiency to the fleet.

We are not just building better ships—we are building ships better. The Navy is mindful of past shipbuilding efforts that did not perform to plan, which is why we are moving ahead in ways that deliberately reduce risk. Early and sustained industry involvement, robust land based testing, and focused design maturity are foundational to our shipbuilding approach. We appreciate the strong support from Congress in fiscal year 2021. Delivering ships on time, on budget, and within performance targets is our priority.

SAILORS

To sustain America's advantage at sea, we must recruit, develop, and retain a seasoned team of naval warriors. The strength of our naval power depends on the strength of our sailors—active and reserve, uniformed and civilian. In the long-term strategic competition we face today, every sailor must be able to outthink and outfight any adversary. Our Navy must remain the best trained, finest educated, and most ready maritime force in the world. We recognize the strength we gain from a diverse force and our actively pursuing combat-minded sailors with varied backgrounds, experiences, and thought to build up our readiness and resilience. As we take care of our sailors, we will accelerate their development and harness their talents to keep America safe and prosperous.

As we modernize our fleet, we are modernizing our talent management systems to better recruit, train, retain, and support our sailors. We achieved our accession goal of 39,600 new Active Duty sailors in fiscal year 2020 to further improve afloat manning and filled operational billets to their highest point in six years. President's Budget 2022 makes a slight reduction in our end-strength with the divestment of legacy ships. However, the demand for a highly trained, diverse force has not abated. We are grateful to Congress for the generous pay raises and personnel reforms. The Navy is leveraging both—alongside our talent management initiatives—to better recruit and retain our incredibly talented force. Meanwhile, we continue to transform our MyNavyHR infrastructure to rapidly deliver services to our sailors and families at a reduced cost. This includes the DOD-leading mobile applications that help with the challenge of military moves and finding childcare or housing and the MyNavy Career Centers which proved vital during the COVID–19 pandemic.

We are continuing to cultivate a culture of excellence across the fleet, which builds resilience and strengthens our Navy's enduring standards of professional competence and personal character. Over the past year, our culture of excellence campaign has strengthened the signature behaviors that define our service to prevent the occurrence of destructive behaviors—such as sexual harassment or discrimination. At the same time, we have maintained a resolute focus on preventing the scourge of sexual assault within our ranks. President's Budget 2022 increases our civilian Sexual Assault Prevention and Response workforce to provide greater support for our sailors and drive down investigation timelines. Overall, we are providing more training, more tools, and more resources so every sailor receives the support they need.

We are also actively building a workforce that represents the full diversity of America and the strength it brings. Task Force One Navy (TF1N) was launched last year to analyze and evaluate issues in our military that detract from Navy cohesiveness and readiness. The task force released their report in January 2021 and highlighted 56 recommendations that will elevate a culture of diversity, equity, and inclusion throughout the fleet. Respect and the promise of opportunity are core to our

Navy, and we are committed to implementing TF1N reforms and ridding discrimination, sexism, and other forms of structural biases from our ranks.

Without a doubt, the vast majority of sailors in the U.S. Navy serve every day with honor, character, and integrity. However, we cannot be under any illusions that extremist behaviors do not exist in our Navy. As directed by the Secretary of Defense, each command across the fleet conducted a stand down to address extremism within our ranks. Racism, injustice, indignity, and disrespect keeps us from reaching our potential—an inclusive, respectful, professional fighting force that answers the Nation's call with unparalleled readiness and lethality. The stand down was only a starting point; this will be an ongoing fight. We are committed to eliminating extremist behavior and all of its corrosive effects on our fighting force.

The intellectual investments we make in each sailor provide a key advantage over our rivals. To strengthen our advantage in this area, we are aligning the curriculum and research of the Navy's education enterprise to deliver warfighting advantage in our operations at sea and in how we design, deliver, and generate our forces. Additionally, the Naval Community College is on track to provide our sailors opportunities for education in fields that strengthen the service. Maintaining educational relationships with our international partners through exchanges and scholarships remains a priority for us to deepen enduring relationships and broaden understanding between likeminded navies.

To ensure our sailors are ready for any challenge on the horizon, we are scaling Ready Relevant Learning (RRL) and Live, Virtual, Constructive (LVC) training. RRL provides the right training, at the right time, in the right way for our sailors. It replaces "one-and-done" classroom training events with career-long learning continuums through a mix of in-classroom instruction and modern training methods. LVC technology blends the intensity of underway operation with high-fidelity synthetic training, allowing our sailors to master high-end tactics in secure and controllable conditions. Our force will always fall back to their baseline under the stress of combat—RRL and LVC will raise their baseline.

CONCLUSION

Let there be no doubt—America is a maritime nation. Our security and prosperity are inextricably linked to the seas. For 245 years—in both calm and rough waters—your Navy has stood the watch to protect our homeland, preserve the freedom of the seas, and defend our way of life. For generations, we have provided a bulwark against aggression and have underwritten the international order that led to an unprecedented era of peace and prosperity. Now that order is under threat.

As the President stated, we are at an inflection point. The PRC's rapid military growth and aggressive behavior at sea has put it on a trajectory that will challenge our maritime advantage in the years ahead. Our naval forces—and the American people—must maintain a clear-eyed resolve to compete, deter, and—if necessary—defeat our rivals, while accelerating the development of a larger and more lethal future fleet. We must do so while integrating more closely with the Marine Corps and Coast Guard to generate integrated all-domain naval Power. Only by working as a team and taking care of our people will we be able to defend the Nation in the years ahead. We must move deliberately, but also with speed. Our actions this decade will shape the maritime balance of power for the rest of this century.

On behalf of more than 600,000 active and reserve sailors and Navy civilians, thank you for giving me the opportunity to testify today. I am grateful to this Committee, and to all of your colleagues in Congress, for your steadfast commitment to the Navy. We look forward to sailing alongside you to sustain our advantage at sea.

Chairman REED. Thank you very much, Admiral Gilday. General Berger, please.

STATEMENT OF GENERAL DAVID H. BERGER, USMC, COMMANDANT OF THE MARINE CORPS

General BERGER. Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee, over the past couple of years, since becoming Commandant, I have come to better understand and appreciate the bipartisan support of this Committee, which is critical to creating and sustaining the force that we have today but also to build the force that we are going to need for the future.

Now I realize, as we all do, that there are competing national priorities that you have to wrestle with, and that certainly puts pressure on defense budgets. But I am also confident that you have a clear view of the severity of the security environment around us.

As the Secretary mentioned, the competition with China and Russia is increasing and it is accelerating, and your military is going to need more advanced capabilities in order to effectively compete, to reassure our allies and partners, and to effectively deter war.

Force Design 2030 is the Marine Corp's answer to creating the cutting-edge capabilities that will better enable the fleet and the Joint Force to deter, to compete, and to respond with ready forces to any crisis, anywhere on the globe. To be clear, force design is the centerpiece of a broader, systemic modernization effort, as the Chairman pointed out, across the Marine Corps, one that improves more than just our equipment and our warfighting formations, but also our personnel systems, our training systems, and our family programs as well.

We are roughly 2 years into this modernization effort, and I feel I owe this Committee an update. While we do not have sufficient time this morning to address every detail, I do want to touch on three areas that are key.

First, we have improved the operational reach and the efficacy of our naval expeditionary forces, and this includes the Marine Expeditionary Units, the MEUs, which remain the crown jewel of the force. Beginning last year, we started our transition to a mixed capability of long-range ship and ground-based unmanned aerial systems, including the MQ–9 Reaper. This will significantly expand the organic ISR [Intelligence, Surveillance, and Reconnaissance] capabilities, and it will enable us to support both naval and joint operations, including anti-submarine warfare.

We have also initiated a partnership with industry to develop a future autonomous, long-range, unmanned surface vessel. That is going to extend the reach of our MEUs. That vessel will give us a new tool for maritime gray zone competition, and it will help in thickening the C5ISR [Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, and Reconnaissance] network, as we call it, and it will help us in conventional deterrence, naval deterrence, using loitering munitions.

Lastly, we are aggressively pursuing organic precision fires for our infantry, also with loitering munitions, and we will make a final decision on vendors this year.

Second, we have made significant advancements across our training and education enterprise. In the past 16 months, we released the first new doctrine we published in 20 years, actually two publications, one on learning and one on competing. We have also significantly advanced the intellectual framework for some of our future operating concepts. Earlier this year, we published a tentative manual for Expeditionary Advanced Base Operations, and we will use that to inform our exercises, our experimentation, and our training.

We have significantly expanded the resources we tie to wargaming and to experimentation. Last month, down in Quantico,

Virginia, we broke ground on a new, state-of-the-art war-gaming center that we will use in the future.

Finally, we have dramatically enhanced both the quality and the duration of training for our infantry marines. Infantry training is now 50 percent longer, and we added new modules to increase lethality.

Third, we have taken some important initial steps to improve our personnel system and our policies. To continue attracting the highest quality men and women into our Marine Corps, we raised both the AFQT [Armed Forces Qualification Test] standards for enlistment and the ASVAB [Armed Services Vocational Aptitude Battery] requirements for the infantry. Our enlisted performance evaluation system was antiquated. It was subjective. It was completely manual. We have now replaced that system with a cloud-based system, where marines are evaluated now based on clearly defined, objective standards that are under their control, and they can see across the force.

We revised our retention policies. Now qualified marines can reenlist a full year early, and I have delegated two commanders in the field the authority to re-enlist qualified marines on the spot.

Recognizing the strong connection between the health of our force and the support of our families, we revised out parental leave policies. Now they include adoptive and same-sex parents, and I will continue to push for expanded maternity leave for all marines. While it may seem like a modest accomplishment to some this year, we updated our maternity uniforms to improve both their utility and their professional appearance.

So while I am encouraged by the progress of Force Design, as well as our other modernization initiatives, I am not satisfied with the pace of change. We must move faster. To accelerate our programs, we, as a service, need to do a better job of explaining the details of Force Design 2030 to members and to your staffs, and that is my responsibility as your Commandant.

Last week, I offered to the House Armed Service Committee that I would be willing to testify on Force Design before the full committee, as well as the Appropriations Committee, if committee chairs would find that valuable, and I make the same offer here, Chairman.

It is critical that we build a shared understanding about where your Marine Corps is headed and why, and how your support is absolutely essential to our success. Equally important I believe is explaining how we are going to pay for it all.

During a recent speech at the Ronald Reagan Institute, Chairman Reed noted that belt-tightening, in any department, is always a challenge, but it also provides an opportunity to evaluate what is necessary, and I agree. In today's challenging budget environment, the Marine Corps has pursued a cost-neutral approach for the last 2 years to Force Design. We have self-funded our modernization. To ensure the success of this approach, I will ask your support for reducing the total procurement of some platforms, commensurate with the current reduction in our end strength. The fact is, today's Marine Corps is significantly smaller than it was 10 to 12 years ago, almost 24,000 marines smaller, and we simply will not need as many ground vehicles, will not need as many aircraft

as we did when the initial procurement decisions were made a decade ago. It is simple math.

So with the reductions outlined in our Force Design report I believe we will have sufficient resources to create the modern capabilities required for competition, for deterrence, and for crisis response, without a further reduction in our end strength.

I welcome the opportunity to work with this Committee, and I look forward to your questions, both in this hearing and in the weeks that follow. Thank you, sir.

[The prepared statement of General Berger follows:]

PREPARED STATEMENT BY GENERAL DAVID H. BERGER

INTRODUCTION

Chairman Reed, Ranking Member Inhofe, and distinguished Members of this Committee, thank you for this opportunity to present the annual report on the Marine Corps. More importantly, thank you for your continued support and leadership over this challenging year. I believe strongly that major change in existing force structure and ways of doing business are needed in this era of renewed great power competition. The strategic environment the Marine Corps and joint force operate in has changed, as has the domestic context as a result of the ongoing COVID–19 and related relief measures. We must therefore make appropriate adjustments to our investment plans to ensure a proper return on the taxpayers' investment. The promotion and sustainment of the Marine Corps that our Nation and fleets will need in 2030 and beyond requires your continued active support.

Since testifying last year, our Nation has engaged in a long overdue conversation on race and social justice sparked by several visible incidents of institutional racism, and perhaps more importantly—how to remedy the inequities of the present. As with all other Americans, I—and every other marine—have acknowledged these challenges, and will continue to do our part to overcome them once and for all. While confronting issues of inequality, we have simultaneously endured the adverse consequences of the COVID–19 pandemic. Like millions of others, marines and their families across the country and globe suffered the consequences of isolation, closure of our public schools, and increased childcare demands; and like those millions of other Americans, marines made the necessary sacrifices to stop the spread. I am proud of every one of those marines with their collective leadership and of their ability to rapidly adapt and lead by example.

Our Nation witnessed a small but violent minority attempt to subvert the rule of law through an overt act of violent coercion on January 6, 2021. Like most every other American, I was shocked by this attack on our democracy. I was even more dismayed to learn that some of those engaged in that attack had previously served in the military—to include the United States Marine Corps. Thankfully, we as a nation and military have done as we always do—learned, endured, and grown stronger. We have and will continue to actively work to identify recruits and marines who hold extremist views and we look forward to participating in the Secretary of Defense's new Countering Extremism Working Group to develop additional methods of keeping extremists from within our ranks.

Over the past year, I have continued to communicate my understanding of the future demands of naval expeditionary warfare and maritime gray zone competition. Related to the future of naval campaigns, I have articulated a case for change to reinforce and expand existing naval warfighting advantages and create future strategic advantages. It is abundantly clear that a future operating environment characterized by a maturing and proliferating precision strike regime will place heavy demands on our Nation's Naval Services. We are not yet organized, trained, equipped, or postured to meet those demands and support fleet operations. This is no longer a controversial assertion as it was when my predecessor first uttered it. The vast majority of defense professionals—including the Members of the bipartisan *Future of Defense Task Force—perceive* the same challenges I do in the emerging operating environment, as well as the urgent need for real innovation and rapid change in response. Although there is an ongoing, healthy debate about how and what we should change across the Armed Services, there are very few lining up to defend the status quo. We must continue to discuss these changes, but defense professionals have almost unanimously acknowledged that real change is required—and soon.

Though some things require substantial change, we should be clear to acknowledge those foundational tenets which remain as relevant and operationally suitable today as they have been over the previous 70 years. In 1952, Members of Congress noted the Marine Corps "can prevent the growth of potentially large conflagrations by prompt and vigorous action during their incipient stages. The nation's shock troops must be the most ready when the Nation is least ready . . . to provide a balanced force-in-readiness for a naval campaign and, at the same time, a ground and air striking force ready to suppress or contain international disturbances short of large-scale war . . ." This role as the Nation's force-in-readiness, prepared to create strategic advantage via its ability to be quickest to respond to either crisis or conflict, and prepared to both prevent and contain conflict below the threshold of traditional armed conflict remains as valid today as it was when first articulated.

PERSONNEL AND TALENT MANAGEMENT

None of our *Force Design 2030* aspirations are possible without addressing the people within our ranks. As Secretary Austin highlighted, "our most critical asset . . . is our people." I believe this is even more relevant within the Marine Corps. Marines are the heart and soul of the Corps. Almost all of your 225,000 marines serve honorably every day, representing the very best of our country and your constituencies. No institution, however, is without flaws. As I noted last year, malignant individuals and small malignant subcultures continue to exist within your Marine Corps. In this era of profound ideological division within our Nation, some individual marines regrettably bring with them, or fall victim to while in service, misogynistic, racist, and homophobic/transphobic ideologies driven by hate, fear, and ignorance. While I have instituted even more rigorous policies than previously existed to ensure we identify such individuals during enlistment and accession screening, I remain committed to identifying and holding accountable any marine unable to uphold our core values and to adhere to our unapologetically high standards. This is what you should expect from me, and you will get it.

Within the context of the larger national conversation on race, social justice, and equality, it became clear to me early in my Commandancy that there were symbols and behaviors within our Corps that challenged the cohesion and unity essential to military effectiveness. The Confederate Battle flag stood out as one such symbol. I am not a historian and do not take a position as to the true meaning of this ancient banner, but some in today's world have rallied around the colors of that defeated rebellion to foster division and hate. As a result, I prohibited its display aboard all Marine Corps installations beginning last spring. My primary responsibility is to prepare marines to fight and win in combat, and we cannot tolerate artificial division driving wedges among your marines—especially ones so easy to identify and remove. I will do everything within my authority to remove any obstacle preventing equality and cohesion. Signs or symbols that support or endorse hatred, ignorance, or injustice have no place in our Corps.

While these acknowledgements of past prejudice are good first steps, we must do more than simply look over our shoulders at the past. We must acknowledge the real bias and obstacles in the system today. We must promote and retain the very best marines; however, it is clear to me that a degree of structural racism and sexism exists within our current system. We must create a system of structural equality that ensures all marines—of all backgrounds—are able to use their best talents to solve the problems we soon will face. The diversity of thought and actions each marine brings will help us find more creative and innovative solutions to these future challenges. We must actively work to retain and grow this diversity of thought through a more diverse group of talented individuals, while at the same time protecting against extremism.

Over the past decade and in close coordination with Congress, we've prioritized the prevention of sexual harassment and sexual assault as well as dedicated tremendous effort into providing the appropriate response to these criminal acts. I am convinced of the linkage between sexual harassment and sexual assault, thus we will continue to make every effort to eliminate both from our ranks with your continued assistance. We have increased the number of Victim Legal Counselors dedicated to supporting sexual assault victims over the past 12 months. However, all of these efforts are dedicated to the response after a tragic event has occurred. We must do better at the prevention in order to stop sexual assault and sexual harassment before they occur. Although we conduct regular training aimed at preventing this from happening, we are still working to overcome unhealthy attitudes and behaviors recruits arrive with to Recruit Training. We must develop practices that identify those negative behaviors before they turn into heinous acts and prevent such behaviors from occurring in the first place.

Improving the capabilities and proficiencies of the individual marine necessitates we must also have the very best senior leaders for those marines. I am humbled to serve alongside the General Officers and Flag Officers within the Department of the Navy. But even one instance of misconduct or misbehavior within our General Officer ranks is too many. Over the past decade, the Marine Corps has selected several officers for promotion to brigadier general who subsequently failed to be confirmed by the Senate. This is unacceptable. Over the coming months, I will announce several major policy changes related to talent management to include how we screen and select our commanders and most senior leaders. We are currently reviewing the efficacy of implementing a 360-degree review for all lieutenant colonels and colonels eligible for command selection and all colonels eligible for selection to brigadier general, to help ensure we identify the absolute best who have earned the trust and respect of juniors, peers, and seniors alike. In addition to these issues related to screening, I remain concerned at the absence of Black officers within the senior ranks of our aviation enterprise and specifically within the ranks of our fixed-wing pilots, as well as the paucity of female general officers. We are currently studying both issues, and will share the results of those studies once completed.

As you are aware, we cannot create new senior leaders in a day. If we are to correct our gap in diversity at the senior ranks, we must also address diversity at accessions. The largest single source of commissioning within the Marine Corps is the U. S. Naval Academy, accounting for nearly 20 percent of officer commissions each year. A recently released study identified that almost 75 percent of the nominations to our service academies were given to white students. The diversity of this population has a direct impact on what leaders are available for selection to our senior ranks.

It is not enough that we recruit and train the very best. Once marines have joined our ranks, we must nurture and incentivize them along their individual journeys through a modern talent management system flexible enough to account for changing career interests and common life choices over time. Without such a system, we will increasingly struggle to retain the very best people in an ever more competitive marketplace. Our one-size-fits-all, industrial-era approach that treats individuals as interchangeable cogs within a larger machine does not appropriately incentivize the most talented individuals to remain in service. We are currently reviewing policy options that will offer marines greater flexibility when it comes to tour lengths based on an individual's circumstances—most notably when a marine has a child entering or completing high school. Our marines must not be forced to choose between being good parents or being good marines. Those sterling goals must be compatible. I remain committed to improving the lives of our marines as they become parents and we are looking into ways that would prevent them from having to choose between the newborn and continued service as a marine. I truly desire a Marine Corps known for being the best within the joint force for our treatment of new parents and families—and not just our warfighting prowess.

It is a well-known issue that the Marine Corps is struggling to recruit and retain Americans possessing the crucial science, technology, engineering, and mathematical skills and competencies required for the future. Technology companies present exciting and challenging opportunities for software developers, cyber professionals, and engineers. We must offer opportunities that allow someone to choose both service and professional reward. In addition, we must do a better job targeting the application of our NROTC scholarships to these individuals, as well as explore new possibilities with Historically Black Colleges and Universities to satisfy these shortfalls.

The military services—including your Marine Corps—continue to lose the competition with the civilian airline industry for pilots and maintainers, even with the adverse impacts of COVID–19 on the airline industry. We are not maintaining sufficient numbers of naval aviators and F–35 maintainers to sustain either our existing inventory of aircraft or aircraft programmed for the years to come. Within our F–35 community, we have a shortfall of both pilots and maintainers. I am concerned that if we do not remedy these shortfalls in the very near future, we may be in a situation in which we are directed by Congress to procure aircraft for which we have insufficient pilots and maintainers.

TRAINING AND EDUCATION

A key element of our larger force design transformation is our need to adopt an information age approach to training and education that produces better leaders and warfighters more effectively and efficiently. The essence of this approach is to focus on identifying, developing, and sustaining the unique talents of individual marines, not turning out MOS-shaped cogs to fit MOS-shaped slots in a machine. Bet-

ter warfighters in an era of exponential change means adaptive, critical thinkers who are also tactical and operational masters of their profession. Among many implications of this shift will be higher expectations and intellectual standards for marines, especially commissioned officers, at every stage of their selection for and attendance at formal schools. We still need standardized training and education to set a baseline and inculcate our core Service values and ethos, but there are significant aspects of entry-level training that must be adapted. Much of our current understanding of future warfighting requirements, associated concepts, and force design point to a more highly trained force from the entry-level onward. We need to change *how* we train and educate as well. We have known for a long time that rote repetition and even "perfect practice" against static, unresisting targets is only the barest beginning of mastery. Consistent opportunities to make tactical and operational decisions against a thinking enemy must be a critical part of our curricula at all levels. This kind of force-on-force wargaming and training must stand on a solid foundation of military history and theory—games, simulations, and exercises are necessary, but not sufficient. We will develop that foundation in school, but sustain it by rigorous, accountable, self-directed effort. We must address the question of "standards" transparently and head-on to create the force we desire, and to create the force we advertise. In an initial step to creating a philosophy and culture of a learning organization, last year I signed the first all-new service doctrine since 1998; *MCDP 7 Learning* was released in February and *MCDP 1–4 Competing* in December. In addition to releasing new doctrine, we have elevated command of our Training and Education Command to a three-star general, equal to all other Deputy Commandants, and are in the process of re-establishing a robust Futures Directorate.

Achieving diversity of thought requires fixing our entry-level instruction to allow every new recruit and officer candidate the same opportunity to master these skills without it impeding their future career opportunities. Not every young man or woman who joins our ranks grew up participating in activities relevant to individual battlefield skills such as marksmanship, orienteering, water survival, or technical skills. As a matter of longstanding practice, however, we continue to assess potential at the very earliest stages of our recruit and officer training programs based on performance in precisely those skills. There is no doubt of the continuing importance of these military basics, but we cannot expect every new marine to master those individual skills with the same amount of in-service instruction, regardless of previous experience. A new recruit who has never touched a rifle cannot be expected to master marksmanship in the same amount of time as a recruit who grew up handling rifles regularly, and a marine who never learned to swim should not compete unaided for job placement with a marine who grew up as a competitive swimmer. In effect, we penalize marines who fail to master these basic skills because they did not start with the same knowledge or skill base. While holding the line on the standard of basic competencies that define a marine, our entry-level training must provide the instruction necessary for every recruit and officer candidate to achieve mastery in basic skills, regardless of how much time it takes.

The COVID–19 pandemic brought new challenges and opportunities to your Marine Corps. During the entire time, your force-in-readiness continued recruiting, training, operating, and deploying around the globe. Although we did not stop any of our activities, we did learn many lessons from the pandemic that we can continue to use going forward to make a more resilient and capable force. We devised new methods of virtually connecting with potential recruits and with our force, internally. For entry-level training, we spread out recruits while they slept and installed more handwashing stations, which has virtually eliminated the inevitable illness that the new recruits will pass around as they come in from all over the country. A key factor in this success has been the level of discipline instilled by small unit leaders which prevented any significant outbreaks and kept marines healthy. Your marines continue to serve their communities by establishing Federal COVID–19 vaccine sites in local communities in support of the Federal Emergency Management Agency. As President Biden highlighted, we don't have enough people to provide vaccination shots—put the shots in people's arms—so marines are filling in this immediate shortfall.

GENDER INTEGRATED TRAINING

The Fiscal Year 2020 NDAA directed the Marine Corps to integrate training at both Marine Corps Recruit Depots Parris Island and San Diego. Since the signing of the law, we have trained multiple integrated companies at MCRD Parris Island. In February, the recruits of Lima Company were the first gender-integrated company at MCRD San Diego in the installation's 100-year existence. To train the first

females at MCRD San Diego, we graduated the first gender-integrated class at Drill Instructor School in San Diego in December and relocated female drill instructors from MCRD Parris Island. We will take the lessons learned from this company as well as a concurrent study to identify the requirements needed to fulfill the 2020 NDAA within the prescribed timelines. However, as I have publicly stated several times, we will prioritize options that provide the best training and most efficient use of resources to ensure marines graduating from boot camp are ready for the rigors of service in an elite organization during challenging times.

FORCE DESIGN

Shortly after I testified before this Committee in the spring of 2020, I published the *Force Design 2030* report. *Force Design 2030* is how your Marine Corps is changing its trajectory to create advantage for the fleets and joint force in both maritime gray zone competition and more traditional conflict. Although we need new capabilities to deter adversaries, we must fundamentally change how we think about armed conflict. We can no longer view warfare through the binary lens of war and peace, but should recognize the existence of a cyclical continuum of competition that occurs every day and involves all elements of national power. Historically, the military viewed maintaining the peace as deterring war through denial or by punishment. Force Design 2030 offers a third option in addition to those two that will counter strategies below the threshold of armed-conflict by winning the reconnaissance and counter-reconnaissance competition and facilitating deterrence by detection.

At its core, *Force Design 2030* is a campaign of learning. Through wargames, analysis, and limited experimentation, it has become clear the joint force needs a capability that operates persistently and with maximum organic mobility and dispersion to compete and deter in the contact and blunt layers. The vulnerability of large fixed bases and shore-based infrastructure to long-range precision strike, combined with the impracticality of defending such infrastructure from the pacing threat's emerging capabilities at any politically-feasible level of resourcing and regional posture, necessitates that the stand-in force be able to perform these functions from a strictly expeditionary and highly mobile and resilient naval posture. This refined analysis and understanding is what is driving our Force Design 2030 to support concepts like *Expeditionary Advanced Base Operations* (EABO), as well as informing the recently released *Tentative Manual on Expeditionary Advanced Based Operations.* We will continue to refine and update the *Tentative Manual* with the lessons learned from our FMF experimentation. In the near future, we will release our latest concept—*Stand-In Forces.*

Much as our 29th Commandant codified maneuver warfare in our principal doctrine *MCDP–1 Warfighting* to instill a maneuver warfare mindset into every marine, I felt it necessary to codify how we compete every day around the globe. We recently released a doctrinal publication entitled *Competing* to instill a competitive mindset into every marine, whether above or below the threshold of armed conflict. Marines—and the military as a whole—must be aware that every action or inaction has an effect on reassuring our partners and allies and deterring our competitors. All that we do, from our force laydown, to the activity at each location, to the equipment we buy, signals our commitment to reassure and deter. In a globally connected operating environment, we no longer have the luxury of maintaining a binary combat or garrison mindset; our posture and mindset must be one of continuous competition.

NAVAL EXPEDITIONARY STAND-IN FORCES

Expeditionary advanced bases are a platform for small, mission-tailored groups of marines to distribute and hide in plain sight with the assistance of advanced camouflage, cover, concealment, detection, and deception (C3D2) capabilities against a competitor who is seeking to locate our forces. Expeditionary advanced bases will enable the convergence of capabilities from multiple domains and create the virtues of mass without concentration. The Marine Littoral Regiment (MLR)—the base unit for our future force—will provide fleet and joint force commanders with persistent, survivable forces that will enable the generation of effects within areas that our adversaries hope to deny to us through their integrated systems of anti-access and area-denial capabilities. In terms of hardware, marine capabilities will include antiship Naval Strike Missiles (NSM) loaded on the unmanned Remotely Operated Ground Unit Expeditionary (ROGUE) Fires; self-sustainment and mobility with the Light Amphibious Warship (LAW); and, long-loiter aerial reconnaissance in an expeditionary environment with the Medium Altitude, Long Endurance (MALE) Group 5 unmanned aerial systems (UAS). Future infantry units operating within the MLR construct will be equipped with organic precision fires to include loitering muni-

tions. The MLRs will be networked with our F–35 capabilities, providing a further layer of combat credibility and sensing. In the future, these forces could employ more advanced munitions such as Tomahawk Land Attack Munitions (TLAM), Maritime Strike Tomahawks (MST), SM–6 containerized anti-ship missiles; and a wide array of unmanned or optionally manned systems to enhance deterrence. Without these long-range precision fires, the MLRs will not be suitable to support the fleets and will lack the ability to influence the vast maritime area your Marine Corps must do.

In the even more critical human domain, these capabilities will encompass the necessary training and education to produce leaders who understand how to deter competitors and provide civilian leadership strategic options across a wider spectrum. The MLRs will offer deterrence by detection through constant surveillance of the competitor, complicating their decision-making calculus if they attempt fait accompli gambits, and doing so while networked into the larger architecture of naval and joint command, control, computers, communications, cyber, intelligence, surveillance, reconnaissance, and tracking (C5ISR–T) articulated in the Joint All-Domain Command and Control (JADC2) concept and previous discussions on Mosaic Warfare.

With global sensors becoming ubiquitous, the value of reconnaissance and counter-reconnaissance or scouting and counter-scouting will increase. *Force Design 2030* offers civilian leaders strategic options to identify, deter, and hold accountable competitors challenging U.S. interests or infringing on international norms at any point on the globe. It creates advantage by providing uniformed and civilian leadership with a force capable of denying key maritime terrain to an adversary or to force a change in decision calculus and facilitate de-escalation. Those naval expeditionary forces will also be capable of rapidly sensing, making sense, and acting upon information from inside the enemy's weapon engagement zone (WEZ) in support of the fleet and larger joint force, further complicating adversary decision calculus. These stand-in forces will be able to support anti-submarine warfare (ASW) efforts and help sanitize key maritime straits, thus expanding our strategic undersea warfare advantage. Your Marine Corps is transforming into a force capable of competing and winning the hider/finder competition by proliferating sensors to detect adversary presence, employing advanced C3D2 for resilience, and maintaining a lethal array of long-range precision fires to prosecute targets at a time and place of our choosing—whether ashore or afloat or in the air. Stand-in forces will simultaneously satisfy traditional requirements from the fleet and combatant commanders for a modern, resilient crisis response force capable of responding across the range of military operations. And, as noted in the most recent testimony by the Commander, USINDOPACOM, these stand-in expeditionary forces are further required as the forward leading-edge to any strategic defense in the Indo-Pacific and any maritime defense-in-depth.

From our continued wargaming and experimentation, we have learned much about the utility of multi-domain reconnaissance. As a result, over the coming months a new marine reconnaissance enterprise will consolidate disparate elements of existing organizations within a structure capable of generating a coherent, persistent, forward-presence focused on key maritime terrain that is vital to U.S. national security interests. The next step will be the development of our Mobile Reconnaissance framework which will deliver expanded all-domain capabilities to our naval expeditionary forces and fleets via a combination of Marine Commandos, manned and unmanned surface platforms to include the Long-Range, Unmanned Surface Vessels (LRUSV) and small boats, manned and unmanned ground Ultra-Light Tactical Vehicles (ULTV), unmanned aerial systems, and unmanned subsurface vehicles. As with other force design efforts, these forces will be fully capable of networking with our 5th generation F–35 capabilities as well as connecting with the larger joint architecture. In addition to offering continuous surveillance in the contact layer, the MLR increases lethality, disbursement, mobility, and survivability in a way that our current stable of large, expensive, high-signature platforms cannot match to deter and counter aggression in critical regions. The MLRs will provide a unique expeditionary advanced base capability, but they will not be the sole definition of the FMF as our Marine Expeditionary Units will remain our "crown jewel." Your Marine Corps can compete, deter, and win as part of a naval expeditionary force operating in international waters and with light footprints ashore on the territory of local allies and partners. It does not require the sustained presence of heavy ground forces or the regular deployment of large, land-based aviation elements. These unique capabilities make the Marine Corps the ideal choice for a force-in-readiness that serves as the backbone of the contact layer because our forces can cooperate with allied and partnered nations without burdening their local infrastructure, whether for steady-state operations or disaster response operations. Addi-

tionally, the sensing elements of the FMF coupled with lethality are key attributes in preventing conflict.

POSTURE

Twenty-first century strategic competition requires a new posture to deter modern threats. Our current force posture is strikingly similar to the one designed coming out of the Korean War. That posture was designed to deter and confront a Soviet threat that consisted of strategic bombers and Intercontinental Ballistic Missiles. Over the last two decades, our strategic competitors took note of our strengths and designed forces specifically to counter them. We must now adjust our posture against the pacing threat of China due to its ability to hold our fleet at stand-off ranges and prevent significant force projections. This does not mean abandoning our forward position of advantage, but rather adopting a more robust and resilient forward-deployed posture as described in testimony by Admiral Davidson as part of a larger defense-in-depth.

Marine forces working with Navy ships must occupy space within the contested first and second island chains in the Indo-Pacific with the ability to effectively operate in all domains. Guam remains one of our most important strategic locations as it is US territory located closest to contested maritime regions. In order to effectively deter by detection, our forces must be within sensor and striking range to impose cost on the adversary through their allocation of limited C5ISR–T assets or determining that the cost is too high to attempt anything that would cross the line of established international laws and norms. However, while Guam remains a strategically important location within our larger defense-in-depth, we must not ignore the potential impacts to it due to the adverse effects of climate change. We must take the necessary steps to protect Guam and the strategic advantage it provides.

Our posture includes more than the laydown of our forces around the world, it also must include what our forces are doing in those locations. As Secretary Austin has told us, "our success will depend on how closely we work with our friends around the world to secure our common interests and promote our shared values." Marines regularly conduct training with allies and partners globally. This training is beneficial to building trusting relationships and interoperability. These relationships are not—and should not be—one way, in that US Forces tell partners and allies how to operate. We can learn from other nations as much as we can teach. For example, the Japanese Amphibious Rapid Deployment Brigade may have used the U. S. Marine Corps as an example in its development, but we have much to learn from them based on how quickly they designed, assembled, tested, and operationalized the brigade. Our commitment to working with allies and partners creates a mutually beneficial relationship for our military organizations while simultaneously signaling our resolve to competitors. Initiatives like the Pacific Deterrence and the European Deterrence are so important in supporting our posture.

COMPETITION AND RISK

Some critics of our *Force Design 2030* suggest that non-stealthy platforms such as the LAW, LPD–17 class amphibious ship, and the current Group 5 UAS are operationally unsuitable for high-end warfighting. This critique's foundational assumption is that our decades-old stealth technology or military-standard naval architecture will be overcome with technological countermeasures and that stealth technologies will become affordable enough to proliferate the operating environment in large quantities. Survivability under such conditions is likely to prove far more a matter of quantity, dispersion, signature management, and distributed lethality than of being able to avoid technical detection or defend against all threats. We must view survivability in terms of the entire system—the entire system must be able to survive long enough to accomplish the mission vice an individual platform. The expeditionary system of platforms our marines employ—and the networks they operate on—must be capable of competing and deterring below the level of armed conflict as well as fight at the high-end to reassure our partners and allies as well as demonstrate a credible capability to a would-be adversary. For example, while not a part of the currently envisioned program, LAWs operating in plain sight with containerized missiles could effectively compete and deter. Such a reimagining of the program could involve greater costs, so we will have to study the benefits and make resource informed decisions about tradeoffs in capabilities and capacity. Traditional amphibious ships, such as the LPD–17s, possessing tactical advantages derived from well-decks will confound adversaries and force them to consume resources attempting to positively identify those capabilities loaded inside—whether unmanned surface vessels, unmanned underwater vessels, or more traditional capabilities. Long-endurance Group 5 UAS, like the MQ–9, also provides the persistent

presence necessary to win the hider /finder competition for the fleet. Additionally, a proven platform like the MQ–9 supports quickly learning the platform through the experience of the US Air Force while continuing adaptation and innovation over time as we procure the future system.

If competition expands from opening volleys or punishment strikes to large-scale conflict, the Fleet Marine Force offers the Joint Force Commander a persistent stand-in force capable of conducting reconnaissance, counter-reconnaissance, and targeting in the blunt layer. A stand-in force with the ability to support allies and partners while striking the adversary with long range precision fires, 5th generation short take-off and vertical landing aircraft, and a host of electronic warfare options combined with the mobility of the Amphibious Combat Vehicle (ACV), LAW, and unmanned surface and undersea vehicles provides a survivable option to buy time for the remainder of the joint force to bring war-winning capabilities.

LOGISTICS AND RESILIENCE

Sustaining the force we are developing now becomes even more critical in the years ahead. The relative ease with which we have been able to project power into the Middle East over the last few decades has lulled us into a false sense of security. As a result, we have optimized service logistics efforts to support requirements without regard to the threat actions that could disrupt them. My predecessor said "we are going to have to fight to get to the fight." I will take that a step further by saying we will have to fight to sustain our warfighting efforts over time. The Joint Logistics Enterprise must connect our emerging operational concepts at the tactical edge all the way back to the defense industrial base. We have been an end user of the system, but that needs to change. We must develop new methods for the Naval Force to enable broader joint force sustainment efforts. On a day-to-day basis, today's distributed force strains our systems to the limits. This will only get more challenging considering the dynamic, evolving threats that competitors can apply against our supply chains, manufacturing bases, and global sustainment network.

Based on anticipated funding levels and the additional budget uncertainty that has been introduced by the COVID–19 response, we must clearly consider risk as we move forward. Our force design efforts for the future will provide the context necessary to make the difficult choices for our installations and logistics enterprise. We can no longer accept the inefficiencies inherent in legacy bureaucratic processes nor accept incremental improvements. In order for our installations and logistics organizations to change effectively, we must better understand the implications that Force Design 2030 will have on the FMF across multiple time horizons so we can resource our installations and logistics enterprise appropriately. In coordination with partners both inside and outside the service, we will evolve our organization to meet the future FMF's operational requirements in the air, on land, and at sea while continuing to provide world-class support to the force today. This may require a change in the existing command relationships between the bases and stations and the forces they support. I will keep the Committee fully informed of any such changes as our understanding evolves.

Finally, in an effort to modernize our bases and stations in a manner commensurate with our overall force design, we are experimenting with advanced force protection systems enabled by artificial intelligence at several of our installations. This capability is promising and may provide the service an opportunity to greatly enhance the protection of our installations while drastically cutting personnel costs.

MAJOR DEFENSE ACQUISITION PROGRAMS

I have always operated under the assumption that evidence, wargame findings, modeling and simulations, and my own best military advice as Commandant would persuade people across the defense enterprise and within Congress that we need change now. While I remain convinced that this assumption remains valid and look forward to a continued dialogue with the Committee, we have more work to do to persuade key audiences of the merits of our desired changes. Congressional support for Ground Based Anti-Ship Missiles (GBASM); LRUSV; Medium Altitude, Long Endurance UAS; and I believe that Light Amphibious Warship (LAW) will be essential to our modernization efforts. We will continue to work with the Congress to demonstrate the importance of a rapid acquisition of these critical capabilities. I have repeatedly asked for Congressional support to change legacy programs that are no longer operationally relevant or have become cost prohibitive, as well as support for new initiatives that create a relative warfighting advantage. This is the kind of agility we will need going forward in order to sustain that warfighting advantage.

Based on my understanding of the strategic challenges before us and my desire to remain the best steward of taxpayer dollars, I am convinced that we must be willing to critically assess the scope of current Programs of Record for our Major Defense Acquisition Programs (MDAP). As we reduce the end strength of the Marine Corps in order to internally fund our modernization, each MDAP must be reevaluated for capacity and sustainability. We will need the continued support of Congress to re-scope any program that exceeds our requirement or is unaffordable to procure, man, and sustain.

In addition, we should acknowledge that up to three quarters of a weapon system's cost occurs in sustainment— the operational and maintenance upkeep after the initial acquisition. With the new procurement of large weapon systems like the F–35B/C, CH–53K, MV–22, JLTV, and ACV—to name but a few—we should be prepared to modify programs of records to ensure affordability and viability throughout the entire lifecycle of each program. Prioritizing high-end platforms without resourcing the supplies and infrastructure needed to sustain its operational capability is fundamentally irresponsible; the result would be a hollow force.

With every dollar we expend to upgrade a legacy platform that is no longer survivable against a peer competitor, we are slowing our rate of transformation. Our competitors no longer wait to see what America does and follow suit; they have embarked on their own trajectory, which currently outpaces ours. Our *Force Design 2030* addresses this problem by forcing the competitor to adapt to us through the tactical, operational, and strategic challenges a truly modern force presents. This does create domestic dilemmas as we are forced to transition from legacy platforms built in certain districts to modern and relevant equipment that may be built elsewhere. However, if we are to succeed in this great power competition, we must make those difficult choices. I remain confident that this can occur in a responsible and balanced way, without creating winners and losers, and look forward to discussions with each of you on a way ahead that satisfies shared interests.

The Marine Corps remains constrained by an acquisition process that tries to eliminate risk—risk poorly defined as uncertainty. We must recognize that incrementally better versions of the current Marine Corps is not going to be enough for real great power competition. As noted in the House Armed Services Committee's Future of Defense Task Force Report 2020, our acquisition process is too sluggish to work effectively at scale with many technology companies, as they need to innovate and compete daily to survive in their dynamic industry. With the rapid transition we need to make over the next decade, we must be willing to incur some short-term risk to better prepare and compete in the future. The ability to prototype new technologies, then aggressively experiment and exercise with prototype equipment to understand its full capability on the battlefield is paramount. Lastly, I agree with the Report's recommendation that we need a process that better bridges the "valley of death" to transition critical prototype equipment into full-scale fielding without taking years through the traditional planning, programming, budgeting, and execution process.

READINESS AND STRATEGIC ADVANTAGE

As we build a more capable and lethal force, we must also take into consideration the readiness of that force. Since 2017, the Marine Corps has significantly increased the availability of forces to Combatant Commanders based on the generous funding of Congress. As marines deploy forward in support of operational requirements, they buy down today's risk by deterring competitors from violating international norms while assuring allies and partners of the strength of our commitments. However, the mere availability of those marines does not equal readiness to compete in the maritime gray zone, nor does it create strategic advantage to deter or defeat rapidly evolving threats. It is time for us to embrace a more sophisticated and balanced understanding of military readiness and cease using availability as the primary metric in our readiness evaluations. This antiquated model is hugely consumptive and forces us to spend limited resources ensuring the availability of platforms designated for retirement and replacement. This also applies to equipment that we are attempting to transition to more modern capabilities. For example, every dollar spent to make a 4th generation aircraft that has exceeded its intended service life is a dollar that cannot be spent to accelerate the fielding of 5th generation very low-observable aircraft and advanced UAS. We must invest in future capabilities that create, maintain, and expand warfighting advantage to ensure a ready force tomorrow that maintains its ability to compete and deter.

During the most recent conflict between Armenia and Azerbaijan, Armenian ground forces that we would have labeled ready based on availability, were easily targeted and destroyed by Azerbaijani forces employing elements of a precision

strike regime to include swarms of loitering munitions and lethal unmanned systems. While Armenia's tanks and infantry fighting vehicles were available, they were not operationally suitable, thus not ready for the conflict. As our competitors continue to expand their capabilities, we will soon find ourselves outmatched unless we change our readiness framework. To do so, we should embrace a new readiness paradigm in which availability ranks behind generating a relative warfighting advantage. A ready capability in the future must be one that is both available when we need it and creates a strategic warfighting advantage against a specific threat in great power competition and conflict.

A ready force that creates a strategic advantage over the pacing threat must be organized to generate faster decision cycles against the enemy. A large part of our *Force Design 2030* efforts is aimed at developing the right capabilities for the future force, but just as important is devising the correct organizational model to employ those capabilities. I do not support creating more or larger headquarters organizations to accommodate the larger quantities of data coming in as I feel this will only slow the decision-making process. I'm also not committed to organizations that we have employed in the past if they don't work to fulfill our future requirements. In addition to right-sizing our FMF, I've also directed an ongoing assessment to reduce 15 percent of our personnel across Headquarters Marine Corps to generate savings that we can reinvest into our warfighting capabilities without losing the institutional processes necessary to support an adaptable force.

Your Marine Corps, and the Naval Service as a whole, have a proven record when it comes to driving change. Both the People's Republic of China and Russia modernized their militaries over the past decade based on what they assessed as our strengths and our competitive warfighting advantages. They adapted their operational and strategic approaches to counter us and now we must modernize in order to remedy shortfalls and drive the next cycle of change. Simply making our legacy platforms better or more of them available will not force our competitors to change course, nor will it create the strategic advantage required. I concur with the Air Force Chief of Staff General CQ Brown: we must accelerate change or lose.

One way we can accelerate change is by seeking a more nuanced understanding of readiness as it applies to each service or even common force elements within each service, and to ask—how many forces-in-readiness can we collectively afford? A critical factor of understanding readiness is identifying when a joint force will need a capability in accordance with a detailed mobilization plan. The Marine Corps—as well as other critical elements of the joint force—will always be at the front of the timelines because we are the force who is present before conflict and deters an adversary's early escalation. Serving as the foundational element of our persistent contact layer allows time for the joint force to mobilize and surge the war winning capabilities of the other services. However, without your marines forward deployed to tamp back the aggressor and create decision space, the joint force will not have the time and opportunity to deploy.

FLEET DESIGN AND NAVAL INTEGRATION

Thus far, my comments have focused on issues germane to my role as Commandant of the Marine Corps—to organize, train, and equip Marine Corps forces in support of the Fleets and Combatant Commanders. Please now allow me to share a few thoughts with you as one of the three senior naval officials testifying before you and also as a member of the Joint Chiefs of Staff. My experience and role as a senior Naval officer requires that I share my best military advice in the ongoing fleet design conversation. One thing is clear: serious naval professionals both in and out of service agree that the status quo fleet will not provide the strategic advantages required in an era of great power competition, and must change.

I would like to state for the record my thanks to the CNO and his OPNAV staff for their continued support redesigning the fleet and the amphibious / naval expeditionary portion of it without reservation or hesitation in support of our shared understanding of the operational dilemmas created by peer adversaries. The CNO is leading a major change in future fleet design and I wish to acknowledge that for the record, and formally communicate my support. I agree with the CNO that the Navy does not need to be "reimagined" or "reinvented," and neither does the Marine Corps for that matter. However, as the CNO has noted, how we perform our core roles and functions of deterrence, maritime security, power projection, and sea control must change—just as it has many times in the past.

Being physically present within the area of responsibility is no longer evidence of success, and we should no longer think presence somehow produces deterrence in and of itself. For naval presence to deter competitors, physical positioning must create real strategic advantage. The specific capabilities present must provide a com-

petitive warfighting advantage against specific peer threats and do so in a resource neutral manner. Dispersing large numbers of militarized fishing vessels with a nuclear aircraft carrier may result in the temporary absence of those adversary vessels in key maritime terrain, but it comes at a fiscally prohibitive cost, not to mention the operational cost of not having that warfighting capability postured to project power via its carrier air wing. However, having a robust inventory of submarines, frigates, light amphibious warships, and networked unmanned or optionally manned surface vessels—or even T–AGOS and military sealift vessels—operating in the same region would provide a competitive warfighting advantage without resource prohibitive operating costs. Such a fleet would further reinforce our strategic advantages in undersea warfare through their modern ASW capabilities and our advantages in naval expeditionary warfare. The process of redesigning the fleet will not be an easy or inexpensive, nor will it be accomplished quickly, but it can be done with your continued oversight and support. I wish to thank the Secretary, the CNO, and the Members of this Committee for their continued commitment to the construction and sustainment of our ships necessary to support amphibious operations.

Not that long ago, the Amphibious Ready Group (ARG) that comprised the Navy ships for the Marine Expeditionary Unit (MEU) consisted of five ships with a combined gross tonnage of approximately 73,000 tonnes. Today, our standard three ship ARG/MEUs operate in a distributed manner from platforms with a combined gross tonnage of approximately 86,000 tonnes. As with many other systems and capabilities across the joint force, our ARG/MEU has become smaller yet heavier, while simultaneously being asked to be more agile. Distributed Maritime Operations is not only the future of naval operations, but in reality—the present. As we modernize our marine forces as part of our force design efforts, we must also modernize the ARG/MEU. We have seen the great value of disaggregating the ARG/MEU with each individual ship conducting its own mission within the same Area of Operational Responsibility for a Combatant Commander. Greater numbers of smaller ships would allow us to disaggregate for a greater number of mission sets while maintaining the ability to reassemble into a large force with expansive mission sets. Defining our future operational concept will also help drive us to better understand what we need from LXX—or the next class of amphibious ships. We know they will need to be smaller, faster, more lethal, and better networked, but we don't yet know to what degree we need these characteristics. As we continue our analysis with the Navy, we know that they must be affordable so that we can purchase and maintain the number of ships we need to operate globally. Therefore, our requirements will be matched to a program that is affordable and sustainable over the long-term.

Finally, I wish to state my support for the observations, positions, and conclusions articulated by Admiral Davidson in his most recent testimony. The vision he articulated for a strategic defense to include a defense-in-depth with naval expeditionary forces postured forward and west of the international dateline is one I share, and have attempted to communicate as often as possible over the previous 22 months. I share his conclusion that highly lethal and distributable expeditionary forces than can generate the effects of mass without the liabilities of concentration are of the highest utility, and am doing everything possible to create such forces via my force design efforts with the Marine Littoral Regiment.

CONCLUSION

The American people expect us to be our own toughest critics, and we are. We have significant strides to make in the near future, but I know the leadership and support of this Congress will help us to revolutionize our approach to competition and conflict. I pledge to keep you informed and involved in the transformation of your Marine Corps. The American people are counting on their Marines, Navy, and joint force to maintain our ideals and way of life now and into the future. The dustbin of history is crammed with once successful militaries, businesses, and organizations that recognized the world was changing and attempted to meet that change through merely incremental improvements in existing ways of doing business. Despite their previous successes, these institutions failed in the new environment because they could not make the fundamental changes necessary to remain on top. We are now in the midst of just such a period of change, and we will need all the help and support of this Congress to ensure we continue our long history of successful innovation and adaptation.

While our aspirations and expectations are great, I am certain that you expect nothing less from your Marine Corps. With your continued support, we shall succeed. We will achieve our goals of transformation, both in our culture and warfighting capability, to best support the naval campaign and the joint force.

Chairman REED. Thank you very much, General Berger.

Secretary Harker, would you give us some insight as to why the Navy chose to cancel the DDG–51 multiyear procurement, the second ship, and then add it as your first unfunded priority?

Mr. HARKER. Thank you, Senator. That was the most difficult choice that we faced this year. As we looked at trying to balance readiness, capability, and capacity, taking that DDG out of the budget was the most difficult choice that we faced, and it was something that we wish we could have afforded. After visiting both shipyards where we build DDG–51's, I have the utmost confidence in those shipyards' ability to deliver another DDG–51 if we had been able to afford it in the budget, but it was unfortunately a challenge for us.

Chairmgian REED. Thank you. Admiral Gilday, we frequently sort of focus on the number of ships as the most important metric, but it seems to me there are other factors, for example, communications, concealment of vessels, operational readiness of vessels, where you can have a 500-ship fleet with only 100 able to sail. Then now, with the ability to match autonomous vehicles to manned vessels, unmanned autonomous vehicles, is this notion of a fixed number of ships consistent with actual operational needs?

Admiral GILDAY. Sir, I would like to answer your question in three parts. First of all, with respect to numbers, it is one metric, and if we are going to fight as a distributed for against a military as robust as China, as an example, we are going to need a bigger Navy. I believe the analysis has been consistent in that regard since 2016. However, I do think this is really all about capabilities, and joint capabilities in terms of what the Navy brings to the fight for the Joint Force.

So one of the things that I think that the analysis that we did last year was particularly helpful is not only talking about the size of the fleet, as you mentioned, but most importantly, the composition of the fleet, submarines being right at the top of the list in terms of—you hinted at this—in terms of concealment, right, in terms of our most survivable strike platform, where we have overmatch right now against any adversary, and we want to maintain that.

Aircraft carriers, the most survivable airfields in the world, quite a platform. The USS *Enterprise,* which was our first nuclear-powered carrier and was around for 50 years, had 59 different type series aircraft that flew off the deck of that aircraft carrier. There is incredible flexibility here, particularly, sir, as you hinted at uncrewed or unmanned in the future. Our shipbuilding plan begins to touch at that, and we are on a very deliberate path, some of it based on the feedback from this Committee that we solve two key problems with respect to unmanned before we make a decision to come to you for money to scale. The first is the reliability of those platforms at sea, that they can sustain themselves, be self-sustaining at sea for long periods of time, and the second is the ability to be able to command and control them with a high degree of confidence, and so, sir, I hope I have touched on your point adequately.

Chairman REED. Thank you, Admiral.

General Berger, the Littoral Operation and Contested Environment Doctrine, the Expeditionary Advanced Base Operations, essentially what you are talking about, as I sense it, is a widely dis-

tributed environment for marines, that they would be separated in relatively small detachments across a broad area. Is that a fair estimate?

General BERGER. I would say so, sir.

Chairman REED. So that raises the issue of how do you supply logistic support to widely dispersed elements in contested environments.

General BERGER. I would agree with that. We have not had our supply chains challenged since World War II. We have had assured supply lines for 70 years, said another way. We have to focus now on tactical, operational, strategic logistics. If we don't, then we will have the very best capabilities that we can't sustain forward, and we are not going to allow that to happen. Logistics is a key. Within the Marine Corps we view it as our pacing function right now.

Chairman REED. Thank you very much. I have been informed that a quorum is present, and since a quorum is now present—excuse me, before I recognize Senator Inhofe—I ask the Committee to consider a list of 2,932 pending military nominations. Of these nominations, one nominations is one day short of the Committee's requirement that nominations be in committee for 7 days before we report them out. No objection has been raised to this nomination, and I recommend the Committee waive the 7-day rule in order to permit the confirmation of the nomination of this officer before the Senate recesses for the Fourth of July recess.

In addition, since a quorum is now present, I ask the Committee to consider five civilian nominations plus the list of 2,932 pending military nominations. First I ask the Committee to consider the nominations of Honorable Caroline D. Krass, to be General Counsel of the Department of Defense; Ms. Gina Ortiz Jones, to be Under Secretary of the Air Force; Dr. Ely S. Ratner, to be Assistant Secretary of Defense for Indo-Pacific Security Affairs, Ms. Shawn G. Skelly, to be Assistant Secretary of Defense for Readiness; and Ms. Meredith A. Berger, to be Assistant Secretary of the Navy for Energy, Installations, and Environment.

Is there a motion to report the military nominations and the five civilian nominations?

Senator INHOFE. So moved.

Chairman REED. Is there a second?

Senator SHAHEEN. Second.

Chairman REED. All in favor, please say aye.

[Chorus of ayes.]

[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 JUNE 22, 2021.

1. In the Army there are 22 appointments to the grade of colonel (list begins with Ramie K. Barfuss) (Reference No. 293)
2. In the Army there are 63 appointments to the grade of colonel (list begins with Eric P. Ahnfeldt) (Reference No. 294)
3. In the Marine Corps there is 1 appointment to the grade of lieutenant colonel (Anthony N. Sama) (Reference No. 320)
4. **In the Navy Reserve there are 3 appointments to the grade of rear admiral (list begins with Robert T. Clark)** (Reference No. 343)
5. **RADM(lh) Eileen H. Laubacher, USNR to be rear admiral** (Reference No. 344)
6. **Capt. David R. Storr, USN to be rear admiral (lower half)** (Reference No. 462)
7. **Capt. Michael J. Schwerin, USN to be rear admiral (lower half)** (Reference No. 463)
8. **In the Navy there are 4 appointments to the grade of rear admiral (lower half) (list begins with Bradly D. Dunham)** (Reference No. 464)
9. **Capt. Dennis E. Collins, USN to be rear admiral (lower half)** (Reference No. 465)
10. In the Navy there are 7 appointments to the grade of captain (list begins with Patricia H. Ajoy) (Reference No. 516)
11. In the Navy there are 4 appointments to the grade of captain (list begins with Robin C. Cherrett) (Reference No. 517)
12. In the Navy there are 7 appointments to the grade of captain (list begins with Joseph B. Harrison II) (Reference No. 518)
13. In the Navy there are 8 appointments to the grade of captain (list begins with Taylor R. Forester) (Reference No. 519)
14. In the Navy there are 10 appointments to the grade of captain (list begins with David B. Damato) (Reference No. 520)
15. In the Navy there are 2 appointments to the grade of captain (list begins with Roy L. Henkle) (Reference No. 521)
16. In the Navy there are 2 appointments to the grade of captain (list begins with Steven J. Dwyer) (Reference No. 522)
17. In the Navy there are 195 appointments to the grade of captain (list begins with Thomas P. Abbott) (Reference No. 523)
18. In the Navy there are 9 appointments to the grade of captain (list begins with Daniele Braham) (Reference No. 524)
19. In the Navy there are 4 appointments to the grade of captain (list begins with Shawn G. Gallaher) (Reference No. 525)
20. In the Navy there are 19 appointments to the grade of captain (list begins with Michael P. Aiena) (Reference No. 526)
21. In the Navy there are 10 appointments to the grade of captain (list begins with Josh A. Cassada) (Reference No. 527)
22. In the Navy there are 5 appointments to the grade of captain (list begins with Kevin D. Bittle) (Reference No. 528)
23. In the Navy there are 3 appointments to the grade of captain (list begins with Jodie K. Cornell) (Reference No. 529)
24. In the Navy there are 2 appointments to the grade of captain (list begins with Jeffrey N. Dugard) (Reference No. 530)
25. In the Navy there are 2 appointments to the grade of captain (list begins with Kenneth O. Allison, Jr.) (Reference No. 531)
26. In the Air Force there is 1 appointment to the grade of lieutenant colonel (Whit A. Collins) (Reference No. 583)
27. In the Air Force there is 1 appointment to the grade of major (Timothy E. Holland) (Reference No. 584)
28. In the Air Force there is 1 appointment to the grade of lieutenant colonel (Karl J. Vogel) (Reference No. 585)
29. In the Air Force there is 1 appointment to the grade of lieutenant colonel (Nicholas R. Reynolds) (Reference No. 586)

30. In the Army Reserve there is 1 appointment to the grade of colonel (Christopher A. Blanco) (Reference No. 587)
31. In the Army there is 1 appointment to the grade of major (Curt C. Lane) (Reference No. 588)
32. In the Army there are 15 appointments to the grade of colonel (list begins with David P. Curlin) (Reference No. 589)
33. In the Army Reserve there is 1 appointment to the grade of colonel (Michael R. Bean) (Reference No. 590)
34. In the Army Reserve there is 1 appointment to the grade of colonel (Daniel J. Meyers) (Reference No. 591)
35. In the Army Reserve there is 1 appointment to the grade of colonel (James M. McKnight III) (Reference No. 592)
36. In the Army Reserve there is 1 appointment to the grade of colonel (Craig P. Lanigan) (Reference No. 593)
37. In the Army Reserve there is 1 appointment to the grade of colonel (Lisa M. Kopczynski) (Reference No. 594)
38. In the Army Reserve there are 6 appointments to the grade of colonel (list begins with Toby J. Alkire) (Reference No. 595)
39. In the Army Reserve there are 55 appointments to the grade of colonel (list begins with Jeremy C. Abrams) (Reference No. 596)
40. In the Army Reserve there are 211 appointments to the grade of colonel (list begins with Donna M. Alexander) (Reference No. 597)
41. In the Army there is 1 appointment to the grade of colonel (Anthony C. Bonfiglio) (Reference No. 598)
42. In the Army Reserve there are 185 appointments to the grade of colonel (list begins with David A. Acosta) (Reference No. 599)
43. In the Marine Corps there is 1 appointment to the grade of lieutenant colonel (Joseph L. Gill II) (Reference No. 600)
44. In the Navy there is 1 appointment to the grade of lieutenant commander (Anne C. Mooser) (Reference No. 601)
45. In the Space Force there are 765 appointments to the grade of colonel and below (list begins with Heather J. Anderson) (Reference No. 602)
46. **In the Army there are 3 appointments to the grade of brigadier general (list begins with Alison C. Martin)** (Reference No. 611)
47. **In the Army there are 3 appointments to the grade of brigadier general (list begins with Eugene D. Cox)** (Reference No. 612)
48. **MG Jonathan P. Braga, USA to be lieutenant general and Commanding General, US Army Special Operations Command** (Reference No. 623)
49. **MG Antonio A. Aguto, Jr., USA to be lieutenant general and Commanding General, First United States Army** (Reference No. 624)
50. **MG Stuart W. Risch, USA to be lieutenant general and Judge Advocate General, US Army** (Reference No. 626)
51. **MG David J. Furness, USMC to be lieutenant general and Deputy Commandant for Plans, Policies, and Operations, Headquarters, US Marine Corps** (Reference No. 627)
52. **MG Matthew G. Glavy, USMC to be lieutenant general and Deputy Commandant for Information, Headquarters, US Marine Corps** (Reference No. 628)
53. **MG Paul A. Chamberlain, USA to be lieutenant general and Military Deputy for Budget, Office of the Assistant Secretary of the Army (Financial Management and Comptroller)** (Reference No. 646)
54. **COL Haldane B. Lamberton, ARNG to be brigadier general** (Reference No. 648)
55. **COL Joseph A. Dinonno, ARNG to be brigadier general** (Reference No. 649)
56. **In the Army Reserve there are 23 appointments to the grade of major general (list begins with Michael N. Adame)** (Reference No. 650)
57. **In the Army Reserve there are 2 appointments to the grade of major general (list begins with Robert A. Boyette)** (Reference No. 651)
58. **BG Michael J. Garshak, ARNG to be major general** (Reference No. 652)

59. **BG Damian K. Waddell, ARNG to be major general** (Reference No. 653)
60. **COL Mark G. Alessia, to be brigadier general** (Reference No. 654)
61. **COL Rose P. Keravuori, USAR to be brigadier general** (Reference No. 655)
62. **BG Mark T. Simerly, USA to be major general** (Reference No. 656)
63. **In the Army Reserve there are 6 appointments to the grade of brigadier general (list begins with Christopher A. Holland)** (Reference No. 657)
64. **In the Army Reserve there are 86 appointments to the grade of brigadier general (list begins with Derek L. Adams)** (Reference No. 658)
65. **Vice Admiral William R. Merz, USN to be vice admiral and Deputy Chief of Naval Operations for Operations, Plans and Strategy, N3/N5, Office of the Chief of Naval Operations** (Reference No. 660)
66. **Rear Admiral Francis D. Morley, USN to be vice admiral and Deputy Principal Military Deputy Assistant Secretary of the Navy (Research, Development and Acquisition)** (Reference No. 662)
67. In the Air Force there is 1 appointment to the grade of colonel (Jeannette M. Watterson) (Reference No. 663)
68. In the Air Force Reserve there is 1 appointment to the grade of colonel (Jason O. Allen) (Reference No. 664)
69. In the Air Force Reserve there are 113 appointments to the grade of colonel (list begins with Connie Irene Armstrong) (Reference No. 665)
70. In the Army Reserve there is 1 appointment to the grade of colonel (David R. Evans) (Reference No. 666)
71. In the Army Reserve there is 1 appointment to the grade of colonel (Nicollette D. Dennis) (Reference No. 667)
72. In the Army there is 1 appointment to the grade of lieutenant colonel (Waldo D. Galan) (Reference No. 668)
73. In the Army Reserve there is 1 appointment to the grade of colonel (Roger W. Dodson) (Reference No. 669)
74. In the Army there are 2 appointments to the grade of lieutenant colonel (list begins with Chase D. Crabtree) (Reference No. 670)
75. In the Army Reserve there is 1 appointment to the grade of colonel (Donald A. Vacha) (Reference No. 671)
76. In the Army Reserve there is 1 appointment to the grade of colonel (Michael E. Lane) (Reference No. 672)
77. In the Army Reserve there is 1 appointment to the grade of colonel (Timothy J. Redhair) (Reference No. 673)
78. In the Army there are 2 appointments to the grade of lieutenant colonel (list begins with Bryce E. Livingston) (Reference No. 674)
79. In the Army there are 22 appointments to the grade of colonel (list begins with Maria I. Bruton) (Reference No. 675)
80. In the Army there are 33 appointments to the grade of colonel (list begins with Ryan S. Bible) (Reference No. 676)
81. In the Army there are 6 appointments to the grade of colonel (list begins with Avery J. Carney) (Reference No. 677)
82. In the Army there are 3 appointments to the grade of colonel (list begins with Robin L. Burke) (Reference No. 678)
83. In the Army there is 1 appointment to the grade of major (Brenton A. Arihood) (Reference No. 679)
84. In the Army Reserve there is 1 appointment to the grade of colonel (Tracy R. Norman) (Reference No. 680)
85. In the Marine Corps there is 1 appointment to the grade of lieutenant colonel (Jaclyn N. Urso) (Reference No. 681)
86. In the Marine Corps there is 1 appointment to the grade of colonel (Paul J. Goguen) (Reference No. 682)
87. In the Marine Corps there is 1 appointment to the grade of major (Benjamin E. Barr) (Reference No. 683)
88. In the Navy there are 12 appointments to the grade of commander (list begins with Kelly L. Bryne) (Reference No. 684)

89. In the Navy there are 25 appointments to the grade of commander (list begins with John A. Allen) (Reference No. 685)
90. In the Navy there are 29 appointments to the grade of commander (list begins with Jordan M. Adler) (Reference No. 686)
91. In the Navy there are 29 appointments to the grade of commander (list begins with Kyle C. Backman) (Reference No. 687)
92. In the Navy there is 1 appointment to the grade of commander (Ashley S. M. McAbee) (Reference No. 688)
93. In the Navy there are 14 appointments to the grade of commander (list begins with Antonio Barcelos, Jr.) (Reference No. 689)
94. In the Navy there are 9 appointments to the grade of commander (list begins with Christopher M. Anctil) (Reference No. 690)
95. In the Navy there are 19 appointments to the grade of commander (list begins with Jemar R. Ballesteros) (Reference No. 691)
96. In the Navy there are 514 appointments to the grade of commander (list begins with Marco A. Acosta) (Reference No. 692)
97. In the Navy there are 36 appointments to the grade of commander (list begins with Sung H. Ahn) (Reference No. 693)
98. In the Navy there are 14 appointments to the grade of commander (list begins with Drew R. Barker) (Reference No. 694)
99. In the Navy there are 11 appointments to the grade of commander (list begins with Miguel A. Bernal, Jr.) (Reference No. 695)
100. In the Navy there are 7 appointments to the grade of commander (list begins with Richard S. Chernitzer) (Reference No. 696)
101. In the Navy there are 16 appointments to the grade of commander (list begins with Jason K. Bruce) (Reference No. 697)
102. In the Navy there are 16 appointments to the grade of captain (list begins with Sylvester C. Adamah) (Reference No. 698)
103. In the Navy Reserve there is 1 appointment to the grade of captain (Patrick L. German) (Reference No. 699)
104. In the Navy there is 1 appointment to the grade of lieutenant commander (Andrew S. Foor) (Reference No. 700)
105. In the Navy there is 1 appointment to the grade of commander (Kevin M. Bacon) (Reference No. 701)
106. In the Navy there are 10 appointments to the grade of commander (list begins with Abdeslam Bousalham) (Reference No. 702)
107. In the Navy there are 17 appointments to the grade of commander (list begins with Chabonnie R. Alexander) (Reference No. 703)
108. In the Navy there are 50 appointments to the grade of captain (list begins with Michael J. Arnold) (Reference No. 704)
109. In the Navy there are 20 appointments to the grade of captain (list begins with Casey J. Burns) (Reference No. 705)
110. In the Navy there are 19 appointments to the grade of captain (list begins with Timothy D. Barnes) (Reference No. 706)
111. In the Navy there are 7 appointments to the grade of captain (list begins with Derek Butler) (Reference No. 707)
112. In the Navy there are 21 appointments to the grade of captain (list begins with Accursia A. Baldassano) (Reference No. 708)
113. In the Navy there are 27 appointments to the grade of captain (list begins with Anthony P. Bannister) (Reference No. 709)
114. In the Navy there are 12 appointments to the grade of captain (list begins with Jennifer D. Bowden) (Reference No. 710)
115. In the Space Force there are 20 appointments to the grade of colonel and below (list begins with Edward G. Ferguson) (Reference No. 711)
116. In the Space Force there are 3 appointments to the grade of colonel and below (list begins with James J. Watson) (Reference No. 712)
117. **LTG Edwin J. Deedrick, Jr., USA to be lieutenant general and United States Military Representative to the North Atlantic Treaty Organization Military Committee** (Reference No.721)

TOTAL: 2,932

Chairman REED. The ayes have it. Thank you very much.

Senator Inhofe, you are recognized.

Senator INHOFE. Thank you, Mr. Chairman. First of all, before asking a question I am going to ask Admiral Gilday to share with the Committee what happened last Friday and the significance of that.

Admiral GILDAY. Last Friday we conducted our first shock trial on the USS *Gerald R. Ford.* The 2016 NDAA requires that those shock tests be conducted—it is a series of three tests over the next couple of months—before we operationally deploy that vessel. Our intent, Senator, is to deploy that vessel in 2022, and right now we remain on track to do so.

Senator INHOFE. Are the catapults—how many elevators are working?

Admiral GILDAY. Sir, right now we have accepted 7 of 11 elevators. I expect that we will accept two by early fall and the remaining two by the end of the year. After the shock trials the ship will go into a maintenance availability, we will finish up those last two elevators, and then we will get her out to deploy in 2022.

Senator INHOFE. Yes. We have heard a lot of things. As I recall, the deployment date would have been 2017, initially, and a lot of people have reasons to believe that there is justification for a lot of the stalls. I don't agree with that, but I certainly agree with you, that you believe that is going to happen. I hope you are right, and we have had a lot of problems with that particular piece of equipment and it has been very, very expensive.

So, anyway, Admiral Gilday, as I said in my opening statement we have a 355-or-more ship goal. Yet this budget is only enough for a status quo 300-ship Navy. I hope we can get the money needed to build the Navy. I know none of the three of you agree—you won't say it but I will say it—you are not getting an adequate budget. I can say it and you can't. But anyway, we are going to do everything that we can to try to make this happen. Cutting a new destroyer, retiring ten ships early, fewer F–35C's, these do not seem to be strategic choices but rather last-minute, haphazard cuts.

So anyway, that is what we are faced with right now. We have often said the world is the most dangerous right now of any period in my lifetime, and since release of 2018 National Defense Strategy, the threats have only gotten worse. In fact, the NDS Commission said that we need 3 to 5 percent real growth—this is overall, not just the Navy—this particular year, and obviously that is not going to happen. It is going to be something less than a break even, of 1.6 percent, I believe.

So Admiral Gilday and General Berger, if I were to ask you who in the Department of Defense is best positioned to set forth structure requirements for the Navy and the Marine Corps, I think it is the CNO and the Commandant, and I think you would agree with me. The difference is I can say it and you can't. But nonetheless, we do have serious problems that we are facing right now. Your list of unfunded requirements amounts to $9.3 billion. This amount shows the difference of between 3 to 5 percent increase instead of 1.6 percent decrease makes in developing a defense budget. Some call this, the things that we are asking for right now, a

wish list. I do not call them a wish list. I call them a risk list. We have to remind ourselves—and you folks, the three of you, know this better than anyone—that it is the risk that takes lives, and we are, I believe, in an unacceptable are.

So we are going to do the best that we can to increase and to develop a budget that we can be proud of, and you will be an important part of that.

Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Inhofe. Senator Shaheen, please.

Senator SHAHEEN. Thank you, and thank you to each of you for your testimony this morning and for your service to the country.

Admiral Gilday, I would like to begin with you, and I appreciated our call last week. You said in your opening statement that we are making a once-in-a-century investment in our public shipyards, and there is no doubt that the investments through the Shipyard Infrastructure Optimization Plan (SIOP) are really important.

At the Portsmouth Naval Shipyard, where we are the first to get those investments, we have seen significant cost overrun in the multi-mission dry dock project, which has to be done if we are going to ensure that our submarines are able to be maintained and ready when they are needed. So when we talked, you discussed two major causes for that overrun, as I recall. One was the increased cost of supplies, because of the pandemic, but the other one was sort of inaccurate estimates by those who were making projections for what the costs of the project would be.

So can you talk about whether that is accurate. Are those the two major costs? What else might be contributing to those overruns, what we are going to do about it, and where are we going to get the money to make sure that that project stays on time?

Admiral GILDAY. Yes, ma'am, I do think that is accurate. In terms of raw material we saw significant growth in cost for lumber, for cement, and for steel, and that has been pretty steady through the pandemic, although it is beginning to level off now. I think construction companies have had the same challenges.

The initial estimate was done 2 years ago, and so that was a factor. The second, I think more importantly, was the complexity of that work. What we have learned from that—and I had a discussion with Senator Hirono recently, as we look to a multi-mission dry dock in Hawaii—is that we are now bringing in industry before we make the estimates, so that we have better-informed idea of the complexity of the job.

As an example, at Portsmouth it makes more sense for the contractor to do the foundational work, the fabrication, and then to ship it down to the site, rather than to do it in the shipyard.

It is my number one unfunded priority on the list. It came in about the same—that estimate, or the estimate in the bidding process, and we are still in that sensitive bidding acquisition time frame right now. I put it on my unfunded list because it is vitally important that we keep the progress of that project on pace for the first *Virginia*-class availability in 2026.

So, ma'am, I ask the Committee's support on that unfunded item, but nevertheless, I am committed to keeping that project on track, for the very reason I just mentioned.

Senator SHAHEEN. Well, thank you. If it is not on track we are not going to have the dry dock capacity that we need. Is that correct?

Admiral GILDAY. Yes, ma'am, that is a correct statement.

Senator SHAHEEN. Thank you. There is an article—and I don't know, maybe this is for you, Secretary Harker—there is an article in Bloomberg this morning. The headline is the "U.S. Navy's deadliest new sub are hobbled by spare parts woes," and it goes on to talk about how the Navy has swapped more than 1,600 parts among its new *Virginia*-class submarines since 2013, to ease maintenance bottlenecks.

Can you talk to why that is occurring? I would just put it in the context of, in fiscal year 2020 NDAA this Committee put in language raising concern about the supply chain and the potential for this kind of shortfalls, and we encouraged—and I am quoting from the language—"we encouraged the Navy to better communicate the capability of their submarine forecasting model. The Committee also encourages the Navy to communicate needs in a timely fashion, and encourages the Secretary of Defense to support shipbuilding industrial base initiatives to maintain readiness and a strong submarine industrial base."

It appears that that encouragement has not made much difference. We still have this problem. So can you talk to what the Navy is doing about it?

Mr. HARKER. Yes, ma'am. The Navy is aware that there are some challenges with some of the *Virginia*-class supply chain. There are parts on the *Virginia*-class that we thought were going to be a life-of-the-submarine parts, and they are failing more quickly than we had originally envisioned, and so we have to go back in and find alternate sources for those parts, and they are not something that——

Senator SHAHEEN. I am sorry to interrupt, but can you talk about why that is happening? Why are they failing faster than we anticipated? Were our estimates bad? Are there problems with how they are being fabricated? What is going on?

Mr. HARKER. I will have to get back with you on that, ma'am.

Senator SHAHEEN. I would ask, Mr. Chairman, that they report back to the Committee on exactly what is causing that shortfall. That would be very helpful, I think.

Chairman REED. I would ask that the Secretary and the CNO report back promptly.

Mr. HARKER. Yes, sir.

Chairman REED. Thank you very much. Senator Wicker, please.

Senator WICKER. Thank you, Mr. Chairman. Mr. Chairman, before I begin my questions I would like to put two letters in the record, a letter from me, dated June 16, 2021, to General Berger, and his response to me, dated June 21, 2021. I would like that they be entered into the record.

Chairman REED. Without objection.

[The letters follow:]

ROGER F. WICKER
MISSISSIPPI

ARMED SERVICES
COMMERCE, SCIENCE, AND TRANSPORTATION
ENVIRONMENT AND PUBLIC WORKS
RULES AND ADMINISTRATION
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June 16, 2021

General David H. Berger
Commandant
United States Marine Corps
3000 Marine Corps Pentagon
Washington, DC 20350-3000

Dear General Berger:

The primary function of U.S. Navy amphibious ships is to transport embarked U.S. Marines and their equipment and supplies to distant operating areas, and enable Marines to conduct expeditionary operations ashore in those areas. Although amphibious ships are designed to support Marine landings against opposing military forces, they are also used for operations in permissive or benign situations. Because of their large storage spaces and their ability to use aircraft and landing craft to transfer people, equipment, and supplies from ship to shore without need for port facilities, amphibious ships are useful for a range of combat and noncombat operations. On any given day, Navy amphibious ships are forward-deployed to various overseas operating areas supporting combatant commander operational missions.

Since 2006, the Department of the Navy has had a requirement for at least 31 amphibious ships. The most recent Navy force structure assessment, completed in 2016, identified a need for 38 amphibious ships, including 12 LHA/LHDs and 26 LSD/LPDs. The Department of Defense's 2020 Future Naval Force Study identified a need for between 61 and 67 amphibious ships.

Ahead of your testimony before the Senate Armed Services Committee next week, I request your written response on the following:

1. What are your current and projected unconstrained numerical requirements for amphibious ships, including the specific mix of LHA/LHDs and LSD/LPDs?

2. Do you support the multiple-ship procurement authority, provided in section 124 of the National Defense Authorization Act for Fiscal Year 2021, to help meet your requirement for amphibious ships?

I look forward to your testimony on Tuesday and working with you to strengthen the Marine Corps.

Sincerely,

Roger F. Wicker
United States Senator

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
3000 MARINE CORPS PENTAGON
WASHINGTON, DC 20350-3000

21 Jun 21

The Honorable Roger Wicker
Committee on Armed Services
United States Senate
Washington, DC 20510

Dear Senator Wicker,

Amphibious warships remain critical to our Navy, their Fleet Marine Forces, and our larger national defense, and we appreciate your many years of support and advocacy for these vital platforms. Provided below are responses to the questions included in your letter of June 16th, 2021. I look forward to seeing you in testimony on Tuesday.

Q1. What are your current and projected unconstrained numerical requirements for amphibious ships, including the specific mix of LHA LHD and LSD LPDs?

A1. To meet our current and anticipated global requirements, the Marine Corps needs no fewer than 31 traditional amphibious ships: 10 LHD LHAs and 21 LPDs. The unique and potent capabilities provided by these vessels, particularly when operating as part of the ARG-MEU, are essential to deterrence, strategic competition, and crisis response. An amphibious fleet with fewer than 31 traditional amphibious ships creates unnecessary risk for Combatant Commanders. The recent loss of the USS Bonhomme Richard was a tremendous setback for the Fleet, with significant impacts for the Navy-Marine Corps Team and its ability to meet Combatant Commander requirements.

Further, as the Marine Corps advances its capabilities for naval expeditionary warfare in accordance with Force Design 2030, we will require an additional 35 Light Amphibious Warships (LAW). This new class of warship is beachable and capable of delivering small and mobile units across the littoral environment in support of Distributed Maritime Operations (DMO) and Expeditionary Advanced Base Operations (EABO). The success of these two interrelated naval concepts depends on the mobility provided by the LAW.

Q2. Do you support the multiple ship procurement authority, provided in section 124 of the National Defense Authorization Act for Fiscal Year 2021, to help meet your requirement for amphibious ships?

A2. Yes. The multiple ship procurement authority enables the Department to build toward the desired Fleet architecture, strengthens the defense industrial base, and saves significant resources (in excess of an estimated $700 million) that could be applied toward additional Fleet or Fleet Marine Force capabilities.

Sincerely,

David H. Berger
General, U.S. Marine Corps
Commandant of the Marine Corps

Senator WICKER. General Berger, thank you for your service. You have been in the military now for over 40 years. Is that correct?

General BERGER. That is correct, sir.

Senator WICKER. Well, I appreciate your service and I appreciate you giving us straight advice.

Now during House Seapower Subcommittee hearing last week, Lieutenant General Eric Smith testified that a joint Navy and Marine Corps study determined that the requirement for traditional amphibious ships is 31, including 10 big-decks and 21 LSD/LPDs. Is that your assessment also?

General BERGER. It is, sir.

Senator WICKER. As a matter of fact, you stated that in the letter that you sent to me only yesterday. Is that correct?

General BERGER. That is correct, sir.

Senator WICKER. I am disappointed, shocked, in fact, that the so-called 30-year Shipbuilding Plan released last Friday calls for a range of 16 to 19 LPDs. It seems to me that the Office of Secretary of Defense has some bureaucrats in there that are taking over the Pentagon requirements and putting armchair opinions on warfighting above those of the men and women, like you, with decades of experience in uniform.

Now let's do the math. Based on the current amphibious ships under construction, and the most recent decommissioning planning guide as provided by the Navy, by the end of fiscal year 2023, the Navy will have a total of 21 LSD/LPDs instead of the 21 LSD/LPDs that you say we need.

Move ahead then to 2025. Based on this same guidance, the Navy will have only 17 LSD/LPDs. This falls short, of course, of the 21 that you and General Smith have said we need.

Then based on the current ships under contract, once all of the legacy LSDs have been decommissioned, the Navy will have only 15 LPDs. Of course, this falls short of the 21 that we are being told by the greatest experts that we rely on is a requirement.

Now this Committee, last year, and the Congress of the United States, passed, and it was signed into law by the President of the United States, the NDAA, and section 124 provided the Navy with a mechanism to procure two more LPDs to fill this gap. If OSD [Office of the Secretary of Defense] executes this authority it would save the taxpayers over $700 million.

General Berger, you have a need for more LPDs. Does the amphibious ship authority provided you in section 124 help you meet your warfighting requirement?

General BERGER. It would do both parts which you mentioned, Senator. It would meet a warfighting requirement and it would save an estimate of $722 million. Correct.

Senator WICKER. You know, I appreciate you being honest and speaking truth to this Committee and to the Congress, and I would just say, in response—I do not have time to engage Acting Secretary Harker in this—but basically the regretful answer that was given today of, "it sure was hard not to make that decision to do this multiple ship procurement but we just could not afford it," the fact is we could not afford it because somebody in the Office of Management and Budget sent word to the Pentagon that they were not going to give you enough money. I totally agree with Senator Inhofe that we need to reverse this.

I would point out to my colleagues what the Chief of Naval Operations has told us today. Numbers are an important metric, and clearly in response to what the Chairman asked, they are not the only metric, but they are an important metric. We also were told, by our leading sailor in the country, if we are going to meet the challenge, we are going to need a bigger Navy.

I just say to the people here on the dais, and our witnesses today, who are doing the best they can, we have an obligation, under the constitution, to defend the United States of America and to provide the numbers and financing to do that. I totally agree with those on both sides of the dais that this is a crying need that we have to meet.

I yield back, Mr. Chair.

Chairman REED. Thank you very much, Senator Wicker. Senator Gillibrand, please.

Senator GILLIBRAND. Thank you, Mr. Chairman. Thank you all for being here and for your sacrifice and service.

As you know, I have been working on this issue of trying to reduce sexual assault in the military and to try to create a military justice system that is worthy of the sacrifice our men and women make. Through the work with a number of people on this Committee we have put together legislation that now has 66 co-sponsors, and that legislation essentially says that for all serious crimes, except for uniquely military crimes, that the decision about whether to prosecute will be taken out of the chain of command and given to trained military prosecutors.

We believe that that one change will professionalize military justice. We also think that one change will change the view of both survivors and defendants, that the system is less biased, because it will be a review by the most highly trained individuals, who do not necessarily know the plaintiff or the defendant. We think it cures two defects in the military justice system today. The first is how it handles sexual assault cases—very few are going to trial and even less are ending in conviction; it was about 20,000 cases estimated by the DOD [Department of Defense] in the last couple of years, and in the last 3 years approximately 200 have ended in conviction. So each year—we are just not getting better.

We also have data, over the last 4 years, developed by the DOD, that shows there is racial bias, that, in fact, if you are a black servicemember you are more likely to be punished. In the Navy, for example, the average of the last several years, the last 15 years, is you are 1.4 times more likely to be punished in the Navy, and in the Marines you are up to 2.61 times more likely to have a general court martial. So this is data that the DOD has collected.

So we believe this one change could change how the justice system is perceived. Many survivors of sexual assault do not believe that justice is possible in the current system, and among black servicemembers I think 60 percent do not believe that they will have a fighting chance, or the same chance as a white servicemember to get justice.

So I would like to know, for each of you, what is your perspective on this issue. Do you remain open-minded on what solutions would be the best to handle this? As you know, this Committee has studied this issue for a decade. We have passed nearly 250 reforms to improve the military justice system, as a Committee, all of which have been supported by the Department of Defense. Unfortunately, none of them have moved the ball and none of them have instilled confidence in the system.

So I would like to know if you have an open mind in reviewing this data and information as we begin to try to end the scourge of sexual assault and try to remove bias within the military justice system, and each of you can answer.

Mr. HARKER. So, ma'am, I will start. For me, I definitely have an open mind. We have invested a significant amount of money in this current year budget to increase the size of both the prevention and the response side for this important issue, and it something that we believe is important for us to change.

Admiral GILDAY. Ma'am, I am definite open to an evidence-based approach to the best way to get after this. I have seen much of the data, not all of it, with respect to the racial inequities that you pointed out.

I think the key problem to solve with respect to sexual assault is one of trust, and I think that if servicemembers do not trust the system that we have in place then I think that it is a readiness problem for us, because we have victims that are not going to report, they are not going to receive treatment, and then we have perpetrators that essentially are not going to receive due process. So I am, ma'am, open to new ways of looking at getting after it.

Senator GILLIBRAND. Thank you. Admiral?

General BERGER. I would also remain open-minded, as you point out. I think we have the same goals that you highlight. We have to reduce the number of sexual assaults. We have to restore the trust between victims and their chain of command.

Senator GILLIBRAND. Thank you.

General BERGER. Third, we have to retain the authority of commanders to do what they need to do in combat. So I think the objectives are the same.

Senator GILLIBRAND. I agree.

Secretary Harker, the Navy has created a military justice track. My understanding is that it has been in practice for the last 10 to 15 years. My understanding is that there are currently 95 military justice litigation career track practitioners, 80 percent of whom are in designated litigation billets at any given time, and half of those are prosecutors.

Have you had a problem of being able to fill those roles, and in your opinion, has this program created a more professional military justice system? Would you recommend it to other branches?

Mr. HARKER. Ma'am, based on my limited experience I do not think we have had any problem in filing those roles, and it has been effective. I think it is something that would be useful for others to consider, and it is part of what is being considered, as the Secretary looks at all the various options during his independent review.

Senator GILLIBRAND. Thank you, Mr. Chairman. Thank you all.

Chairman REED. Thank you, Senator Gillibrand. Let me now recognize Senator Cotton.

Senator COTTON. Thank you. Admiral Gilday, I want to talk about your choice to include books like "How to be an Anti-Racist" and "The New Jim Crow" in your professional reading list. We discussed this last week in our phone call. Normally I would not disclose that conversation, but you said the exact same thing in front of the Armed Services Committee in the House last week, which I found deeply disappointing. When you are asked questions about this, you characterized it as a criticism of sailors for being weak. That is a straw man. It is not a criticism of sailors being weak. It is a criticism of your decision to include these books on your professional reading list, which ensigns and sailors across your service take very seriously.

So I just want to give you a sampling of some of the things that are included in books like that, the notion that capitalism is essentially racist, and racism is essentially capitalist. That the only rem-

edy for past discrimination is present discrimination. The only remedy for present discrimination is future discrimination. That some individuals, by virtue of his or her race, are inherently oppressive, or privileged, while others are victimized or oppressed. That individuals can bear some kind of collective responsibility or collective guilt for the actions committed by members of his or her race.

Admiral Gilday, how did these books get on your reading list?

Admiral GILDAY. Sir, I chose a variety of books. There are over 50 books in my reading list, to give our sailors a wide range of information from which I hope they can make facts-based decisions on both their ability to look outwardly at potential aggressors like China and Russia, as well as looking inwardly and being honest with ourselves in area that we need to improve.

In talking to sailors over the past year, it is clearly obvious, to me and others, that the murder of George Floyd and the events surrounding that, the discussions in this country about racism, which go back for years and years and years, are still a painful part of our culture, and that talking about them, understanding them, is the best approach, and that offering books like Kendi's for people to read—and they do not have to agree with every assertion that Kendi makes.

I do not accept every assertion that Kendi makes, and I would not think that all sailors would as well. But they need to be exposed to it, so that they are making facts-based—we need critical thinkers in the Navy and throughout the military, in our enlisted force, again, who not only think outwardly but inwardly, so that they make objective, hopefully objective facts-based decisions, or draw conclusions in a world that it is increasingly more difficult to get an unbiased view at a really tough problem. Even if they are looking at things on social media, artificial intelligence associated with those platforms feeds them more of whatever they tend to look at. I am offering them one book among 53 as a different perspective.

Senator COTTON. Yes, I agree there is a lot of information like that on social media and in our culture, and you are saying, as the senior leader of the Navy, that you want 18-year-old sailors and 22-year-old ensigns to read a book that asserts that capitalism is essentially racist. Do you agree that capitalism is essentially racist?

Admiral GILDAY. Sir, with all due respect, I am not going to engage without understanding the context of statements like that. But these are the same sailors——

Senator COTTON. Admiral, I am sorry, our time is very limited here. I know you said this in the House Armed Service Committee last week. In what context could the claim that capitalism is essentially racist possibly be something with which you would agree?

Admiral GILDAY. Sir, I would have to go back to the book to take a look at that, but again, this comes down to trusting sailors who are running nuclear power plants on submarines at hundreds of feet under the water, under the polar ice cap, that are maintaining the highest, the most complicated and complex jets in the world. We put them in harm's way every day. Sir, I believe that we can trust them to read books like that and to draw reasonable conclusions.

Senator COTTON. Well, it not just a matter of trusting. It is a matter of how they spend their time, and you, as the Chief of Naval Operations, are suggesting, in your professional reading list, that it is a worthwhile endeavor for our sailors and ensigns to spend their time reading books like these, as opposed to, say, books on maritime strategy or basic seafaring skills, which also are included on your list. But there are plenty that are not included on your list that I think could also benefit them. I mean, the Navy has had genuine cultural problems now for many years, whether it is the *McCain* and the *Fitzgerald* having collisions in the Western Pacific, the *Bonhomme Richard* catching fire in port, the Fat Leonard scandal, a Navy SEAL team being recalled from Iraq because of a breakdown in basic military order, a patrol boat in the Persian Gulf surrendering to what is a little more than Iranian fishing boat. The Navy has had some genuine cultural problems and drift and lack of focus that it needs to address. Assigning books like these and encouraging your sailors to take the time to do so is not a way for the Navy to regain its focus, Admiral.

Chairman REED. Thank you, Senator Cotton. Senator Blumenthal, please.

Senator BLUMENTHAL. Thanks, Mr. Chairman. Thank you all for your service and for being here today. I want to begin, Admiral Gilday, I know from your visit to Connecticut, Electric Boat Dynamics, the boat yard there, that you are a strong believer in our submarine program. I was pleased to see that the Navy has requested two *Virginia*-class submarines in the fiscal year 2022 budget proposal and has exercised the option to build a tenth *Virginia*-class submarine, recognizing how important this amazing technology is to our national defense. I am hopeful that you continue to strongly support this program.

Admiral GILDAY. Yes, sir. Consistently the analysis that we have done, the wargaming, the exercises, the deep analysis that the Pentagon, and analysis inside and outside the Pentagon has placed a high value on attack submarines with respect to survivability and lethality as our Nation's best strike platform.

Senator BLUMENTHAL. Thank you. On June 15, just days ago, the Associated Press reported that the United States military has had losses of 1,900 lost or stolen weapons over the past decade. This staggering number is probably only a fraction of the total. It included assault rifles, fully automatic machine guns, armor-piercing grenade launchers. Some of these weapons have been found in connection with crimes committed with them. I hope you agree that this kind of lost or stolen weapon has to be stopped.

Can you tell me how many weapons, similar to the ones I have mentioned, have been lost or stolen from the Navy or Marine Corps armories in the last 10 years?

Admiral GILDAY. Sir, based on the initial results of the investigation that is ongoing it is about 240 weapons for the Navy. I am interested in learning deeper, as our investigation continues along with the other services to find out what laps in accounting led to those losses. Some of them might have been training losses, but specifically the root cause so that we can get after it and correct it.

Senator BLUMENTHAL. Do you have a number for the Marine Corps, General Berger?

General BERGER. Sir, I do not want to give you an inaccurate number, but I will get you that number. If 10 years is the horizon you are looking at, we will get you that accurate number.

[The information referred to follows:]

General BERGER. After an extensive review of 10 years of data (as of 3 Aug 2021), the Marine Corps has 31 weapons for which we cannot account. The numbers that had been reported by the media around the time of this hearing included combat losses and weapons destroyed or lost as the result of mishaps.

Senator BLUMENTHAL. Thank you. Can you tell me, perhaps both you, Admiral, and General, what is the system for the Navy and the Marine Corps tracking and accounting for conventional arms, ammunition, and explosives that may be lost or stolen?

Admiral GILDAY. Sir, I can say with a high degree of certainty it is done at the individual unit level. So in the case of the Navy specifically, at each ship. I cannot speak with a high degree of specificity of the tracking beyond. When a weapon is lost, there are reports that are made, there are investigations that are done, but how that is tracked in the aggregate I do not have a good answer for you at the moment, sir.

Mr. HARKER. So sir, if I could add in, this is something that is actually looked at during our financial statement audit every year. Our independent public accountants that work for the Department of Defense Office of the Inspector General (OIG) go out and do inventory testing on the accuracy of our inventory around our small arms or ammunition, that type of thing. So it is something that is tested annual. Both the Navy and the Marine Corps have done better than our peers in the Army and Air Force, and it is something that we do take very seriously.

Senator BLUMENTHAL. Thank you. I would like to follow up on that area, but in the remaining time that I have I wanted to ask about a study that was released yesterday. Brown University's Cost of War Project reported that the number of veterans and servicemembers who have died by suicide since September 11, 2001, is more than quadruple the number who died in the wars during this same period. The study estimates that 7,057 servicemembers have been killed in post-9/11 war operations while 30,177 Active Duty servicemembers and veterans have died by suicide. Quadruple. That is really an astonishing number.

It goes on to say the average suicide rate for post-9/11 veterans between 18 to 34 was 32.3 per 100,000, between 2005 and 2017, but it rose to 45.9 per 100,000 in 2018. That is about 2.5 times the rate in the general population.

There is no way that we can adequately address this topic this morning, but I would like an explanation from everyone on this panel as to what you think the causes are for this phenomenon, which is so deeply concerning, and what we can do about it. I know this topic has been a longstanding issue for all the services, and I think that it has to be raised to a much higher priority than it has been given so far.

Mr. HARKER. Yes, sir. This is something that we are investing significantly in, in this year's budget. We are putting $22 million towards mental health. Our fiscal year 2021 amount was $21 mil-

lion. We are more than doubling that going into this current budget cycle, because we believe that embedding mental health practitioners at the front, with sailors and marines, is probably the best way to get at this. We are also increasing the number of chaplains and the number of clergy members that are there to provide support as well.

So this is something that we take very seriously, and we have been working to both destigmatize getting treatment as well as providing additional services for our sailors and marines.

Senator BLUMENTHAL. Thank you. I would just suggest that more of the same is not going to work. It has to be a reinventing, a re-energizing, a re-imagining of how mental health is addressed in the military. But again, I am no expert, and I really welcome a thorough study and action. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Blumenthal. Senator Rounds, please.

Senator ROUNDS. Thank you, Mr. Chairman. Gentlemen, let me begin by just saying thank you for your service to our country, at a time like this, in which we are looking at a budget which, to me, appears to be a little bit on the disingenuous side. I would like to just point out one item with regard to previous contracts, and then Acting Secretary Harker, I would like to have your response.

The Navy's overall shipbuilding budget—and, by the way, I come from South Dakota where we do not build ships, but I care deeply about making sure that we have a consistency in our national defense—the Navy's overall shipbuilding budget decreased in this budget by $700 million, from $23.4 billion to $22.6 billion, but the budget includes purchase of one *Arleigh Burke*-class destroyer. Previously, it had been planned to purchase two. In fact, the Government has already agreed to purchase just the one. In this particular case it would breach a contract that the Government had previously agreed to with Ingalls Shipbuilding and General Dynamics Bath Ironworks back in 2018. At that time, the Government had agreed to buy one destroyer from each shipyard per year, including fiscal year 2022. Now a second *Arleigh Burke* destroyer at $1.6 billion is at the top now of the Navy's Unfunded Requirement List, recognizing that there was already a contract in place and that we are trying to rebuild a supply chain and trying to at least get some consistency so that these shipyards are maintained.

What is the logic in a budget which has an unfunded request attached to it when you already have a contract that says that you have agreed to purchase two instead of one?

Mr. HARKER. Sir, that was our biggest regret going through this budget process.

Senator ROUNDS. I am sorry. Could you say that again?

Mr. HARKER. That was our biggest regret going through this budget process was that we could not fit that destroyer into our budget. As we looked at the balance between readiness and the cost of operations, maintenance, and personnel going up, and the challenge with new capacity, and then also maintaining the current capacity, we just could not afford to put that destroyer into the budget.

Senator ROUNDS. Admiral Gilday, naval fighter aircraft are among our most important front-line weapons systems in confronting China, and this budget proposal cuts their procurement by 15.6 percent. Now as the Navy cuts its number of operational F/A–18's from 150 to a proposed 50—and I recognize that the year in which we achieved 50 has not yet been released—how do we fill the gap which is created in readiness, especially considering that the Navy has only requested, this year, 20 F–35C's instead of what had been anticipated, at least as last year, 26. So we are going down in the number of fifth-gen aircraft that we are purchasing. At the same time, we are anticipating that our fourth-gen aircraft, Hornets, we are talking about decreasing them from 150 to 50 operational units. How does that jive?

Admiral GILDAY. Sir, the Navy's goal is to have a mix of fourth- and fifth-gen, and we will be at five squadrons that have that mix by 2025. Right now we have over 500—543, I think—Super Hornets, and that number goes above 600 when we complete the latest procurement and delivery that was in the 2021 budget.

So what we are doing with the Block 4's, our older Block 4's, is we are actually increasing the life on those jets by 5 or 6 years. We are upgrading the computer systems on them and upgrading their range, with respect to fuel. With the fifth-gen, one of the regrets is the number that we are purchasing this year. However, on my Unfunded List I have five more. I am a believer in the fifth-gen aircraft. I am believer in the mix. Consistently the studies and the wargaming that we have done has shown that that fourth- and fifth-gen mix is a winner in the battle space.

Senator ROUNDS. Thank you. Mr. Chairman, I have got some other questions but I will leave them for the record at this time. My time is expiring.

Chairman REED. Thank you very much, Senator Rounds. Senator Hirono, please.

Senator HIRONO. Thank you, Mr. Chairman. Before I begin I would like to state, for the record, Secretary Harker and Admiral Gilday, I remain concerned about the safety of the fuel tanks at Red Hill facility, especially after the recent release of 1,000 gallons of fuel. It is imperative that the Navy is transparent on this issue and provides open and frequent information to Congress and the public, because, of course, people on Oahu are very concerned about contamination of their drinking water due to these situations that occur at Red Hill. So I expect that you share my concern.

Admiral GILDAY. Yes, ma'am.

Senator HIRONO. That is fine. Thank you. I also would like to note that I support efforts to more effectively prevent sexual assault and harassment in the military and the changes to the UCMJ [Uniform Code of Military Justice] that will get us to that point, and, of course, I very much thank Senator Gillibrand for her leadership.

I would like to get to the shipyard modernization issues that Senator Shaheen mentioned. I share her concerns. So for Secretary Harker and Admiral Gilday, I would like to get you both on the record that construction of a new dry dock at Pearl Harbor will begin in fiscal year 2023. Why is that important? Because you have—well, I have been told that it will take 5 years for this dry

dock to be built, and that is about the time frame—that is the time frame when the new *Virginia*-class submarine is delivered.

So can I get your commitment, because the concern is that with the kind of cost overruns that are already happening at Portsmouth, you know, I want to make sure that Pearl Harbor will be timely addressed?

Mr. HARKER. Yes, ma'am. We are committed to the Shipyard Infrastructure Optimization Plan, especially all the improvements at Pearl Harbor. Pearl Harbor Navy Shipyard was the first one that I ever visited in my tenure, and I am very committed to improving.

Senator HIRONO. The timing of it, of course, is really important, so Admiral Gilday?

Admiral GILDAY. Yes, ma'am. It honestly is at the top of our priority list as we go into the fiscal year 2023 budget bill for MilCon [Military Construction]. I think, as I mentioned earlier, we are about to have a conference with industry out in Hawaii early next month, to get a better understanding of the scope, the estimate. We think right now that that project is probably in the 6- to 7-year time frame, based on the phasing. But we would like to get rolling as soon as possible on that effort.

Senator HIRONO. Yes, because the timing of that dry dock has to be pretty much in conjunction with the delivery of the *Virginia*-class submarine.

Admiral GILDAY. Yes, ma'am.

Senator HIRONO. Thank you. I am glad that you are meeting with industry, because one of the explanations of what is happening at Portsmouth is that you did not really deal with the complexity of the work. So I am glad that is definitely a lesson learned. We do not want to see the kind of cost overruns at Pearl Harbor that we are seeing at Portsmouth.

It is my understanding, Secretary Harker, that Secretary Hicks has ordered 11 missile interceptors transferred from research and development for deployment on Navy ships in the Pacific after a test to simulate an attack at Hawaii by North Korea in November indicated that they could stop an ICBM [markupistic Missile]. Although current sensors were adequate to intercept this one shot, we know from MDA [Missile Defense Agency] and CAPE [Cost Assessment and Program Evaluation] that current sensors will not be adequate for the future capabilities of our adversaries.

Won't these ship-based interceptors need a more advanced radar to combat future capabilities such as HOR–H [Homeland Defense Radar-Hawaii]?

Mr. HARKER. Yes, ma'am.

Senator HIRONO. Secretary Harker?

Mr. HARKER. While I am not an expert in all of the MDA pieces, I do understand the need for that.

Senator HIRONO. For HDR–Hawaii?

Mr. HARKER. Yes. I understand the requirement.

Senator HIRONO. Thank you. You probably know that I am very concerned about the fact that there is no funding for HDR–Hawaii in this year's budget, and we need to keep this project going if we are going to be prepared for a scenario where our adversaries, particularly North Korea, will be developing their capabilities.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hirono. Let me recognize Senator Tillis, please.

Senator TILLIS. Thank you, Mr. Chairman. Gentlemen, thank you for being here, and General Berger, thank you for the time that we spent at breakfast a few weeks ago.

Secretary Harker, I would like to start maybe with just a general statement, I do not expect you to respond to it, but on the subject of military sexual assault, and really more of a broad-based change to the UCMJ. I think it is very important for the service Secretaries and those are vetting the commission report to get us information as quickly as possible. Now we are less than 3 weeks away from beginning the NDAA markup. The only thing we have now is something that I have heard from the DOD, that they have expressed concerns with the scope and the technical challenges of a 6-month implementation, but we really have to get the leaders over in the DOD to get us information quickly, or it is simply not going to be considered before you may have entirely new framework foisted upon you.

But I do want to ask you all, Admiral Gilday and Secretary Harker, about Fleet Readiness Center (FRC) East. I know General Berger went down there and visited recently. A lot of the underlying facilities were established about the same time Buddy Holly was top in the charts, and they are antiquated facilities. It is like a Rubik's Cube when you are moving equipment around to actually do servicing, and so much so that I think Lockheed Martin is talking about, or considering their own depot maintenance facility. There are over 4,000 people that are employed down there. They are doing great work. We have done work like getting the money for the security fencing down there, securing in fiscal year 2018 the lift fan facility funding. But these projects are not online yet, and I do not even think the lift fan facility is under contract.

So am I reading it right, that FRC East is still considered to be an important part of airframe maintenance? They do airframe maintenance for several lines of service, and certainly they are a key for the B variant for the Joint Strike Fighter. What should I read in some of these projects shifting to the right or not moving ahead?

Mr. HARKER. It definitely an important base for us and an important place where we do depot maintenance. I think the——

Chairman REED. Microphone, Mr. Secretary.

Mr. HARKER.—something that is tied to the funding constraints when you need to fit things into the budget.

Senator TILLIS. Admiral Gilday, anything to add?

Admiral GILDAY. Yes, sir. Similar to the SIOP for shipyards, we have the FIOP [Fleet Infrastructure Organization Plan] for fleet repair facilities, and we just started that effort and we are prioritizing those projects. I owe you a better answer, sir, and will come back with what the potential timelines look like, and, of course, how they might play out as we get into the 2023 budget bill.

Senator TILLIS. Yes, I understand you all have got competing priorities and limited funds, so I understand. But we will be submitting for the record some of the specific projects that are required now in a matter of less than 2 years that have not even started.

So we know that things are going to shift to the right, so I would like to get an update on those. I will not run through the details here but will submit them for the record.

I also want to ask you a question about personnel shortfalls, for Secretary Harker and Admiral Gilday. The Government Accountability Office (GAO) released a report on crew fatigue in the surface force that found crew shortfalls were worse than previously reported. GAO reported that until recently the Navy measured shortfalls based on the number of funded positions rather than the number actually required for the safe operation of a vessel. The study also found inconsistent implementation of fatigue management measures.

So how are you working to ensure a safe and adequately crewed surface for our sailors? What are we going to do differently? I know you are new into the role, so looking back, what do we need to do differently, or looking forward, what are we going to do differently?

Mr. HARKER. So the report, we are still working on our response to the report, but I think some of the things we have done is we have shifted how we track things from, as you said, the number of funded billets to the actual number of required billets. So that is something that we have shifted as we track and measure things going forward. We have also increased the number of billets on our seagoing for ships and invested in filling those billets and improve the fill ratio.

Admiral GILDAY. Sir, for the past 3½ years we have increased our sailors at sea by 23,000. We have more sailors at sea today than we had in 2014.

The gaps that we see right now in the data that I look at is less than 5 percent of our billets at sea are gaps. That is not satisfactory. It needs to be zero. What led to this effort to fund all those billets, and why it is so important goes right back to what we learned from those collisions in 2017. So it is a priority for us.

The Secretary said, in the beginning, in terms of prioritizing current readiness as our top priority, that gets right to manning, equipping, and training the force at adequate levels.

Senator TILLIS. Thank you. General Berger, I am out of time but I will be submitting a few questions that have more to do with some of your strategy and the future of the Marine Corps, rightsizing. But thank you all for your service, and I look forward to speaking with you individually.

Chairman REED. Thank you, Senator Tillis. Now let me now recognize Senator Kaine.

Senator KAINE. Thank you, Mr. Chair and Ranking Member Inhofe. Admiral Gilday, I was going to ask other questions but I am sort of inspired to follow up a little bit, from Senator Cotton, on your reading list, because when I saw that there was controversy about it I pulled up the reading list. Mr. Chair, I would like to introduce the CNO's 2021 reading list into the record.

Chairman REED. Without objection.

[The information referred to follows:]



Senator KAINE. So as I look at it there are 53 books on the reading list, which would probably be, you know, tens of thousands of pages, and I read your intro statement about the Navy history, beginning with every ship would have 37 books on it that would be recommended to sailors. This is a voluntary reading list to basically train leaders, and I think the motto that you used to kind of summarize this is "Read well to lead well." Isn't that right?

Admiral GILDAY. Yes sir, it is.

Senator KAINE. As I look at the list, it is a pretty remarkably broad category of books. There are books about naval history. There are books about particular naval operations, SEAL Team Six. There are books about particular weapons systems, like auton-

omous aerial or marine vehicles or robotics or the use of artificial intelligence. There is a lot about kind of, you know, naval history and weapons systems, a lot about strategy. A lot of the books are about sort of individual leadership traits, maybe specifically to the military, officers eat last. But also a lot of book that are not military at all that are really about leadership traits, as I look at the list.

There are book that tackle contemporary issues in society, like racism or the second-class status that many women have perceived throughout history, and those seem to be designed to make people maybe put themselves in somebody else's shoes, to think about somebody else. Those do not seem that controversial to me. There is nothing in the intro to the reading list where you are saying, you know, "I agree with every assertion made in each of these 53 books," and the list is not offered as any kind of mandate or, you know, thought direction. You are just wanting people to make sure that they consider broadly both strategy and history and the perspectives as others as they tackle the important and patriotic task of being military leaders. Isn't that right?

Admiral GILDAY. Yes, sir, and if I could say, on the booking question by a gentleman named Kendi, the reason why that is on the list is because we stood up a task force called Task Force One Navy, after George Floyd's murder, and that essentially came down to conversations in small groups, at every command in the Navy, so that people could tell their story, courageously come forward and tell their stories.

So Kendi tells his story as a black American growing up and the challenges that he faced, but he is also very self-critical. I do not agree with every assertion that Kendi makes and every conclusion he draws, but I did find it to be a very helpful read, particularly in light of those conversations that we were having, and that is why I put it on the recommended list. I know that some question that choice, but it really does get to critical thinking, as I spoke to earlier, in a day and age where it is really difficult sometimes to get right to the facts and for people to make value judgments.

Senator KAINE. You even have a book on the list that I thought was an interesting one. I can't remember the title but it was about how to talk about difficult subjects in a really easy way. So it is kind of like you can't talk about that at work, how to talk about race, politics, and religion. Because in many workplaces those can be divisive, and they are divisive if you do not talk about them or they are divisive if you talk about them in the wrong way——

Admiral GILDAY. Yes, sir.

Senator KAINE.—in a military composed of the entire cross-spectrum of American society. It is good to be able to talk about tough issues and talk about them in a way where people are respectful and listen to one another. Isn't that true?

Admiral GILDAY. Yes, sir, and so back to the conversations we were having, specifically on ships, some people needed to understand how to get the ball rolling, how to introduce these conversations in a way that were not controversial or provocative but in a useful kind of way, to learn from each other. We think it has been helpful. We are trying to continue it, and, sir, thanks for deepening the discussion on this.

Senator KAINE. Yes, deepening the discussion. One of your books is called Deep Thinking. It is by Gary Kasparov, and it is about how human creativity is even more powerful than the most advanced automation or computers.

So, you know, look, the military has got to defend this country, and even though depends, to some degree, on platforms, it still depends most on people, and not people working in their own little sphere and not connected to others, but people working in groups. If people are going to work in groups in a diverse society there are going to be a lot of people in the group who are not exactly like them, and books that help you understand others' perspective, hey, even books that make you feel uncomfortable. My favorite book is the Bible, but I don't like "the last shall come first and the first shall come last." That makes me a little bit uncomfortable, I am not sure there is good book, a really good book, in the history of the written word that has not made some people uncomfortable, and a book that just made everybody feel completely comfortable, I am not sure it lands on any great books list at all.

So I do not discourage you from what you are trying to do, to enable people to read broadly and then see the world through each other's perspectives, so that they can work better together as unit to defend the Nation.

Thank you, Mr. Chair.

Chairman REED. Thank you, Senator Kaine. Let me recognize Senator Cramer, please.

Senator CRAMER. Thank you, Mr. Chairman, and leave it to Senator Kaine to change the topic completely, but I can't resist.

In these times that we are going through, where it is difficult to start a discussion, to your point and your reference to scripture, I am reminded that scripture tells us—it doesn't tell us to be careful. Well, it tells us to be careful how we treat people, but it also tells us to stop being offended so easily. I think part of the problem—and, Admiral, I admire you for wanting to enhance critical thinking, but to have critical thinking you have to have critical conversations, and so, anyway, good work. I applaud you for it, and I will leave it at that. But you never know what is going to on in SASC, right guys?

But back to the other topics—and thank you all for being here and for your service, of course. When we talk about the goal of 460 ships, the Chinese goal of 460 ships by 2030, we are not even really considering their militia or the Coast Guard, which it is my understanding basically doubles that number of assets available to them.

If we had to forcibly maintain freedom of navigation to locations like South Korea or Taiwan or any number of others, how much of an additional problem are the militia assets and the Coast Guard assets? I will start with you, Admiral.

Admiral GILDAY. Sir, I think they are problem just in terms of numbers, but what we have in our favor, besides a pretty robust, forward-deployed force we have, are really strong networks of allies and partners, and that network is growing. The Brits, their first carrier in a generation, is now headed over to the Western Pacific. We work very closely with the French, with the South Koreans, with Japanese, with the Australians, with the Canadians, and the list goes on and on. We are sailing with them, operating with them

every day, and I think that is something that China does not have, and they wish they did.

We really do value it. I just had the Dutch CNO over for dinner the other night. I will meet with another head of Navy next week. I was just in Denmark, and I was in Toulon, France, with both the First Sea Lord from the Royal Navy and also the Chief of Navy from the French Navy, and those partnerships are just key.

Senator CRAMER. Great reminders. Secretary, did you want to add anything to that, or just agree?

Mr. HARKER. I am sorry. I missed the question.

Senator CRAMER. Did you want to add anything to what the Admiral was saying, or just agree?

Mr. HARKER. No, sir. I believe that we have the power and credibility to deter our enemies over there.

Senator CRAMER. So where I want to go next, and this may be a little less conventional, and this is real important back home. So here I come from this agricultural state in the middle of the North American continent, right, and we are talking to Navy guys.

But in 2020, United States agricultural exports to the Pacific included $11.7 billion to Japan, $7.7 billion to South Korea, $3.4 billion to Vietnam, $3.3 billion to Taiwan, $3.2 billion to the Philippines, and $2.8 billion to Indonesia, and on and on it goes, obviously. A lot of hungry people. A lot of hungry people out in the Pacific that like what we grow in places like North Dakota and throughout our country.

In this 2030 scenario, could we guarantee we would have shipping access to all or any of these important trading partners?

Admiral GILDAY. Sir, I think that is the crux of the issue with respect to how our investment——

Senator KING. Admiral, can you get a little closer to the mic, please?

Admiral GILDAY. Sir, that is the crux of our investment strategy, to make sure that we can keep the Navy forward and be relevant. So at any given day we have got about a third of the Navy at sea. We think that is what we need, and not only training but also deployed, to have that presence forward, to maintain those open sea lanes and keep that trade flowing.

We saw what happened in the Suez recently. That should be a lesson for all of us, that at a cost of $9 billion a day, it does not take much to upset global trade through those key chokepoints.

Senator CRAMER. Well, and to your point you made to the previous question regarding the important partnerships, obviously we have to always be reminded of that, because when you look at just the volume, as you said, the assets that they have, the shipyards that they have, both commercial and naval, obviously it can be a little bit overwhelming.

Anyway, getting off on the reading list tangent cost me a little bit of time, but it was all worth it. Thank you, all. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Cramer. Senator King, please.

Senator KING. Thank you, Mr. Chairman. I think the most telling chart in the presentation that you gave us this morning is on page six. It is the Department of Navy total obligation authority,

and the telling line is the yellow line, which is "constant dollars." What it shows is that we are actually either flat or slightly below—you saw me trying to figure it out here—we are slightly below the level of expenditure for the Navy as in 2010.

Admiral, the strategic challenge to this country has changed dramatically since 2010, has it not?

Admiral GILDAY. Yes, sir. It certainly has. I would agree with that.

Senator KING. It has changed from the global war on terror to near-peer competition, particularly with China and Russia, which is a more conventional kind of adversarial challenge. Is that correct?

Admiral GILDAY. Yes, sir, but the only thing I would add is that the character of conflict is changing as well, with our focus on space and cyber as well as the conventional domains.

Senator KING. But still, the point is it is difficult to argue that a flat budget, since 2010 to today, given the rise of the Chinese Navy, for example, it seems to me that is tough to justify, and I know that these were not your decisions.

I want to go back to something Senator Rounds asked, about the DDG. Just let's get it on the record. If that multiyear contract is breached, the Government will have to pay a $33 million penalty. Is that not correct, Mr. Secretary?

Mr. HARKER. Yes, sir, it is.

Senator KING. You have told me, both in the hearing today and previously, that this was the toughest decision that you had to face. The point I want to make about this is not only the lack of the destroyer but the impact that this decision has on the industrial base, not only in the immediate future, in terms of how many people do you need to build the ships, but also the principle of breaking a multiyear I would argue sends a shudder through the industrial base, in terms of their investment. If they are going to make major, $100 million investments in shipbuilding capacity, and also in training of new shipbuilders, they have to have some confidence that there is a stream of demand coming.

Mr. Secretary, you understand that, I am sure.

Mr. HARKER. I do. Yes, sir.

Senator KING. Admiral, you saw it at Bath Iron Works, the number of people that they are hiring and the problem of the cliff, in terms of future production. Now I understand you cannot guarantee ships into the indefinite future, but you understand the impact of the sort of chilling effect that the breaching of the multiyear might have on investment and on workforce.

Admiral GILDAY. Absolutely, sir, and if I take a look at, as an example, the *Columbia*-class, we know we are going to build X amount of submarines. So that gives those companies a clear set of headlights in terms of where are we going, so that they can make infrastructure investments with a high degree of confidence. We saw what happened in Bath, with the *Zumwalts,* when we only built 3 and we thought we were going to build 30, and they made significant investments that never panned out, and so it is not lost on me, the significant negative impact on the industrial base with decisions like this, sir.

Senator KING. Well, and the problem is, as you know I live near Bath, you cannot turn the industrial base off and on. If it goes down, you are talking about welders going somewhere else, and in this economy they are going to go somewhere else, and so I think that is the national security challenge involved here.

The other piece that is the challenge of this budget is—this has occurred to me for a long time. We are having a total rebuild of our nuclear deterrent capacity at the same time as a 100-year rebuild of our depot maintenance capacity, and the problem, those are two sort of one-time expenditures that are sort of varying or altering what would otherwise be a normal budget. I call them the pig in the python of the Navy budget. There is bulge that we are having to deal with, and that is constraining everything else. Mr. Secretary, is that true?

Mr. HARKER. Yes, sir. It has given us unprecedented challenges to try to recapitalize the *Columbia* as well as the shipyards and grow the Navy.

Senator KING. But I think we should look on these as sort of one-time events rather than business as usual, because we are not going to recapitalize the strategic deterrent every 5 years, and we are not going to recapitalize the shipyards.

Final point is on the DDG(X) planning. We talked about the *Ford* today. We had a full hearing on the *Ford* a couple of years ago, and one of the principal things that we learned from that hearing was don't do R&D while you are building the ship, because the catapult and the elevator were both new, and here we are still dealing with the elevators.

So I hope, to both of you, that you will work with the shipyards to minimize what I call the first ship premium. The more fully developed the plans and requirements are before the contracts are bid, the better you are going to do in terms of price and performance on those ships. That is just based on what we have seen in the past.

Admiral, I hope that you are going to follow a course of working with the shipyards and having the engineering as complete as possible before we force these shipyards to bid with considerable risk built in.

Admiral GILDAY. Sir, that is the plan. In fact, we are talking to both Bath and Ingalls right now, all stakeholders in the same room as we talk about the design of that ship. So similar to what we did when we went from, let's say, the *Ticonderoga*-class cruiser to the *Arleigh Burke* destroyer, we are changing the hull, right, but the combat system is going to remain the same. So to the point you made about *Ford,* we are not looking for a build where we are going to have to pull off successive miracles to get a ship to sea on time.

Senator KING. Thank you very much for your service, all of you. Thank you, General Berger.

Chairman REED. Thank you, Senator King. Let me now recognize Senator Sullivan, please.

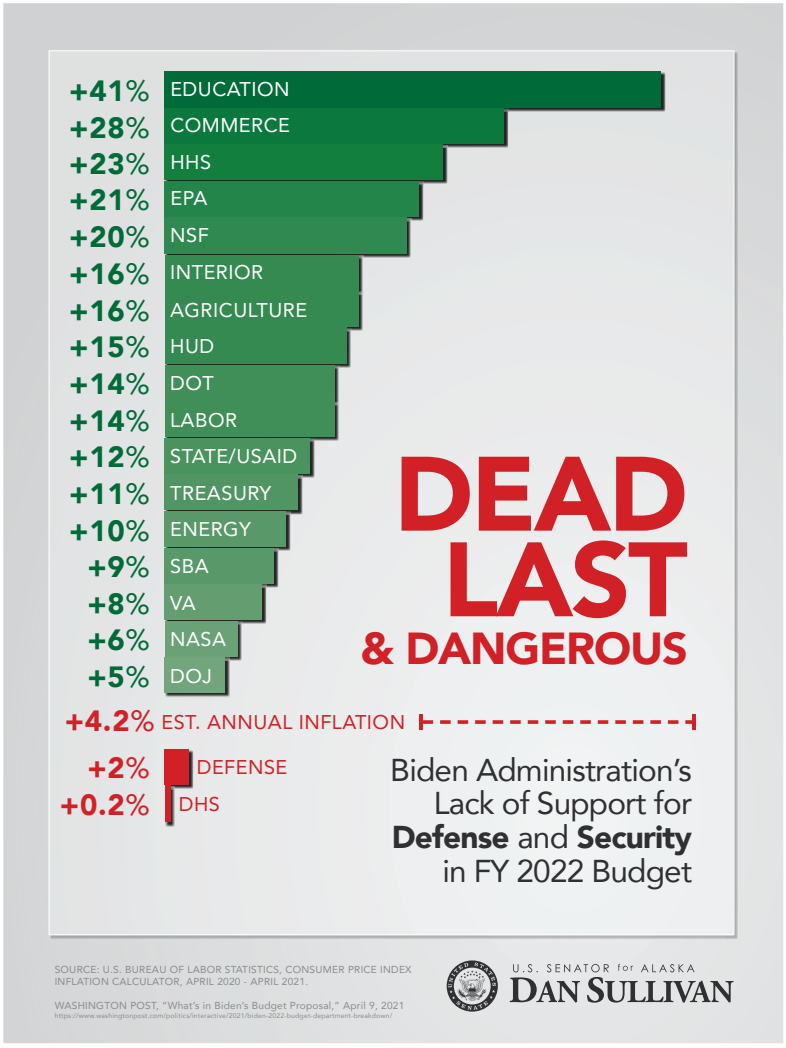
Senator SULLIVAN. Thank you, Mr. Chairman, and gentlemen, thank you for your testimony today and your service to our Nation.

Look, I want to agree with Senator Inhofe here. There is a lot of discussion about difficult choices, and you are up here and you

cannot admit it but you do not like this budget. We know that. I do not like this budget. This is not difficult choices. This is bad choices.

If you look at where the Biden administration is prioritizing our military, it is dead last, that and homeland Security. After inflation it is actually cut. Every other agency gets a double-digit increase, but for the military and defense of our Nation it is dead last.

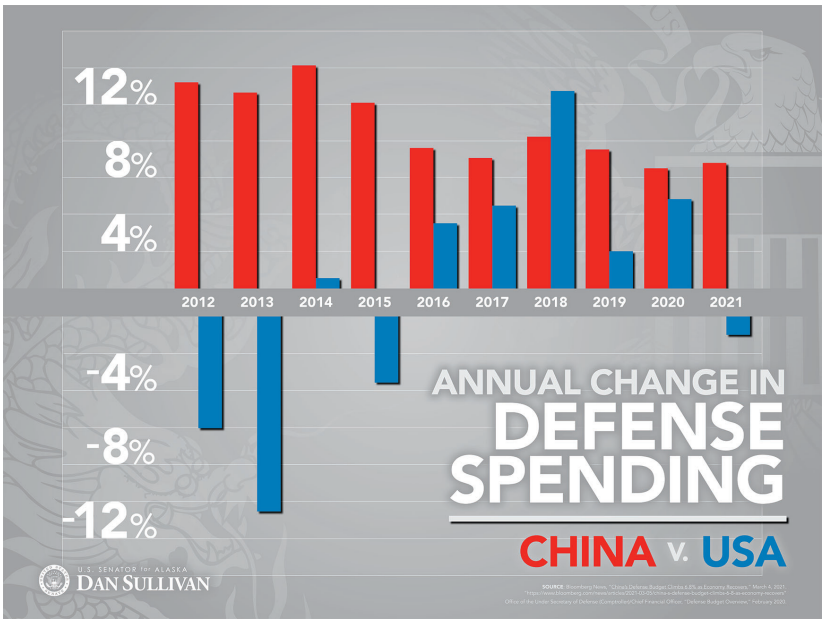
[The information referred to follows:]



Now this is a very bipartisan Committee, and I want to thank the Chairman, because I think he is doing a great job. I want to thank my friend, Angus King, because I also think he is doing it. But I am going to ask my colleagues, particularly my Democratic colleagues, for help, for help—let's see the one on China—because at the national Democratic level, whether it Chuck Schumer and

Bernie Sanders, with their Defend the Pentagon amendment last year to the NDAA, that was 14 percent across-the-board cuts, for that budget, or what we are doing with competing with China. That shows China increasing its defense budget about, on average, 10 percent a year over the last decade. We have decreased it, Obama-Biden, 25 percent cuts—25 percent cuts, second term. That is just crazy.

[The information referred to follows:]



We tried to rebuild it when the Republicans were in power. Now we are cutting again. We cannot do this. We cannot do this. So my colleagues, I am asking, help us. That is the trend.

So let me just ask, Admiral, General Berger, if these trends continue—I am not going to ask you to comment on the budget, but Admiral, I was very appreciative of your statement, if the Navy's top line remains flat, the fleet will decrease, but we need a larger, more capable fleet. If these trends continue, flat, or actually this is a declining military budget—again, if you are Department of Education you get a 40 percent increase to your budget. You guys get a 4 percent cut.

If these trends continue, what will this do, specifically Admiral and General, to our ability to compete against China, in the long term? I am not asking for you to comment on this budget. I am asking you, declining budgets, what will that do. Sir?

Admiral GILDAY. Sir, it is going to cause us to make some difficult choices in terms of priorities, and it will be that tension between current day, current readiness, and modernization, and making tough choices in terms of where the——

Senator SULLIVAN. But more directly, if we are—sorry to interrupt—if we have declining budgets, which the Biden administra-

tion clearly wants, okay. That is what they do. No offense to my national Democratic—not the ones here. Not the ones here on this Committee, but overall, go look at the chairman of the Budget Committee right now. He wants a 25 percent cut to the U.S. military, Bernie Sanders. Our ability to compete with China will be dramatically diminished, won't it?

Admiral GILDAY. So I think that chiefs have been consistent about our best advice is a 3 to 5 percent growth profile would put us in a place where we think we need to be to both compete, deter, and win, if it comes to a conflict.

Senator SULLIVAN. Thank you. General, do you have a view on this? Again, if the trends continue. I am not asking you to comment on today's budget. I know it is difficult for you as the witness because you do not like this budget. I know you do not like this budget. I cannot stand this budget. But what do you think, General?

General BERGER. What has to remain consistent is the notion of a pacing threat, as you highlight, Senator. That means they are moving, we are moving. The trends continue, as you point out. If they continue to invest at the rate that they are going, and we do not maintain pace with that, then we will widen a gap, in other words, increase the risk strategically to our country.

Senator SULLIVAN. Let me ask one more specific thing, and it is really a joint thing between the Navy and the Marine Corps. General Berger, again, I really appreciate all you are doing on the force design and your very strategic and innovative thinking with regard to the Marines. What sea denial capability does the Marine Corps currently have, and what capabilities will Naval Strike Missile and Tactical Tomahawk give the Marine Corps? Admiral, to you, how important is it to you that the Marine Corps be able to conduct these sea denial missions to support the Navy? This is a really integrated element of your strategy. It is Marine Corps and Navy. I think a lot of people—I know the Congress cut this last year, and I think it was a mistake. Do the two of you have a view on that?

General BERGER. Today we have a very limited capability. I mean, you could probably, on one hand, less than four or five of the capabilities that contribute directly to sea denial. We need a ground-based, anti-ship capability so that we can lock down certain, especially key choke points that the fleet commander, the Joint Force commander need to control. The anti-ship missile, the NMESIS [Navy/Marine Corps Expeditionary Ship Interdiction System], the Naval Strike Missile, and the larger, longer-range, the Maritime Strike Tomahawk, those give us the ability to control straits, to lock down an area that the fleet commander needs to control.

Admiral GILDAY. Sir, I agree with the Commandant, and I think that the analysis that we have done and we have presented, it requires a different mix of both traditional battle force ships but also new amphibious ships and combat logistics ships in order to yield more combat power in a distributed way. We understand how we think we need to fight in the future, and the plan that we have presented, the analysis that we have done, I think puts us on a path to yield the kind of power that you introduced and the Commandant followed up on.

Senator SULLIVAN. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Sullivan. Senator Warren is recognized via Webex.

Senator WARREN. Thank you, Mr. Chairman, and thank you all for being here today.

Admiral Gilday, I would like to address the Navy's efforts on predicting more fuel-efficient engines for the surface fleet. One of these technologies is the Hybrid Electric Drive, the HED, system, which uses an electric motor to improve the ship's overall fuel efficiency, consuming less fuel and lowering its total costs.

A GAO report in November 2020 detailed how the Navy had decided to suspend the HED program and pursue a different research effort, the Propulsion Derived Ship Service, PDSS. The report also stated that the Navy did not fully assess the costs and benefits or complete the testing of the HED system before making its decision, and could not provide any information on why it is necessary to suspend the HED program in order to pursue the PDSS research effort.

So Admiral Gilday, after spending over $100 million of taxpayer money on the development, purchase, and upgrade of six HED systems, would you say that the Navy made the right decision in suspending the HED program?

Admiral GILDAY. Ma'am, I am familiar with the report, but I really need to go back and take a look at the conclusions and then the recommendations, and I would like to come back to you with the details.

Senator WARREN. Well, can you say something about what factors went into the decision for suspending the HED system?

Admiral GILDAY. Ma'am, I cannot with a degree of specificity that I think this topic deserves.

Senator WARREN. Well, Admiral, the GAO report mentioned that the system requires little maintenance, per the commanding officer and crew of the USS *Truxtun* and senior Navy engineers. Also, according to the Navy's January 2020 report to Congress, the system was designed for low-speed operations which comprise more than a third of a typical DDG's operating profile.

So the report I am reading, it does not match up with the conclusion here. So it is my understanding that the PDSS is still in its infancy stages, with quite a lot of time before it reaches full operational capability. Is that correct, Admiral?

Admiral GILDAY. Ma'am, I do not mean to be evasive. I just really need to dig into that report more deeply and get briefed on it. I am committed to come back here with a thorough answer to your questions.

Senator WARREN. All right, and one of the questions I am going to ask you about is whether or not the money dedicated to the HED system is going to the PDSS system, or if it is something else here.

You know, I am glad that the Navy is prioritizing research and development on fuel-efficient ship engines, and that it thinks that there are even better technologies that can outperform the HED. But I am really concerned that abandoning a good system now in favor of a better but not yet close to an operationally ready system is a good idea. It is critical that investments in improving fuel-efficient ship engines be made reliably and with transparency. You know, these technologies ensure that the Navy remains flexible and

agile for the future and reduces its dependency on a potentially vulnerable fossil fuel supply chain, and that it builds public trust in how money is being spent.

So I am going to look forward to hearing more from you on these questions. I really want to understand where the Navy is on this.

Admiral GILDAY. Yes, ma'am.

Senator WARREN. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Warren. If Senator Scott is ready he could be recognized.

Senator SCOTT. Thank you, Chair Reed.

Chairman REED. Thank you, Senator Scott.

Senator SCOTT. I want to thank you for your service and what you do every day.

I guess the first question is, do we all agree that we are facing increasing threats from our adversaries all across the world?

Admiral GILDAY. Yes, sir.

Mr. HARKER. Yes, sir.

Senator SCOTT. Do we have any feeling that Communist China is going to slow down in building up their military and doing everything they can to cause us problems in the Indo-Pacific?

Admiral GILDAY. No, sir. There is no indication they are slowing down.

Senator SCOTT. Do you believe that as they build their economy they are going to continue to invest—Communist China will continue to invest more and more into their military?

Admiral GILDAY. I think that is one of the projected ways forward, sir, that their funding lines would continue to trend upward.

Senator SCOTT. So if we believe all that, if you look at these budget numbers we are seeing, as Senator Sullivan has pointed out, and when you look at inflation, we are seeing less money invested in military. We are not even staying up with inflation. How does that make any sense? How can we believe that we can do our job if we are not even going to stay up with even inflation in defense?

Admiral GILDAY. I will just say that I am grateful for the top line that the Navy has, and I am committed to making every dollar count so that we are fielding the best force that we possibly can. So I think that that is my responsibility, is to take the top line that we have and to field the best force that we can, the most ready and the most capable and the most lethal. That is how I am proceeding with respect to how we are investing our money.

Senator SCOTT. You are not defending whether it is the right number or not. You are just saying, "I got stuck with this number and so I am going to—whatever I get stuck with, I will do my best."

Admiral GILDAY. Sir, that is what I have to do. My way forward has to be budget informed, and I have a responsibility to make sure that the force that is out there today, that I am serving not only the Nation well but I am serving the sailors that are on those ships, that they have what they need to be a credible fighting force. I think we can do that.

Senator SCOTT. So everything I read, Admiral, is that when the United States plays war game scenarios in the Indo-Pacific, especially over Taiwan, we lose. Is that the war games you have played, or do you have a different view that what we——

Admiral GILDAY. No. Sir, I have a different view. It depends on the game. It depends on the approach. Those war games, even the ones where we get beat, we learn a whole lot in terms of honing our skills, our concepts, and giving a better understanding of what we need to win, with respect to kit.

Senator SCOTT. Do you believe that we have the Navy that is going to deter Communist China from invading Taiwan today?

Admiral GILDAY. I do. I do not think we are doing it alone. I think we are doing it with allies and partners. But I think we have a credible force forward right now.

Senator SCOTT. Thank you. General Berger, can you give us a little bit more information on your re-envisioning of the Marine Corps and what you are doing and how that is going to help us deal with Communist China?

General BERGER. Sir, the Marine Corps, for the past 20 years, largely has been in the Middle East, doing what the Nation needed it to do, but going forward it needs to do something different. To deter the PRC [People's Republic of China], the PLAN [People's Liberation Army Navy], and to be ready to respond to any crisis, we have to go back to our naval roots. We have to become expeditionary once again. We have to fit into a Joint Force, as CNO answered to your first question, as a Joint Force that can work with our partners and allies, to first prevent a crisis, but if there is one, be ready to respond quickly.

Senator SCOTT. Do you believe today that your understanding of—if you were involved in trying to deter or defend Taiwan, I mean, defend, could you do it?

Admiral GILDAY. That is a simple question to ask. As you pointed out, sir, it is a very complicated one to answer, because on different classification levels and different scenarios the outcome is different.

Senator SCOTT. What do you personally believe? Do you believe that we can defend Taiwan today?

Admiral GILDAY. I believe we need a margin of error so that it is not even close.

Senator SCOTT. Do you think that we have it?

Admiral GILDAY. It depends. Conventionally, deterrence is partly in the mind of the adversary. Do they believe we have the capabilities and believe we have the will to use it? I can answer the first one, not the second one.

Senator SCOTT. Do you think having a defense budget that does not stay up with inflation that it gives them the belief that we are committed?

Admiral GILDAY. I think, back to the pacing part of a pacing threat, there is a degree of strategic and operational risk that we need to understand. The budget is part of that.

Senator SCOTT. Thank you, each of you. Thank you, Chairman.

Chairman REED. Thank you, Senator Scott. Senator Peters, please.

Senator PETERS. Thank you, Mr. Chairman, and thank you to each of our witnesses for your service to our country.

Admiral, my question for you is, I would like to return to the GAO report that Senator Tillis addressed earlier, and specifically its finding on fatigue. Shifting away from optimal manning process to better account for ship workload will certainly help in the long

run, but my question for you, sir, is what are you doing now to combat fatigue in the fleet?

Admiral GILDAY. Sir, making great gains to make sure that everybody on ships gets 7, 8 hours of uninterrupted sleep a night. That is a challenge. We have been learning a lot. We have medical experts who are helping us design a program. We are assessing that program. We just came out with a revised instruction based on our assessment a few months ago. We continue to learn, but I am confident they are on the right track and we are committed to this, sir, again, tied to those collisions in 2017.

Senator PETERS. Thank you, Admiral.

General Berger, the Marine Corps just awarded a contract for the Organic Precision Fires-Mounted system. This type of investment in loitering munitions will certainly be a key to ensure that the Marine Corps is properly equipped for those fights in the future.

My question for you is, could you discuss how the fiscal year 2022 budget actually reflects these modernization priorities in unmanned system?

General BERGER. Both in the air and on the surface, as you highlight, we will triple the number of unmanned aerial systems, aerial squadrons that we have, and they will be a mix of those that collect, those that are lethal, those that provide logistics, those that fuse information and move information.

On the surface, to an earlier discussion, the Joint Light Tactical Vehicle, for example, we are using it in a configuration now with the Naval Strike Missile, where it is a combination of manned and unmanned teaming, some vehicles crewed, some uncrewed. That allows the tactical commander to spread his forces out and pose the adversary a threat from multiple vectors, which is what we need to be able to do.

Senator PETERS. Right. General Berger, again, in April, the Marine Corps Gazette, there was a story talking about the Second Marine Information Group, and the commander offered several recommendations for operating in the information environment, focusing entirely on both individual and unit mindsets. This certainly makes me wonder about the intangible components of Force Design 2030. So could you talk to the Committee a little bit about what you believe every marine should know about information and how to operationalize it, as well as what every commander should know?

General BERGER. My assumption is that you are going to want your Marine Corps and your Navy far forward. That is the best chance you have to deter. That is the best chance you have to respond to a crisis. If you are far forward, then you are closest to the adversary, and what information goes back and forth, what messages you are sending, what you are collecting and moving within your force matters.

I think the Joint Force Commander, the combatant commander that the CNO talked about earlier, is going to rely very heavily on the Marine Corps and the Navy forward to paint a picture of what is in front of them and to move that information, and to call out an adversary's actions to make it public.

Every marine then who is forward has to understand that as lethal as we are, and we are very lethal, the information part of that is extraordinarily important. We have to understand that, that every individual becomes a cog in a bigger system of what do they see in us, what do we see in them, how are we trying to defeat their reconnaissance of us. What do they understand about us?

So it is higher level of understanding for marines and sailors, I think, forward, that has not been necessary in the past, but will be critical moving forward.

Senator PETERS. Right. Thank you, General. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Peters. Senator Tuberville, please.

Senator TUBERVILLE. Thank you very much. Thank you for your service.

Admiral, I want to revisit your statement that numbers matter. China's navy is bigger, not only bigger but geographically concentrated. Almost all PLA [People's Liberation Army] Navy ships are in the South China Sea. Do you believe the United States maintains naval superiority within 1,000 miles of China?

Admiral GILDAY. Sir, right now we do. If we needed to respond, we could, and we could respond with overwhelming force, and then surge additional forces forward.

Senator TUBERVILLE. Okay. General Berger, Iwo Jima, Midway, Pearl Harbor—a fight in the Pacific falls on the Navy and the Marine Corps. If we have conflict with China, our Nation will look to you. But if this budget passes, the Marine Corps in strength of fiscal year 2022 down by 2,700. You have worn the cloth of this Nation for 40 years, and I know have the courage to answer this question like a marine. Is it responsible to shrink the Marine Corps as the Nation pivots into the Indo-Pacific?

General BERGER. When you say, just to clarify, sir, "shrink the Marine Corps," are you talking about end strength, just to make sure, the structure of the Marine Corps?

Senator TUBERVILLE. Yes.

General BERGER. I would trade size for quality if we have to. I think all the service chiefs would like to never cut their end strength, given an unrestricted, unlimited set of resources. But that is not the world that we live in. So we will reduce the end strength. We have reduced the end strength in order to fund our own modernization for the future.

Senator TUBERVILLE. Thank you. You know, our military is built on, obviously, recruitment, because we are a volunteer military. I just do not want us to get into this extremism in which we know we have problems in a lot of different areas. You know, being a football coach for years I brought people in, and they went my way or they went the other way, because you have got to build a team.

But, you see things like, Admiral, in your department I saw, on social media, we had a Pride flag on your social media on an aircraft carrier. I have no problem with that because, I had young men that were gay that played football for me. I mean, you know, you take everybody, and this takes everybody in the military. But we cannot separate. We cannot separate. To me it is the bigger cause that all these young men and women fight for our military.

It is not individual sport. It is not golf. It is football. I mean, we have got to build a team.

I have asked this same thing of Secretary Austin and the others. We just need a commitment from everybody to kind of calm down on all this so we can build a military that believes in one thing—our country—and we believe in it together. If we keep dividing our country we are going to continue to have problems, and I think it is something we just need to all be real careful of in the future. Because we have got the greatest country on the face of this earth, and we do not want to destroy it by individualizing and making individual sports out of everything we do, especially the military—especially the military.

So I just needed to make that statement. Thank you, Mr. Chairman. Thank you very much.

Chairman REED. Thank you, Senator Tuberville. Senator Duckworth is recognized via Webex.

Senator DUCKWORTH. Thank you, Mr. Chairman, and as someone who has served 23 years in our military I can tell you it is one team, one fight, regardless of who is in the aircraft with you. I would tell you that when I was bleeding to death in my helicopter I did not ask what somebody's background was. I only cared that they had an American flag on their shoulder and were there to rescue me. So our military truly is united, and that oath of office is what unites all of us.

Good morning, gentlemen. Thank you for being here and thank you for your service to our Nation. I am very courage to see the development of unmanned naval platforms such as the MQ–25 aerial refueler, which will provide essential logistics support to our maritime forces. The MQ–25 conducted the first-ever aerial refueling between a manned aircraft and an unmanned tanker on June 4, from MidAmerica Airport in my home state of Illinois. It will be the world's first operational carrier-based, unmanned aircraft providing aerial refueling and ISR [Intelligence, Surveillance, and Reconnaissance] capabilities for carrier strike groups. MQ–25 integration will extend the range of our aircraft carriers and lay the foundation for all future carrier-based unmanned systems.

Admiral Gilday, could you speak to the impact unmanned programs such as the MQ–25 have on our ability to provide essential logistics in contested environments and the importance of continued investments in unmanned systems for the Navy's future force design. In particular, how do you plan to employ this capability to support our operational plans in the Indo-Pacific region, where the tyranny of distance is something we have already discussed? Thank you.

Admiral GILDAY. Yes, ma'am. Thanks for the question. I think that the impact of the MQ–25 and our experiences that we have seen out at sea, and again, with the aerial refueling that you mentioned 2 weeks ago, I think the effects are profound, for not only the Navy but our military. It will change the dynamic of the carrier air wing. You mentioned increased ISR capability, increased range, increased lethality.

I also think it is going to change the way that we employ the air wing, where you will have manned and unmanned operating together. The MQ–25 is our first look at how we are going to do that

going into the 2030s. That particular platform we have a high degree of confidence in right now, and that is only growing day by day as we operate it.

So as we move forward, ma'am, what we are learning from the MQ–25, we are not only applying that to other aerial vehicles but we are also applying it to the work that we are doing in unmanned surface platforms and unmanned undersea platforms as well.

Senator DUCKWORTH. Thank you, Admiral. I was pleased that you released the Department of the Navy's Unmanned Campaign Framework, which outlines a holistic approach to developing and deploying unmanned systems and ensuring that individual technologies can operate within a broader architecture of networked warfighting systems. I believe unmanned systems will play a key role in future distributed marine operations, littoral operations in a contested environment and expeditionary advanced-based operations.

However, these platforms will not provide maximum capability for our forces if they are not fully integrated with other important systems, and I am so glad to hear, in your earlier answer, that you are integrating these systems in.

I do understand that you need to develop a manned/unmanned teaming solution in order to effectively employ the MQ–25 in some situations. Can you please just walk me through your plans for this solution and what resources you might need to develop this enabler, so we can get the most use out of an important capability like the MQ–25?

Admiral GILDAY. Yes, ma'am. So first of all, on a campaign plan I would also like to mention that the Commandant, General Berger, also signed that framework with me, so the Marine Corps and the Navy are working, because we have to, hand in hand as we proceed forward with unmanned.

So conceptually, ma'am, what we believed for some period of time is that this would be a phased approach with respect to unmanned, where, for a certain period of time, there needs to be a man in the loop. So eventually we will have artificial intelligence technology, machine learning that allows us to continue to increase the amount of autonomy that we employ with these vessels. But I think that we have to be smart about this and understand that this is going to be a phased approach. But there is still a lot of power there, even in a phased approach, in a responsible way to keep a man in the loop as we leverage the unmanned and uncrewed vessels.

Senator DUCKWORTH. Thank you. I would like to chat a little bit about the Indo-Pacific region. You know, I think we are clear that our alliances and partnerships provide the United States with a clear asymmetrical advantage against potential adversaries. I know I am out of time. General Berger, I would like to submit a question for the record to ask you really how would the Marine Corps balance the need to invest in modernization with resourcing critical readiness and mil-to-mil initiatives with our partners and allies, particularly in the Indo-Pacific region. I am talking specifically about building trust and interoperability by actually have a presence in the Indo-Pacific on the ground, in the region, to basically, bottom line, enhance relationships and increase deterrence and open doors, finding new friends, maybe not necessarily allies but

people who are just happy to have us there to enforce the rule of law and international norms and behaviors. So I will submit that for the record, and I hope that you will send me an answer. Thank you, General Berger.

I am over time, Mr. Chairman.

Chairman REED. Thank you, Senator Duckworth. Senator Blackburn, please.

Senator BLACKBURN. Thank you, Mr. Chairman. Admiral Gilday, I want to come to you, if I may. Naval Support Activity Mid-South in Millington there in Tennessee, and, of course, we have some of the best personnel there for Navy Recruiting Command and Navy Personnel Command, and we are just so honored to have them there and appreciative of the work that they do.

I want to talk with you a little bit about the newly transformed model of recruiting, which you have really pushed back and away from the legacy model, and where you had one recruiter for every job. I like what you are doing with the 1,000 talent acquisition stations supported by 64 Talent Acquisition and Onboard Centers, and 26 Navy talent acquisition teams. I understand that this is fully operational now, in 2021, when your start date and your target date had been 2023.

So it is wonderful to see transformative change being implemented and ahead of schedule, and the men and women that have worked on that really deserve a lot of talent. So talk a little bit about how this transformational model with basically the three-person team, with the recruiter or the scout, the assessor, and the onboarder, how that is working and how you have implemented that.

Admiral GILDAY. Ma'am, thanks for recognizing our teammates out at Millington. Really a terrific group of innovators out there.

I would say two things up front that allow us to take a look at how we reimagine recruiting. One was the pandemic. We were challenged with respect to face-to-face contact, and so we began to rely on the digital that much more. We already had an idea of how we were going to do this in terms of, as you described, transforming the organization. Based on funding from Congress, we were able to accelerate that by 3 years. We could not have done that without the help of this Committee and others. That is, I think, a real model for when Congress believes that we are on the right track here and they allow us to fund it, that we can make fundamental changes.

Under this new system, we have recruited 54,000 new sailors into the Navy. We have met and exceeded our goals, even during the pandemic. So it is relying on small teams that work together very closely and also are leveraging social media and the digital, as well as teams that compete out there where the potential recruitable population hangs out, which is on the gaming sites.

Senator BLACKBURN. All right. I want you to drill down a little bit on two things. Number one is how this is helping you get the skilled talent you need for 21st century warfare, and second, how you have used bots and data to help target and to be effective.

Admiral GILDAY. So the data has allowed us to understand where the recruitable population resides, not physically but virtually, in cyberspace. When you think about the gaming community, which

is pretty big—I have sons that are in college, and it is millions of young people that play these games online. We have created Navy teams that are out there playing and can answer people's questions when they have one.

We found, in particular, with respect to those that are interested in the cyber field of study that I have to rely less on them being a college graduate than the fact that they are a good gamer or a good hacker, and just are interested in how they can apply their skills in a place like the Navy, where they can do some pretty exciting things, if they have the right authorities to do so, and that is classified, but that gets into a higher classification.

But we have been able to attract, as you mentioned, ma'am, some really sophisticated and dedicated patriots into the Navy.

Senator BLACKBURN. I would assume utilizing that type, artificial intelligence, you will be able to apply that to things such as promotion boards, to eliminate bias and to——

Admiral GILDAY. Yes, ma'am. That is good goal. I would just say that I think it will take us some time to get there before machines can make those kinds of, in some cases, subjective judgment calls, whether it is on the battlefield or whether it in a promotion board. But I certainly think that is in our future, and that is the path that we are on.

Senator BLACKBURN. I appreciate that, and I commend you and the team at Millington for the way forward on this.

General Berger, I am going to submit questions for you dealing with China. Secretary Harker, I also have some questions pertaining to China, and I will submit those for the record.

Mr. Chairman, thank you.

Chairman REED. Thank you, Senator Blackburn. Senator Rosen, please.

Senator ROSEN. Thank you, Chairman Reed and Ranking Member Inhofe, for holding this hearing, and thank you so much for your service and for being here today.

Of course, in Nevada we have our wonderful Fallon Naval Air Station, and we are proud to host it. It is home to Top Gun, our Nation's premier carrier air wing. It is home to the Navy SEAL Training Center.

So last year the Navy requested an expansion of over 600,000 acres of Federal land and over 65,000 acres of non-Federal land, which would expand Fallon Training Complex to about 900,000 acres. Federal land managers currently allow access to the public for much of the proposed expansion area for grazing, for hunting, for mineral exploration, and geothermal development, and the Navy's proposal would curtail many of these activities, in addition to restricting Tribal access to some of their most important cultural sites.

The fiscal year 2021 NDAA included a provision that Senator Cortez Masto and I offered that mandates the creation of an Intergovernmental Executive Committee, or IEC, to allow local, state, and Tribal governments a public forum to collaborate with the Navy to provide advice and exchange information. In doing so, we hope we can support the Navy's modernization requirements and keep up with all, of course, our current emerging threats, tech-

nologies, while maintaining Nevada's natural resources and cultural resources.

But the Navy sent over a legislative proposal to this Committee almost identical to last year, unfortunately, and it did not incorporate any of the suggested changes or feedback from our local stakeholders. So, Admiral, I am really pleased that you did your IEC right away, but why hasn't the Navy's proposal been modified to incorporate some of these?

Admiral GILDAY. Ma'am, I think for the very reasons that you mentioned with respect to there are a number of stakeholders involved here. As you know, we have had over 300 engagements with the Native American Tribes to try and work through some of those difficulties. There are other difficulties that may or may not coincide with the Tribes that involve the county. There is also the state. There is also the Department of the Interior.

So the IEC, we have had two meetings so far. The Walker Paiute Tribe is a vice chair, as well as the County Commission is also the vice chair. I think the way forward here that I am optimistic about is we are now getting all the stakeholders in the same room together, so that we can work through all of these issues in a way that allows us, we hope, in the end, to modernize the range. We have not done so since the mid 1980s. We are two generations behind with respect to aircraft. We are facing a problem now where if we do not modernize this range, the first time F–35's will be able to employ their full capability will be in combat.

We are building wind farms off the California coast that, again, cut into our training range. We are running out of space to train, but we are using, you know, for some years now, precision weapons, GPS-guided weapons, with longer ranges, with sophisticated aircraft, and we cannot train our pilots and our air crews to their full capability.

So I, again, am very enthused, ma'am, by the IEC. A meeting here next Monday, is the next one, tracking it very closely, and, of course, I very much appreciate your support as we work through this.

Senator ROSEN. Well, thank you. I look forward to working on that with you and all the allies and partners. I want to just quickly talk about the Fallon's B–19 range, because in 1959 the Navy did drop live, inert ordnance right outside of there, speaking of the Walker River Paiute Tribe, and that is nearly 6,000 of their acres where you dropped this ordnance, and so it contaminated all of that.

Will you commit to working with me and the Nevada delegation on ensuring that the Tribe is very fairly compensated for this contamination?

Admiral GILDAY. Yes, ma'am. You have my commitment.

Senator ROSEN. Thank you. I will submit this for the record, but Senator Blackburn and I, she talked about the skilled workforce. We actually have a bill called the Cyber Security Reserve Act, to establish a civilian cyber reserve corps, modeled after a recommendation from the National Commission on Military, National, and Public Service report, that will help in surge capacity and training, giving people onramps to serve their government, like the

other Reserve corps do, and I look forward to talking with you about that in another time. Thank you.

Chairman REED. Thank you, Senator Rosen. Senator Kelly, please.

Senator KELLY. Thank you. Thank you, Mr. Chairman, and Mr. Secretary, Admiral, General, thank you for joining us this morning.

This past weekend I visited the U.S. Merchant Marine Academy, a school that gave me the foundation to succeed in the Navy and then later at NASA [National Aeronautics and Space Administration] as an astronaut. While the Merchant Marine is overseen by other committees, I want to acknowledge the important contribution it makes to our total sealift capability. This is critical, and in order to sustain our forces we need to ensure robust and reliable sealift capacity. Competition with China is increasing, and projecting power to the Western Pacific (WESTPAC) places a demand on our sealift capability that simply was not a factor in the Middle East.

Our witnesses mentioned earlier, and all of you indicated in written testimony for this hearing, your concern about threats to our supply chains and global sustainment networks. General Berger, can you expand on any concerns you may have about our sealift capability today and what more does the U.S. need to do to ensure that we have a ready force of sufficient capability?

General BERGER. Like a lot of other people wearing a uniform, the first time I got familiar with sealift capability was 1991 in Saudi Arabia. Sailed them into Al Jubail port, offloaded ships for probably 2, 2 1/2 weeks. That is where we got our equipment from, and we flew from Contiguous United States (CONUS) and linked up with our equipment there. That was my first exposure to sealift. But that was assured. Sailing those ships in and out of there, they were protected, they were secured. Nobody was threatening those lines at all.

A very different picture, as you point out, from the Indo-Pacific, where the Chinese Navy is stretching out, it is gaining a marine and a naval force projection capability that they have not had. They want to control the same straits that we need to keep open. Sealift now becomes a major concern. In other words, a handful of large ships with a lot of gear on them now becomes vulnerable. We need to disperse that.

So I think military sealift, going forward, is not the same variant as 1991, where there are three or four ships, or five in a squadron, and they are loaded to the gills with equipment, and you can sail into a secure port and offload it on your timeline. That is not going to be the case.

Senator KELLY. Well, thank you. Admiral or Secretary Harker, any additional comments on our sealift capability?

Mr. HARKER. We definitely need to recapitalize our sealift capability. We are working to do so, and it is something that we believe strongly in investing in new ships, because that gives us the biggest bang for our buck.

Admiral GILDAY. Yes, sir. If I could just mention something, or expound on something that General Berger mentioned. I think that as the Department looks at this new Joint Warfighting Concept and as we think about how we are going to fight differently in the

future, I think this is exactly what the Commandant was getting to with respect to one area would be sealift, in terms of the capacity that we need, based on the way we are going to fight.

What the Navy is doing right now, we know that we are behind on recapitalizing sealift, but Congress has given us authorities to buy used sealift. So we have done the market analysis and we are currently purchasing five additional ships, nine total, about a tenth of the cost to build a new ship. So we do some minor modifications in a U.S. shipyard that gives us a Roll On/Roll Off (RO/RO) capability as an example.

Secondly, what we are doing in this budget, particularly, we have got 16 additional life-extension plans for existing sealift. We are not satisfied with where we are right now, sir, but I think we are headed in the right direction with regard to recapitalization and repair.

Senator KELLY. As you get those new ships, do you feel like you can find the officers and crew to man them?

Admiral GILDAY. Yes, sir. One of the national treasures we have is our Merchant Marine force, and they have been great.

Senator KELLY. Well, thank you, and I am willing to work with you going forward on any further ideas on how we strengthen that capability. It is critical to maintain these supply lines. General, as you pointed out, it is much different than what we dealt with in 1991, in the first Gulf War.

Thank you, and Mr. Chairman, I yield back.

Chairman REED. Thank you, Senator Kelly.

Mr. Secretary, Admiral, General, thank you for your testimony today and thank you for your service to the Nation over many years, and please relay our thanks to the men and women of the Navy and Marine Corps and their families.

With that I will adjourn the hearing.

[Whereupon, at 11:56 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

SHIPBUILDING DEFENSE INDUSTRIAL BASE

1. Senator SHAHEEN. Secretary Harker, what policy initiatives or funding investments are being implemented within the shipbuilding defense industry to help stabilize the future of the industrial base and to counter increased costs and other risks due to defense industry gaps?

Secretary HARKER. In an effort to create, maintain, protect and restore the defense industrial base, the Navy is focused on investments and efforts that safeguard, synchronize, and expand domestic shipbuilding and ship sustainment supply chains. The shipbuilding supply base faces an unprecedented set of challenges: resiliency throughout a global pandemic; the decline of critical markets and suppliers; aggressive industrial postures of peer and near-peer competitor nations; and the loss of vital skills in the domestic workforce. The overlap of external, macro-level pressures, and the net effect of these factors, create the need and urgency to leverage policy, authorities, and investments in the interest of national defense.

Congressionally added supplier development funding, Defense Production Act projects, and CARES Act investments have been critical levers and authorities to expand product lines and capacity to de-risk single sources in vulnerable and volatile shipbuilding market spaces. Beginning in fiscal year 2011, these funding streams have injected hundreds of millions of dollars into strategic supplier efforts to: (1) maximize productive capacity of single/sole sources, and (2) develop additional sources of supply to mitigate risk to the Navy enterprise. Separately, over the last 18 months and throughout the pandemic, CARES Act investments were targeted to-

wards two focus areas: (1) ensuring the continued viability of key, cross-platform vendors with the greatest impact to the greatest number of Navy programs, and (2) sustaining critical capability and capacity (both at the shipbuilder and heavy machining and fabrication levels) to support the 30-Year Shipbuilding Plan and Future Naval Force Structure goals.

In addition to infrastructure improvements, the Navy is focused on building resilient, sustainable workforce pipelines that match the investments being made into capability and capacity. In partnership with OUSD/Acquisition and Sustainment, Industrial Base Analysis and Sustainment office, there are several ongoing initiatives targeted at long-term stability and predictability between Navy demand signal and workforce/trades, particularly for critical skillsets in welding, pipefitting, and specialized machining.

The Navy is taking a more forward-looking approach to maintenance and modernization to provide stability to the industrial base, including contracting strategies that align workload with industrial base capacity. The Navy has been grouping ship maintenance and modernization contracts to provide long-term predictability, incentivize industry growth, and facilitate learning.

The Navy is also into its third year of the Shipyard Infrastructure Optimization Program (SIOP). Fully executed, SIOP will provide much needed recapitalization of CVN and SSN dry docks, new waterfront production facilities, improved facility layout, modernized machinery and support infrastructure that increase productivity and safety at the four public shipyards. These improvements will help ensure the efficient, timely and cost effective execution of scheduled maintenance availabilities.

VIRGINIA-CLASS SUBMARINE INDUSTRIAL BASE

2. Senator SHAHEEN. Secretary Harker, your testimony asserted that the *Virginia*-class fast-attack submarines have parts that are failing much sooner than expected. How is the Navy proactively identifying the quantity of "life-of-the-submarine" parts that require replacement and developing a sourcing strategy for the industrial base to prepare for this new demand signal?

Secretary HARKER. The *Virginia*-class submarine is still comparatively a quite young class. The lead ship of the *Virginia*-class submarines is still in its second major maintenance availability. As the major availabilities have been completed some components identified to last the life of the ship based on engineering analysis and testing were subject to degradation modes (e.g. complex galvanic interactions) that had not been predicted. The information collected on actual material condition during major maintenance availabilities is being fed back to the material modeling process and commercial suppliers to improve the modeling/reliability and those lessons are being incorporated into the next block procurement. This enables us to move from reactive to proactive replacement and improve material availability and sparing. Each availability provides an opportunity to refine, adjust and improve our ability to accurately forecast the required materials for maintenance availabilities.

3. Senator SHAHEEN. Secretary Harker, what is being done to efficiently identify the source of this unexpected degradation to parts that are not lasting for the lifetime of the submarine as expected?

Secretary HARKER. The Navy is still learning about the long-term reliability *Virginia*-class components. In fact, USS *Virginia* (SSN 774) is just now completing its second major maintenance availability which allows for additional information on component reliability.

Maintenance availabilities have identified that some components intended to last the life of the ship, based on engineering analysis and testing, were subject to degradation modes (e.g. complex galvanic interactions) that were not predicted. This was due to more severe temperature and moisture conditions than expected and operationally evolving environments which did not extend similarly from commercial applications for certain commercial off-the-shelf systems. The information collected on actual material condition during major maintenance availabilities is being incorporated into the material modeling process and provided to commercial suppliers to improve future reliability, and those lessons are being incorporated into the next block procurement and parts planning processes.

4. Senator SHAHEEN. Secretary Harker, what impact will the manufacturing limitations to replace and stock these parts, have on upcoming *Virginia*-class maintenance schedules and the submarine fleet's ability to execute operations and respond to national tasking?

Secretary HARKER. [Deleted.]

5. Senator SHAHEEN. Secretary Harker, what steps are being taken to make reliability improvements on the identified degraded parts for later blocks of the *Virginia*-class submarine?

Secretary HARKER. An organizational structure and team has been established to focus on in-service submarine reliability issues and solutions. The Navy's Reliability, Availability, Maintainability (RAM) -Integrated Product Team (IPT) is analyzing the reliability of over 70 systems and individual parts using data-driven models and tools. The RAM IPT has investigated root causes and began implementing solutions such as; improved fleet training, more robust component designs, better troubleshooting procedures, maintenance plan improvements, and improved onboard component stocking and design. These improvements are planned to be incorporated into *Columbia*-class and future *Virginia*-class Block V/VI contracts. Additionally, the Navy's Reliability Control Board facilitates prioritization of reliability issues based upon feedback from the Fleet. The RAM IPT and RCB initiatives have resulted in redesigns to improve reliability with solutions already fielded in the fleet:

- Impressed Current Cathodic Protection Non-pressure Hull Penetrators—Installation process difficult/susceptible to damage. Redesigned to simplify installation/improved reliability.
- CO2 Scrubber Compressor—Reliability lower than predicted due to unexpected operating environment. Redesigned compressor to improve reliability.
- Turbine Generator Magnetic Bearing—Earlier than anticipated failures. Several redesigned components to mitigate root cause of bearing failure.
- Vertical Launch System Outboard Cables—Early failures observed on Block I/II. Cable connector redesigned to address observed failure modes.
- Capstan Outboard Cables—Corroded connectors resulted in failures earlier than expected. Redesigned cable and minimized connectors to improve reliability.
- Outboard Cable Failures—Cables and connectors failed due to corrosion. Redesigned connectors to include coatings resulting in better reliability and resistance to flooding.

SMALL BUSINESS AND INNOVATION RESEARCH PROGRAM (SBIR)

6. Senator SHAHEEN. Secretary Harker, the SBIR program is a competitive acquisition process that provides the Department with vast authority to transition innovative technologies. Can you share how the Department of the Navy is using the SBIR program to advance modernization priorities across all warfare domains?

Secretary HARKER. The Department of the Navy (DON) recognizes the cutting edge work that is conducted by our small business partners and continues to view small businesses as vital to meeting the needs of Sailors and Marines, both today and in the future. Modernization is a long-standing priority of the DON Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) programs. Advancing modernization priorities through these programs starts with a topic that represents the needs of the Fleet and Force, for which innovative solutions are sought from domestic start-ups and small businesses. The DON SBIR/STTR topic development process ensures alignment of all topics with the National Defense Strategy (NDS), including modernization priorities, and captures input from seven DON Systems Commands representing needs across all warfare domains.

Since fiscal year 2020 the DON SBIR/STTR programs have tracked modernization as a category entitled "Modernize Key Capabilities" to identify NDS alignment. Currently, 134 topics are categorized as modernization priorities (40 percent of all topics since fiscal year 2020), from which the Program has awarded 406 Phase I contracts valued at over $60 million to small businesses to prove the feasibility of their innovative modernization solutions. To date, 52 of these Phase I awardees successfully have competed for and received Phase II contract awards to continue the development and testing of prototype technology. The value of these Phase II contracts is $21 million and growing.

Prior to fiscal year 2020, at least 78 topics had a direct impact on advancing modernization priorities, with the oldest topic dating back to fiscal year 2083. Collectively, these topics resulted in 182 Phase I awards valued at $19 million and 101 Phase II awards valued at $117 million. At the completion of Phase II, DON Program Executive Offices, labs, and Warfare Centers used Phase III authority to successfully commercialize 16 of these projects to advance modernization priorities. Phase III non-SBIR/STTR funding for these projects exceeds $222 million.

DON SBIR/STTR topic N05–149 is an example of how these programs have succeeded in advancing DON's modernization efforts. The objective of the topic was to use artificial intelligence (AI) to provide an operator with solutions to reduce manning. Specifically, the topic requested innovative solutions applicable to the evaluation of data sets used to process decision-making in the Ocean Battlespace Environ-

ment (e.g., littoral waters). This topic desired: exploration of using AI within the decision-making process; development of algorithms based on structural and human behavioral models, and heuristic inference rule sets, as well as numerical algorithms; evaluation of data sets used to process a decision; and incorporation of AI within the surface and subsurface tactical and operational decision process. Three small businesses received Phase I awards valued at a total of $299,000 and, at the end of Phase I, all three small businesses received Phase II awards valued at a total of $9.2 million. These same three small firms have received multiple Phase III contract awards totaling more than $49.2 million.

The DON SBIR/STTR programs have five objectives to deliver capability to our acquisition programs and the Fleet and Force. These objectives are: (1) stimulate technological innovation; (2) meet federal research & development (R&D) needs; (3) foster and encourage participation in innovation and entrepreneurship by women and socially or economically disadvantaged persons; (4) increase private sector commercialization of innovations derived from federal R&D funding; (5) and foster technology transfer through cooperative R&D between small businesses and research institutions. The DON SBIR/STTR programs are critical to meeting these objectives and advancing modernization priorities across all warfare domains.

QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

SHIPYARD MODERNIZATION

7. Senator HIRONO. Secretary Harker and Admiral Gilday, while I've been supportive of the Navy's Shipyard Infrastructure Optimization Plan (SIOP), I'm concerned about the timeline, cost overruns, and the capability, even with these upgrades, of maintaining a future larger fleet. I'd like to get you both on the record that construction of the new drydock at Pearl Harbor will begin in fiscal year 2023.

Secretary HARKER and Admiral GILDAY. The Navy has prioritized the construction requirement for Dry Dock 3 at Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility (P–209). In support of a contract award, the Navy must complete environmental impact studies and planning and design efforts. Construction is planned to be completed to support the submarine class maintenance plan.

8. Senator HIRONO. Admiral Gilday, I'm concerned that even after the upgrades to the four public shipyards, we're going to barely meet maintenance demands for the current fleet of 296 ships, let alone a future larger fleet of potentially 355 ships or more. How is the Navy planning to meet the demands of a larger fleet in the future?

Admiral GILDAY. The shipyard maintenance enterprise is transforming how the shipyards do business to create more production capacity and improve productivity to deliver submarines and aircraft carriers out of maintenance availabilities on-time. Naval Sustainment Systems—Shipyards (NSS–SY) is an all-shipyards, all-hands effort that deploys industry and government best practices across the four public shipyards to eliminate variability, increase throughput and improve production efficiencies. NSS–SY seeks to identify methods for rapid development in these areas, test these methods and, if successful, share these methods across all four shipyards.

NSS–SY is challenging Navy leadership at the highest levels to identify and collaborate on solutions to Navy-wide problems that have the greatest impacts on the shipyards. Naval Sea Systems Command (NAVSEA) created the NAVSEA Transformation Office (NTO), led by the Commander, NAVSEA, to oversee the NSS–SY effort using nine pillars for success—planning, engineering, material, waterfront operations, shipyard resourcing, shipyard infrastructure, inside shop, fleet operations, and information technology. Each pillar has a flag officer or SES leading the efforts. Pillar leads are focused on executing those changes that, ultimately, allow our mechanics at the waterfront and on the shop floor to do their job with maximum efficiency and minimal interruption..

The Navy is also into its third year of the Shipyard Infrastructure Optimization Program (SIOP). Fully executed, SIOP will deliver required dry dock repairs and upgrades to support both current and future classes of ships, optimize workflow within the shipyards through significant changes to their physical layout, and recapitalize obsolete capital equipment with modern machines that will increase productivity and safety. The program is currently working a comprehensive plan on the feasibility and ability to accelerate SIOP implementation.

Combined, SIOP and NSS–SY will fundamentally shift how the Navy plans and executes major submarine and aircraft carrier maintenance availabilities to dramatically improve their on-time delivery to the Fleet today and into the future.

AMPHIBIOUS WARSHIP ACQUISITION AND AVAILABILITY

9. Senator HIRONO. Secretary Harker, last year the Navy received Congressional authority to make a block buy of four amphibious ships that would save the taxpayers $750 million dollars, but this year's budget doesn't execute that authority. These ships provide a competitive advantage, particularly in the Pacific, and I am concerned about amphibious ship availability, especially given the loss to fire last summer of the USS *Bonhomme Richard.* Why is the Navy not taking advantage of the cost savings efforts Congress provided it in last year's National Defense Authorization Act?

Secretary HARKER. The Department of Defense supports smart acquisition strategies and is committed to achieving best value possible. Traditional amphibious ship requirements are undergoing analysis to ensure a balance between operational requirements and fiscal constraints. The Department is reviewing the plan for the procurement of LPDs and LHAs closely and will pursue a responsible plan for the timely procurement of these platforms.

10. Senator HIRONO. General Berger, how does the burning of the USS *Bonhomme Richard* and the decision to not execute the block buy impact the Marine Corps' ability to deter Chinese aggression in the Indo-Pacific?

General BERGER. USS *Bonhomme Richard* (LHD 6) was decommissioned in April 2021, after 22 years of service, due to a fire which occurred on 12 July 2020. The unplanned decommissioning of LHD 6 resulted in the loss of a Joint Strike Fighter capable Amphibious Assault Ship as the cornerstone of the Amphibious Ready Group/Marine Expeditionary Unit (ARG/MEU). The loss pressured other LHD/ LHA ships to meet Global Force Management deployments and affected maintenance and modernization schedules.

Short-term impacts to ARG/MEU generation are mitigated by accelerating the USS *Tripoli* (LHA 7) Post Delivery Test and Trials period to prepare, and certify, the ship for deployment in fiscal year 2022.

Long-term impacts to the LHD/LHA inventory cannot be mitigated without future procurement of additional ships. LHA 9 is estimated to start construction in fiscal year 2023. When the Department is certain it will procure specific vessels on a particular timeframe, block-buy contracts can be a valuable tool to reduce costs and delivery delays and support the industrial base with a clear demand signal. However, the Department is still reviewing amphibious ship requirements, and committing to a block-buy is premature at this time until inventory objectives are established. The Marine Corps appreciates your support for these ships in future budget requests.

11. Senator HIRONO. Secretary Harker and Admiral Gilday, has the investigation into the burning of the USS *Bonhomme Richard* completed and if so, what are the results?

Secretary HARKER. and Admiral GILDAY. The investigation remains open. All substantive investigative activity is complete. The investigation is pending an Article 32 hearing. The convening authority is Commander 3rd Fleet.

12. Senator HIRONO. Secretary Harker and Admiral Gilday, how does the Navy intend to replace the gap in amphibious ship availability that was created by the burning of the USS *Bonhomme Richard*?

Secretary HARKER. and Admiral GILDAY. The decommissioning of USS *Bonhomme Richard* resulted in the loss of her fiscal year 2022 deployment and fiscal year 2023 sustainment/surge availability period. Prior to the fire, the Navy was tasked to maintain the prescribed Amphibious Readiness Group Immediate Response Force as outlined by the Secretary of Defense (SecDef). To maintain that posture, the following actions have been taken:

- USS *Tripoli* (LHA 7) schedule was accelerated to take the place of USS *Bonhomme Richard.*
- USS *Makin Island* (LHD 8) schedule accelerated to mitigate the USS *Tripoli* schedule change, resulting in a de-scoped maintenance period to meet the new timeline.
- USS *Essex* (LHD 2) fiscal year 2021 deployment was delayed in order to better align with rotational requirements.

The Navy's planned mitigations meet all requirements as outlined by the SecDef. Additionally, we continue to support the LHA program. In addition to USS *Tripoli's* delivery to the fleet in fiscal year 2020, USS *Bougainville* (LHA 8) is under construction and scheduled to deliver in fiscal year 2025.

VIRGINIA-CLASS ATTACK SUBMARINE PROCUREMENT ISSUES

13. Senator HIRONO. Secretary Harker and Admiral Gilday, the private shipyards are currently running 12–18 months behind delivery dates for the Block IV *Virginia*-class attack submarines. It appears this has led to increasing the cost estimates for Block IV boats yet to be delivered, cost and schedule increases for all of the future larger Block V boats, and potentially cost increases for the boats in the *Columbia* strategic missile program. What is wrong with the attack submarine production programs?

Secretary HARKER and Admiral GILDAY. Submarine industrial base performance remains challenged in achieving steady state delivery of two boats per year. Improving this performance is essential for *Virginia*-class (VCS) Block IV schedule recovery, VCS Block V foundational success, and concurrent *Columbia*-class construction. The Navy continues to closely monitor labor hours and schedule performance and is working to address the negative impact of COVID–19 on supply base performance, production schedules, and planned staffing growth.

14. Senator HIRONO. Secretary Harker and Admiral Gilday, what are the private shipyards proposing to solve the problems?

Secretary HARKER and Admiral GILDAY. The Navy has completed a detailed assessment of the integrated VCS and *Columbia*-class schedules to ensure an achievable plan supporting *Columbia* as the #1 Navy acquisition priority. We are working with the private shipyards to make improvements in on-time and quality material delivery, and are taking steps to address production cadence and cost performance, such as shifting work between shipyards to better manage labor and footprint constraints, and increasing the quantity of strategically outsourced components and hours to the supplier base, allowing the shipbuilders to focus more on their core work. The Department is also updating and enhancing detailed VCS production schedules with an Enterprise perspective to ensure integration yard-wide with construction and maintenance activities, facility usage, and strategic outsourcing to avoid resource conflicts.

15. Senator HIRONO. Secretary Harker and Admiral Gilday, what steps is the Navy planning to take to get the cost overruns and schedule delays back under control?

Secretary HARKER and Admiral GILDAY. The Navy has completed a detailed assessment of the integrated VCS and *Columbia*-class schedules and is working to ensure an achievable plan to deliver to a schedule and cadence of two VCS per year in accordance with Congressional authorizations and appropriations. By taking steps to improve the governance structure and align the Enterprise Business Strategy on key issues and assumptions, the Department will ensure that starting construction on the next VCS will not adversely impact *Columbia.* The Navy has implemented Construction Readiness Reviews , quarterly cost and schedule reviews, and monthly executive leadership reviews to ensure alignment between programs and quickly address challenges.

ISSUES WITH SPARE PARTS AVAILABILITY FOR THE *VIRGINIA*-CLASS ATTACK SUBMARINE

16. Senator HIRONO. Admiral Gilday, according to recent news reports, the Navy has swapped out over 1,600 parts among its *Virginia*-class attack subs since 2013 to avoid maintenance bottlenecks as components that were supposed to last for decades wear out sooner than anticipated—adding extra workload to an already stressed system and additional risk that the parts could be damaged during the extra steps. I'm concerned the Navy is not investing enough in maintenance, supply chains, and shipyard infrastructure—what can you tell me about the efforts to mitigate the shortage in spare parts for the *Virginia*-class subs?

Admiral GILDAY. Beginning in 2017, to mitigate the shortage in spare parts for the *Virginia*-class, the Navy implemented a new process that leverages all adjacent business processes in order to produce a robust and highly credible material forecast for *Virginia*-class submarine depot level maintenance. The improved material analytics and forecasting will improve overall material requirements identification, ordering, and parts availability.

Additionally, the Navy's various stakeholders including Naval Sea Systems Command (NAVSEA), Naval Supply Systems Command Weapons Systems Support (NAVSUP WSS), Defense Logistics Agency (DLA), In Service Engineering Agents (ISEAs), and Technical Authorities are working together through root cause analysis to identify potential short and long term issues and corrective actions for cannibalizations (swapping parts between hulls) to improve submarine fleet support and operational availability. One long term solution set is for cannibalizations to be

included in the material forecasting process for submarine availabilities. Additionally, NAVSEA and stakeholders are submitting candidates for potential provisioning adjustments, based on the current demand and stakeholder determined essentiality/criticality of each item.

17. Senator HIRONO. Admiral Gilday, has the Navy conducted a root cause analysis to determine why many of these components are wearing out sooner than anticipated?

Admiral GILDAY. Yes. As a result of the Navy's root cause analysis, an organizational structure and team has been put in place to focus on in-service submarine reliability issues and solutions. The Navy's Reliability, Availability, Maintainability (RAM) Integrated Product Team (IPT) is analyzing the reliability of over 70 systems and individual parts using data-driven models and tools. The RAM IPT has investigated root causes and identified solutions such as: improved fleet training, more robust component designs, better troubleshooting procedures, maintenance plan improvements, and improved onboard component stocking and design improvements, which are planned for incorporation into *Columbia*-class and the next block of *Virginia*-class submarines. Additionally, the Navy's Reliability Control Board facilitates prioritization of reliability issues based upon feedback from the Fleet.

ISSUES WITH SUBMARINE MAINTENANCE AT PRIVATE SHIPYARDS

18. Senator HIRONO. Admiral Gilday, the Navy has turned to private shipyards in recent years to assist with ongoing maintenance delays for our attack submarines which are usually serviced at our four public shipyards. Can you give me a progress update on the expected completion of the maintenance availabilities for several of the *Los Angeles*-class boats currently at Newport News Shipbuilding (USS *Helena,* USS *Columbus,* and USS *Boise*)?

Admiral GILDAY. The following is the status of current private yard submarine maintenance schedules:

- USS *Helena's* (SSN 725) Dry-Docking Selected Restricted Availability is underway and projected to complete in October 2021 with a total duration of approximately 48 months.
- USS *Columbus* (SSN 762) is undergoing an Engineered Overhaul (EOH) and after rebaselining the availability we expect deliver in September 2021; which has exceed its previously planned duration of 60 months.
- USS *Boise* (SSN 764) began a "smart start" for its EOH in May 2020, ahead of its planned fiscal year 2022 official start. The availability duration and end date is subject to negotiation as part of the contract award.

19. Senator HIRONO. Admiral Gilday, why is the maintenance backlog occurring at Newport News Shipbuilding?

Admiral GILDAY. Both nuclear-qualified private shipyards have experienced challenges in re-building their repair capabilities.

HII–NNS is currently coming through its efforts to re-instate the requisite processes, policies, procedures, and skills required to properly execute complex submarines maintenance availabilities. Shortfalls in SUBSAFE maintenance processes, policies, procedures, and skills at HII–NNS contributed to the *Helena* and *Columbus* delays and have directly impacted all availabilities in planning and execution.

20. Senator HIRONO. Admiral Gilday, what steps is the Navy taking to ensure in the future these delays at private shipyard submarine availabilities are eliminated?

Admiral GILDAY. Background: Between fiscal years 2015–2018, NAVSEA awarded four submarine maintenance availability contracts to the two nuclear qualified Private Shipyards, including one Interim Dry Docking (USS *Montpelier* (SSN 765)), one Docking Selected Restricted Availability (USS *Helena* (SSN 725)), and two Engineered Overhauls (USS *Columbus* (SSN 762) and USS *Boise* (SSN 764)). These contracts were structured primarily as Cost Plus Fixed Fee (CPFF) Level of Effort (LOE) with a Firm Fixed Price (FFP) contract line item number (CLIN) for execution services in support of the CPFF CLINs. The Navy based its use of FFP CLINs for execution services on the reasonable definite nature of the execution service requirements, under which the contracting officer could establish a fair and reasonable price at the outset. Issues arose during performance under this contract structure largely related to uncertainty as to the vessels' conditions at the time of contract award. This led to increased costs and duration, and revealed separate understandings of the FFP scope and its relation to the CPFF LOE scope. To better align the contracts to the Navy's schedule and quality objectives, the Navy and contractor agreed to restructure the FFP CLINs to CPFF LOE CLINs and link the contractor's

fee/profit objectives to incentives that require engineering, material, and production value stream improvements and schedule adherence on the USS *Helena* and USS *Columbus* availabilities. To achieve these same objectives, the Navy and contractor agreed to utilize a Cost Plus Incentive Fee (CPIF) completion contract with incentives on USS *Boise* execution work.

Way Ahead: The Navy is taking a new approach to submarine maintenance availability contracts based on lessons learned from recent submarine availabilities and incorporating best practices from the Aircraft Carrier Refueling Complex Overhauls (RCOHs) accomplished by the Private Shipyards, including the following.

- Eliminating FFP CLINs from submarine maintenance availability contracts;
- Splitting planning phase (CPFF LOE) from execution phase (CPIF Completion);
- Managing LOE tasking strictly with Technical Instructions;
- Awarding longer planning durations (20 months);
- Invoking proven Public Shipyard processes into Private Shipyard planning contracts to improve contractor performance (e.g. Resource Loaded Integrated Master Schedule, Task Group Instruction (TGI) development, Integrated Project Team Development (IPTD) curricula, and performance metrics)
- Invoking and incentivizing Cost Data Sheet (CDS) mutual agreement process to align contractor schedules and proposals with government/contractor mutually agreed to scope of work;
- Conducting planning product reviews by the Navy;
- Positioning retired Public Shipyard Subject Matter Experts on-site; and
- Instituting EVMS within the execution contract.

The USS *Hartford* (SSN 768) EOH is the first availability to start on this new path. The Navy awarded the planning contract in August 2020. The Navy will not realize the benefits of this new approach fully until the availabilities incorporating this new approach are completed.

21. Senator HIRONO. Admiral Gilday, my understanding is Newport News Shipbuilding has told the Navy that attempting to prepare for or to be servicing three submarines at once is too many to handle at any given time. Is that accurate?

Admiral GILDAY. The Navy, while unaware of any specific statements Newport News Shipbuilding may have made regarding their submarine fleet in-service repair capacity, agrees with that assessment.

22. Senator HIRONO. Admiral Gilday, a March 2021 Congressional Budget Office Report stated required maintenance for submarines is projected to exceed the capacity of the Navy's shipyards in 25 of the next 30 years. Beyond the SIOP, which is focused on the Navy's public shipyards, what steps is the Navy taking to increase submarine repair capacity/efficiency at private shipyards?

Admiral GILDAY. Navy continues to help our private industry partners improve their processes, policies, procedures and skills for the on-going and upcoming availabilities—USS *Helena* (SSN 725) Docking Selected Restricted Availability, USS *Columbus* (SSN 762) Engineered Overhaul (EOH), USS *Boise* (SSN 764) EOH, and USS *Hartford* (SSN 768) EOH.

In addition to placing submarine maintenance subject matter experts on site at both HII–NNS and GDEB, Navy has converted the *Columbus* EOH to a CPFF/LOE with special incentives, awarded the *Hartford* smart start contract, and continues to develop both the *Boise* and Hartford EOH CPIF contracts, both expected to be awarded in fiscal year 2022.

These efforts align private industry and Navy's desired outcomes while incentivizing high quality and on time completion of our valuable Fleet assets.

ACQUISITION OF LIGHT AMPHIBIOUS WARSHIPS (LAWS)

23. Senator HIRONO. Admiral Gilday and General Berger, I know the Navy and Marine Corps are planning to procure approximately 30 vessels of a new class, the Light Amphibious Warship (LAW), to support Expeditionary Advanced Base Operations to deter Chinese aggression in the Indo-Pacific. What will be your acquisition strategy for acquiring the Light Amphibious Warship?

Admiral GILDAY. The Navy has aggressively developed requirements and has an approved Acquisition Strategy / Acquisition Plan in support of a 2023 procurement and a 2026 delivery of the first Light Amphibious Warship (LAW). The LAW Acquisition Plan is to award two contracts, one for Concept Studies/ Preliminary Design (CS/PD) followed by a Detailed Design and Construction (DD&C) contract for the lead ship. The Navy awarded the CS/PD contract in June 2021. The DD&C contract will be a full and open competition with the Request for Proposal scheduled for release in 2nd quarter of fiscal year 2022 and an expected award in early fiscal year

2023. The first contract will include the lead ship with options for up to eight follow ships. The strategy procurement of the remaining ships of the class is still being evaluated by the Navy.

General BERGER. The Navy is conducting an Analysis of Alternatives and will commence with Concept Studies and Preliminary Design to evaluate a new medium intra-theater amphibious ship. Studies will primarily focus on commercial designs tailored for military application to enable maneuver and mobility for our integrated naval forces conducting Distributed Maritime Operations. The Department is driving towards a lead ship contract award in fiscal year 2023 that will support the Marine Corps' future Marine Littoral Regiments in the Indo-Pacific region. The Light Amphibious Warship is complementary to traditional large amphibious ships; both types of ships are required to deliver Marine Corps forces to expeditionary locations.

The current requirement, after a deliberate analysis process, is 35 LAWs and would support three future Marine Littoral Regiments. Within the constraints of the current fiscal reality, we will work together with the Navy to prioritize the acquisition strategy to provide the Naval Expeditionary Force with the best value in platform capability and capacity.

24. Senator HIRONO. Admiral Gilday and General Berger, will you be following a methodical approach, paying adequate attention to good systems engineering principles to ensure the propulsion plant and electrical generators are reliable before construction to avoid some of the pitfalls of previous classes of ships like the LCS?

Admiral GILDAY. The LAW design will adhere to best practices and systems engineering principles and will follow all of the rigorous Naval Sea Systems Command Design Review processes. The vessel design, based on existing parent designs, will leverage mature commercial technologies with proven reliability. To validate equipment reliability prior to construction, the program plans to leverage efforts regarding propulsion plant and electrical generation system component reliability from other programs such as the Medium/Large Unmanned Surface Vessel (USV) programs. To that end, the Navy has already initiated a study to identify opportunities for LAW to exploit on-going efforts for a Land Base Test Site (LBTS) for the Medium/Large USV programs. Additionally, LAW system specifications will be written to drive the vessel design towards simple but effective systems that minimize required maintenance and are designed for ease of maintainability.

General BERGER. Yes, sound systems engineering principles and a methodical approach will be used for the acquisition of Light Amphibious Warships (LAWs). The Marine Corps works in concert with the Navy on amphibious ship requirements.

BUDGET REQUEST ONLY INCLUDES ONE DESTROYER

25. Senator HIRONO. Secretary Harker and Admiral Gilday, the National Defense Authorization Act for Fiscal Year 2018 set as policy a 355-ship Navy—right now, we have 296 ships. Looking at this year's budget, the Navy's topline only increased by 2 percent, with most of that going to the Marine Corps. Only 8 new ships are budgeted out of the 12 ships that were expected. Most impactful was one less destroyer than originally planned as part of a multi-year contract meant to save taxpayer money—in fact, by breaking the contract, we'll have to pay a $33 million dollar penalty. Given our strategic shift to the Pacific and the importance of the Navy in deterring the rising threat of China, how did the Department come to the decision to cut the second destroyer?

Secretary HARKER and Admiral GILDAY. Destroyers play an important role in the Navy's capability and capacity to deter China. As we developed the fiscal year 2022 budget, we had to balance our investments across readiness, capability, and capacity and it was a very difficult funding decision to not include the second destroyer in fiscal year 2022 due to affordability. Our goal remains to field the best, most capable, and most lethal fleet we can within the limits of available resources.

26. Senator HIRONO. Secretary Harker, I am very disappointed that the Department has submitted a budget that would call for breaking the terms of the multiyear procurement of the Aegis destroyers. From your perspective, what kind of message does breaking multi-year contracts send to our industrial base and do you think actions like this incentivize Congress to provide the Department the authority to enter into multi-year contracts moving forward?

Secretary HARKER. The Navy has been using multi-year procurement (MYP) authority with the support of Congress to efficiently procure DDG 51 destroyers in quantities that support stable production and a healthy industrial base. Over the course of the fiscal year 2018–2022 MYP, the Navy will procure a total of 11 Flight

III DDGs, more than the original ten ship procurement. The Navy continues to support the use of MYP contracts for procuring DDG 51 class ships.

SEXUAL ASSAULT AND HARASSMENT

27. Senator HIRONO. Admiral Gilday and General Berger, eliminating the scourge of sexual misconduct within the ranks is a top priority—I've been a vocal supporter of removing the chain of command from the court-martial decision-making process in cases of sexual assault and sexual harassment because I think it will increase victim trust and remove perceived conflicts of interest. How do you view these proposals?

Admiral GILDAY. The Secretary of Defense directed the Department of Defense to work with Congress to amend the UCMJ to remove prosecution of sexual assaults, domestic violence, and related crimes from the chain of command and create dedicated offices within each military department to handle the prosecution of these special crimes. The Navy and the Marine Corps are fully committed to working towards the successful implementation of these efforts and the additional reforms from the Secretary's initiatives following the 90-day Independent Review Commission's recommendations on sexual assault and sexual harassment. As the Secretary has stated, creating enduring change will require a comprehensive approach across multiple lines of effort, and these changes must be well-designed for successful implementation. It is imperative that we have a military justice system that is effective, trustworthy and fair, and one that functions in an operational and forward deployed environment.

General BERGER. The Secretary of Defense directed the Department of Defense to work with Congress to amend the UCMJ to remove prosecution of sexual assaults, domestic violence, and related crimes from the chain of command and create dedicated offices within each military department to handle the prosecution of these special crimes. The Navy and the Marine Corps are fully committed to working towards the successful implementation of these efforts and the additional reforms from the Secretary's initiatives following the 90-day Independent Review Commission's recommendations on sexual assault and sexual harassment. As the Secretary has stated, creating enduring change will require a comprehensive approach across multiple lines of effort, and these changes must be well-designed for successful implementation. It is imperative that we have a military justice system that is effective, trustworthy and fair, and one that functions in an operational and forward deployed environment.

28. Senator HIRONO. Secretary Harker, I was happy to see the Department of the Navy request more money in the President's Budget for sexual assault prevention this year—what steps is the Navy taking on the prevention front and how are you communicating to your sailors and marines on this important issue?

Secretary HARKER. The Department of the Navy (DON) is further growing our capacity to address prevention through the establishment of a dedicated prevention workforce and increasing civilian staff at the Headquarters level to improve oversight of the efforts of the Navy and Marine Corps.

Integrated Prevention Specialists will lead and support strategic prevention efforts at both the Headquarters and Service levels, including embedded within deployed and afloat units. This workforce will address cross-cutting prevention and will enhance primary prevention strategy and capability across thefleet.

The prevention workforce's role is reducing negative behaviors and supporting higher-risk populations through assessing for needed training enhancements, and promoting skill-building in healthy professional and personal relationships. Establishing a dedicated integrated prevention workforce was a key recommendation of the Independent Review Commission on Sexual Assault and Sexual Harassment in the Military, and the DON's efforts were already underway.

The DON engages sailors and marines in prevention efforts through training and leadership development initiatives, and will work to incorporate prevention strategies, skill-building, and prevention throughout the military career cycle. In addition, the DON has developed and disseminated tools to command to increase leader ownership for recognizing and addressing emerging negative behaviors.

For example, in April 2021 the DON launched The Watch List: Top 5 Signals of Risk for Sexual Assault. This evidence-driven tool promotes unit-level engagement, increasing awareness of behaviors and attitudes that indicate when marines and sailors are at higher risk for sexual assault. This fall, we will roll out realistic training scenarios and resources to support first-line leaders and their teams in practicing how to best respond when faced with emerging negative behaviors.

DIVERSITY AND INCLUSION

29. Senator HIRONO. Secretary Harker and Admiral Gilday, I was happy to see the establishment of Task Force One Navy following the murder of George Floyd last year—in the military, it's especially important to enhance diversity and foster a culture of inclusion in the ranks. Following the results of Task Force One Navy, what steps is the Navy taking to bolster diversity within the senior ranks?

Secretary HARKER and Admiral GILDAY. The Department of the Navy (DON) is committed to attracting, recruiting, retaining, and developing a pipeline of diverse military talent. We continue to review and revise our policies to better support our workforce and advance our diversity initiatives.

While the U.S. Navy is implementing the strategy to operationalize the Task Force One Navy (TF1N) final report recommendations, the DON has established a team, led by a Diversity, Equity and Inclusions (DE&I) Highly Qualified Expert, to build on the TF1N framework, and develop our strategic vision, Implementation Strategy, Governance and organizational structure for an enterprise DE&I program. The focus is to create an enduring and measurable program that champions signature leadership behaviors with linkage to culture and in alignment with OSD.

The DON DE&I framework will leverage a number of indicators within our talent management systems to establish demographic trend analysis to more effectively address diversity issues throughout the entire human capital pipeline.

GENDER INTEGRATION AT MARINE CORPS BOOT CAMP

30. Senator HIRONO. General Berger, the National Defense Authorization Act for Fiscal Year 2020 required the Marine Corps to integrate boot camps on the East and West coast by 2025 and 2028, respectively—this is an important step in my opinion to ensure women are viewed equally from the outset in their Marine Corps careers. What can you tell me about the progress of this effort and specifically, whether the Marine Corps is integrating these units down to the platoon level?

General BERGER. The Marine Corps is on track to meet the timelines associated with Fiscal Year 2020 National Defense Authorization Act (NDAA). The Marine Corps is using a proven model that adheres to 10 USC 8431 and maximizes unit cohesion, accountability, equity, diversity, and sustainability for both the recruits and drill instructors.

The service has a 5 year Integration Build Plan. In fiscal year 2022, MCRD SD will execute three sequential iterations of integrated recruit training followed by 12 iterations in fiscal year 2023. By the end of fiscal year 2024, MCRD SD will achieve initial operational capable (IOC), defined as training companies manned, training approximately 50 percent of all female accessions, but will still require externally sourced experienced female DIs. By the end of fiscal year 2026, MCRD SD will achieve Fully Operational Capable, defined as self-sustaining and not requiring external experienced female DIs. MCRD Parris Island will achieve the NDAA 2020 requirements in fiscal year 2024.

The Marine Corps is integrating genders at the company level, however, it is not integrating genders within platoons and below. Mandating platoon-level gender integration at recruit training will be to the detriment of female Marines during the critical entry-level transformation process. In the career force, it will significantly reduce billet opportunities as compared to their male counterparts. A detailed explanation has previously been provided to Congress.

QUESTIONS SUBMITTED BY SENATOR GARY PETERS

EDUCATION

31. Senator PETERS. Secretary Harker and Admiral Gilday, in 2019, Acting Secretary Modly began implementing parts of the Education for Seapower (E4S) initiative by breaking ground on the Naval Community College (USNCC) and hiring John Kroeger to serve as the Department's first Chief Learning Officer (CLO). USNCC has since begun its first pilot program and projects growth for fiscal year 2022—this is good news—but other aspects of E4S appear to have languished. The budget request notes that "[a]s Naval Leadership seeks to address the balance between future force structure, current readiness requirements, and warfighter development, a reexamination of the Navy Education for Seapower strategy has been undertaken." Please detail this reexamination, to include its timeline and projected completion, as well as the process by which it is assessing E4S.

Secretary HARKER and Admiral GILDAY. The Office of the Assistant Secretary of the Navy (Manpower and Reserve Affairs) (OASN (M&RA)) began a reexamination

of the Department of the Navy (DON) Education for Seapower (E4S) Strategy 2020 in May 2021. The initial review indicated that we needed to update our education strategy to provide clear guidance for naval education. On June 30, 2021, OASN (M&RA) convened a working group of stakeholders from throughout the DON to review and provide recommendations to update the E4S Strategy. The working group is examining the overall strategy, including its education objectives, implementation plan, and clarity. The working group will provide ASN (M&RA) with a draft naval education strategy by October 2021.

32. Senator PETERS. Secretary Harker, the CLO position was created to lead and unify all Navy and Marine Corps formal education programs. Given that it has been vacant for a year, is its purpose no longer a priority for the Department?

Secretary HARKER. Education remains a priority for the Department. The Department of the Navy has made great progress in enhancing education opportunities and programs since the Education for Seapower initiative began in 2019. I assigned the responsibility for all naval education to the Assistant Secretary of the Navy (Manpower and Reserve Affairs) (ASN (M&RA)) in November 2020, which includes responsibilities previously delegated to the Chief Learning Officer. I work closely with ASN (M&RA) to continue the Department's efforts to improve and modernize Navy and Marine Corps education programs.

33. Senator PETERS. Secretary Harker and Admiral Gilday, the Department's budget request decreases funding for tuition assistance, citing its "reexamination of the Navy Education for Seapower strategy." Please expand on this rationale.

Secretary HARKER and Admiral GILDAY. To improve Sailor and Marine education opportunities, the Navy is implementing a consistent 18 credit hour limit per Sailor and Marine, per year, for the tuition assistance (TA) program beginning in fiscal year 2022, consistent with Department of Defense policy and guidance. TA usage and required funding continues to be monitored, as we implement this policy. Accordingly, the Services have specific eligibility criteria to manage available TA funds.

TALENT MANAGEMENT

34. Senator PETERS. Admiral Gilday, in an article titled "Use Sailors' Hidden Skills" from the June 2021 issue of Proceedings, Petty Officer 1st Class Michael Amenti argues that the Navy can do better to leverage Sailors' skills and abilities unrelated to their ratings. Do you share this view, and if so, how are you setting the conditions for this approach in policy and in practice amongst commands?

Admiral GILDAY. Navy agrees with the author's assessment that we have "the best sailors in the world, and its leaders should recognize and use every ounce of their potential." As alluded to by the author, since 2015, we have been on a journey to bring our talent management processes, policies, and programs into the 21st century by enabling better "talent to task" matching at scale, greater career flexibility, modernized and portable training delivery, and incentives (monetary and non-monetary), which keep pace with market forces.

One of these initiatives is Ready Relevant Learning (RRL) which fundamentally changes the way our Sailors train, transforming industrial-era, conveyer-belt training into a modern, proactive system by providing Sailors with the right training, at the right time, to maximize their ability to operate across the spectrum of strategic competition and ultimately prevail in a high-end fight. Through a career-long learning continuum, RRL delivers training at the most appropriate time in a Sailor's career, while providing a detailed learning roadmap for every Navy career, covering technical, professional, and leadership training that is tightly linked to needs of the Fleet.

Additionally, we are improving Fleet readiness and manning through better distribution of talent. We continue to expand our Talent Marketplace, creating a modern, flexible, and transparent assignment process that better balances a Sailor's assignment, location, talents, and advancement opportunities with Navy's mission and operational needs.

Accordingly, MyNavy Assignment (MNA) has replaced the Career Management System-Interactive Detailing and delivers a modern interface and user-friendly experience for our Sailors with expanded visibility into jobs. This includes ready access to features such as Sailor Resume, Job Bookmarking, the Sailor Application Lifecycle Tracker, enhanced Projected Rotation Date modification request routing, and associated incentives for a particular job.

Finally, in 2018, we introduced Advancement-to-Position (A2P) as a pilot program to incentivize service in priority or hard-to-fill billets across the Fleet by linking

service in the position to advancement to the next paygrade. We permanently established the journeyman-level A2P (E–6 positions), which allows qualified E–5s to fill priority E–6 positions identified within MNA and receive a permanent advancement incentive.

We understand that there is intense competition for talent in our country, and in light of rapidly evolving tactical and technical landscapes, we are modernizing and enhancing our entire talent management approach to increase Fleet readiness and lethality to win at long term strategic competition.

QUESTIONS SUBMITTED BY SENATOR TAMMY DUCKWORTH

BUILDING PARTNERSHIPS IN THE INDO-PACIFIC REGION

35. Senator DUCKWORTH. General Berger, our alliances and partnerships provide the United States with a clear asymmetric advantage against potential adversaries. However, we cannot build trust and interoperability with our maritime allies and partners from a distance. Nor can we contest malign activities without having a presence on the ground in the region. Bottom-line: enhancing relationships increases deterrence and opens doors to the access we need to compete in the region. But as we prioritize resources for modernization, we risk underinvesting in opportunities to build military to military relationships in the region.

General Berger, how will the Marine Corps balance the need to invest in modernization with resourcing critical readiness and mil-to-mil initiatives with our partners and allies, particularly in the Indo-Pacific Region?

General BERGER. The Fiscal Year 2022 President's Budget continues to prioritize Force Design innovations as the way forward in modernizing and training the Marine Corps for the future fight while at the same time maintaining a high level of readiness as the Nation's crisis response force. A key component of our ability to persist and operate forward is maintaining close military to military relationships with our partners and allies—particularly in the Indo-Pacific region. In our PB22 submission we have balanced the requirements of readiness and mil to mil engagement with investments in the future.

A critical element of this budgetary balancing continues to be the divestment of legacy capabilities that do not meet future requirements and reallocating resources into capabilities needed to build expeditionary naval power in support of the joint force. fiscal year 2022 reform initiatives generated $1.4B from policy reforms, direct divestment, and business process/system improvements to reallocate into Force Design initiatives that modernize and increase the lethality of the Marine Corps, supporting readiness both now and in the future. Investments include long range precision fires, advanced command, control and sensing capabilities as well as unmanned systems.

We have also ensured continued investment in our Fleet Marine Forces in the Indo-Pacific Region. This investment includes the development of permanent capabilities on Guam and continued presence in Australia, Korea and Japan. We continue to deepen relationships with the armed forces of the Philippines, France, Thailand, Singapore, Malaysia, Indonesia and New Zealand. Additionally, we are developing new opportunities with Vietnam. Indo-Pacific theater training exercises such as IRON FIST, VALIANT MARK, RIMPAC, KAMANDAG, SSANG YONG and TALISMAN SABRE continue our current efforts to strengthen our network of allies and partners. We have also successfully deployed a full squadron of F–35Bs aboard HMS Queen Elizabeth II on her maiden voyage to the Indo-Pacific theater, an important demonstration of power projection and interoperability with a key ally.

A critical enabler to our forward presence, exercise participation, and partnership development is organic lift aboard amphibious shipping. This is a joint capability that enables Littoral Operations in a Contested Environment, Expeditionary Advanced Base Operations (EABO), and Distributed Maritime Operations (DMO). The EABO and DMO are keys to effective integrated deterrence and to creating a competitive advantage over our pacing threat.

Our persistent forward presence in the Indo-Pacific region, along with Force Design modernization investment, increases interoperability and further builds partner capabilities.

Together, these efforts are critical to maintaining our role as the Nation's naval expeditionary force-in-readiness and the leading edge of the joint force.

INDO-PACIFIC FORCE POSTURE

36. Senator DUCKWORTH. General Berger, what additional resources are needed to ensure the Marine Corps has the right balance of dispersed and distributed forces

in the Indo-Pacific to work with our allies and partners and deter potential adversaries?

General BERGER. In addition to Marine programs, the Marine Corps' success of ground modernization is also predicated on Navy shipbuilding programs. The vast Indo-Pacific region is ideally suited for naval expeditionary forces persistently operating forward to assure allies and partners and deter malign behavior from China. Amphibious warfare ships allow the United States to position forces forward in international waters with Marines poised and ready to conduct a wide range of missions supporting the fleet commander's campaign and national interests. Authorizing and appropriating amphibious ships in future budget requests will ensure we have the right ships available for operational tasking in a distributed maritime environment.

Littoral maneuver, the ability to move at will throughout the littoral archipelago, is a key capability for our employment objectives. Through analytic rigor, the Navy and Marine Corps determined that building the Light Amphibious Warship (LAW) is the best solution to this maneuver gap. The LAW, which is a new class of warship, will complement existing traditional amphibious warships and provide added surface mobility and survivability for Marine Corps forces. These functions will be critical to the Marine Corps' ability to operate and sustain itself in austere intratheater locations across remote beaches. Funding for this program is in the Navy's research, development, test, and evaluation appropriation before transitioning to the first ship award.

Additionally, the fiscal year 2022 budget includes three of the Marine Corps' top investments. These investments are in support of the initial operations capability of the new 3d Marine Littoral Regiment (MLR) in fiscal year 2023. For example, the Marine Corps' highest priority is the Navy Marine Expeditionary Ship Interdiction System (NMESIS) and its anti-ship missile capability. Eight of the systems in the fiscal year 2022 budget request will form the first anti-ship missile capability for the Marine Corps. This capability provides the Marine Expeditionary Force's kinetic fires to hold adversaries at risk and supports the stand-in forces ability to persist within an adversary's weapon engagement zone (WEZ).

The aircraft requested in the fiscal year 2022 budget are critical enablers of Marine Corps' units. The six MQ–9A Extended Range in the budget request will provide communication data relay and improve overall command and control. The six KC–130J in the budget request provide the needed air mobility for the Indo-Pacific region. These NMESIS anti-ship missile capabilities and aircraft will deliver initial capabilities to the Fleet in fiscal year 2023 or shortly thereafter. We

appreciate your support of these programs in the fiscal year 2022 budget request and future requests, as we build out the capacities of these units.

QUESTIONS SUBMITTED BY SENATOR JAMES INHOFE

VIRTUAL TRAINING METHODS

37. Senator INHOFE. Admiral Gilday, from the recent U.S. Indo-Pacific Command Pacific Deterrence Initiative report to this Committee as well as public statements by Navy flag officers, we understand there is a need for a realistic training environment to prepare our warfighters to win decisively in a peer or near-peer fight. Fielding a Live-Virtual-Constructive (LVC) training solution that enables our aviation, land and maritime teams to conduct training that is secure and interoperable across the Department of Defense and with Coalition partners seems to be a priority, but I am concerned about how long it will take the Navy to field LVC.

With continued successful development, what is the Navy's plan to accelerate the fielding of this game changing LVC air combat training capability?

Admiral GILDAY. DoN and USAF remain committed to TCTS II/P6 and plan to incorporate additional LVC air combat training and LVC testing capabilities, such as those being demonstrated this summer and fall, into the Program of Record as the most adaptable and executable path forward. The complex LVC environment must not only ultimately provide high end training across multiple platforms, domains, and services, but must also have ties to the flight test environment to enable affordable development of future capabilities needed to outpace our adversaries. The DoN and USAF will collaborate on the necessary requirements, infrastructures, and investments.

QUESTIONS SUBMITTED BY SENATOR ROGER WICKER

AIRCRAFT CARRIERS

38. Senator WICKER. Secretary Harker and Admiral Gilday, the Navy's Shipbuilding Plan, published last week, identifies a target range for aircraft carriers as between 9 and 11. The current legal requirement for carriers remains 11. The carrier fleet is struggling to meet today's operational requirements even with 11 carriers. In February, the USS *Nimitz* returned home from a 321 day deployment—the longest ship deployment since the Vietnam era. The USS *Ronald Reagan* has had to abandon her station in the Western Pacific, a strategic priority area, to transit to the Middle East in order to support the troop withdrawal from Afghanistan. When it arrives, the Reagan will relieve the USS *Dwight D. Eisenhower,* which deployed in February after just returning from a seven month deployment last August. What analysis supports reduction in requirements for aircraft carriers when the Navy is struggling to meet current demands?

Secretary HARKER and Admiral GILDAY. Navy's Long Range Plan for the Construction of Naval Vessels provides the objective inventory for naval vessels out to the distant future. It is not intended to communicate a reduction in requirements, but to highlight a potential range, given the long time horizon covered by the plan and the number of factors that can ultimately impact ship counts.

The Navy continues to meet requirements for 11 nuclear powered aircraft carriers (CVNs) in support of title 10 requirements. Nuclear powered carriers (CVNs) and carrier air wings (CVWs) are the Joint Force's most survivable and adaptable aviation basing option. They provide sea control and power projection in contested battlespace, offering a uniquely valuable combination of maneuver, operational reach, volume of fires, sustainability and organic sensors.

The recent Future Naval Force Study effort—led by the Deputy Secretary of Defense and supported by tri-chair leadership from the Department of the Navy, Joint Staff and the Office of the Secretary of Defense's Office of Cost Assessment and Program Evaluation (OSD CAPE)—found that in order to maintain dominance, the United States needs a naval force that is balanced and can strike targets from the undersea, surface, air and land domains.

As stated in the shipbuilding plan, the Navy—working closely with the OSD CAPE—continues to assess naval force structure options consistent with Interim National Security Strategic Guidance and designed to maximize the maritime contribution to the Joint Force. The outcomes of this analytic work will provide key insights in describing the future objective battle force.

39. Senator WICKER. Admiral Gilday, why did the Navy choose to send the USS *Ronald Reagan,* the forward deployed 7th Fleet aircraft carrier, to the Middle East?

Admiral GILDAY. A Carrier Strike Group (CSG) was requested by United States Central Command in support of the Afghanistan Retrograde mission. After providing the Secretary of Defense with the options and associated risks, he determined that USS *Ronald Reagan* was the right asset to execute this important mission.

40. Senator WICKER. Admiral Gilday, as USS *Ronald Reagan* covers the troop withdrawal in Afghanistan, is there an aircraft carrier available in the Western Pacific?

Admiral GILDAY. While there is not a CVN currently operating in the Western Pacific, RRN could be rapidly redeployed if the circumstances or situation in the Western Pacific were to change. Additionally, the CARL VINSON CSG is scheduled to arrive in the Western Pacific in mid-August and could be accelerated if required.

SHIPYARDS

41. Senator WICKER. Secretary Harker and Admiral Gilday, Senators Kaine, Shaheen, King, Collins, and I introduced the SHIPYARD Act, which would provide $25 billion in funding to the Nation's Navy shipyard infrastructure in order to repair and modernize these facilities. With strong bipartisan support, we hope to help the Navy address what the GAO described as the Navy's "primary readiness challenge." If this legislation passed, how would the Navy invest these funds to improve shipyard infrastructure, both public and private?

Secretary HARKER and Admiral GILDAY. Public Shipyards: The Department of the Navy Shipyard Infrastructure Optimization Program (SIOP) defines investments necessary to improve America's public shipyards by modernizing and upgrading their outdated facilities. If additional funds were made available via the SHIPYARD Act, the Navy would be able to accelerate Phase II and Phase III of the SIOP implementation strategy for public dry dock recapitalization, including optimized place-

ment of new maintenance facilities and major equipment replacement at each public shipyard to support nuclear powered submarine and carrier requirements.

Private Shipyards New Construction and Ship Repair: The Navy is supportive of increasing maintenance and construction capacity at the Nation's private shipyards. If the SHIPYARD Act were to provide funds for use at private shipyards, the Navy would work collaboratively with private industry to determine the most effective way to implement those funds to improve facilities and infrastructure at our industry partner's shipyards.

42. Senator WICKER. Secretary Harker and Admiral Gilday, how would these shipyard investments impact Navy readiness?

Secretary HARKER and Admiral GILDAY. Investments in America's shipyards that modernize and upgrade outdated facilities will provide the Navy the opportunity to improve maintenance efficiency, reduce availability durations, and return ships to the fleet on time.

TRANSFERRING AEGIS ASHORE TO THE ARMY

43. Senator WICKER. Admiral Gilday, the Army serves as the Department of Defense's executive agent for theater integrated air and missile defense. Based on public statements, I understand that Navy leadership has been exploring options to transfer responsibility for the Aegis Ashore ballistic missile defense program, which currently has sites located in Romania and Poland. Are the Army and Navy developing a plan to transfer responsibilities for Aegis Ashore, and if so, what is the status of these discussions?

Admiral GILDAY. Per the CNO's 2021 NAVPLAN, the Navy's strategic direction includes divesting of non-core Navy missions like Aegis Ashore in order to remain ahead of competitors. Transferring shore-based Ballistic Missile Defense sites to ground forces enables Sailors to focus on their core missions at sea and frees up resources to increase lethality. The transfer of Aegis Ashore to a ground-based service is being addressed within the Department.

QUESTIONS SUBMITTED BY SENATOR MIKE ROUNDS

NAVAL AIRCRAFT READINESS

44. Senator ROUNDS. Admiral Gilday, according to the fiscal year 2022 budget request, the Navy plans to retire 55 F/A–18 A–D Hornets in fiscal year 2022 and to retire all F/A–18 A–D Hornets by fiscal year 2024. Meanwhile, the Navy has also requested just 20 F–35Cs this year, after acquiring 26 in fiscal year 2021. Admiral, can you articulate the operational risk the Navy may be assuming by executing this divestiture, while simultaneously requesting cuts to F–35C procurement in fiscal year 2022? Is procurement of 5 additional F–35Cs, which appears in your unfunded request list, the best way to mitigate this operational risk?

Admiral GILDAY. The Navy began divesting of 55 F/A–18 A–D Hornets in fiscal year 2021. The remaining 33 F/A–18 A–D Hornets, which are flown by the Navy Reserves and NAWDC, will be divested in fiscal year 2022. All 55 F/A–18A–D Hornets are non-combat coded aircraft and therefore do not incur any operational risk.

The DON procurement of F–35Cs in fiscal year 2021 was 26 total (10 F–35Cs for USMC and 11 F–35Cs for USN with a Congressional add of 5 F–35C to procure 26 F–35Cs). The USMC procurement plan remained consistent in support of the squadron transition roadmap with a procurement reduction from 10 F–35Cs in fiscal year 2021 to 5 F–35Cs in fiscal year 2022. The USN procurement plan also remained consistent from the fiscal year 2021 to the fiscal year 2022 budget request, with an increase in procurement from 11 F–35Cs in fiscal year 2021 to 15 F–35Cs in fiscal year 2022. The request for an additional 5 F–35Cs for the USN is needed to mitigate operational risk.

CYBER

45. Senator ROUNDS. General Berger, I had a phenomenal opportunity to visit with the Marines from Marine Forces Cyber last week at U.S. Cyber Command. I was impressed with the offensive and defensive capabilities they are bringing to the fight. Can you briefly discuss the capabilities the Marines bring to the cyber fight and how the fiscal year 2022 budget request will shape the Marine Forces Cyber operations of the future?

General BERGER. The Commander MARFORCYBER (CDRMARFORCYBER) commands both MARFORCYBER and Marine Forces Space (MARFORSPACE). MARFORCYBER and MARFORSPACE are delegated authorities by U.S. Cyber-

space Command (USCYBERCOM) and U.S. Space Command (USSPACECOM) that support service level requirements. MARFORCYBER/SPACE exercises both Title 10 and 50 authorities while organizationally aligned to plan, direct, and provide intelligence operations, full-spectrum cyberspace, and space operational support to the respective Combatant Commands (CCMD). Major subordinate commands (MSC) include Marine Corps Cyberspace Operations Group (MCCOG), Marine Corps Cyberspace Warfare Group (MCCWYG), and Joint Forces Headquarters Marines Cyber (JFHQ–C(M)).

Collectively, MARFORCYBER/SPACE conduct operations in the information environment (OIE), secure the homeland from cyberspace aggression; secure, operate, and defend the Department of Defense Information Network (DODIN); advance national interests; and deliver capabilities and effects for the Joint Force. MARFORCYBER/SPACE capabilities directly align to the National Defense Strategy (NDS):

- Invest in space and cyberspace warfighting domains
- Provide more lethal, resilient and rapidly innovating forces
- Increase speed and reach
- Incorporate new technologies
- Support the Global Operating Model
- Invest in command, control, communications, computers, cyber-defense, intelligence, surveillance, and reconnaissance (C5ISR) from the tactical to strategic levels
- Organize for innovation

The relationship between space and cyberspace is unique in that many space operations depend on cyberspace, and a critical portion of cyberspace can only be provided via space operations. MARFORCYBER provides on-demand capabilities to support CCMDs with the ability to impact objectives through the application of cyberspace capabilities and effects across the globe in all warfighting domains. MARFORCYBER utilizes a range of tools to conduct surveillance and reconnaissance, collect and analyze data, improve situational awareness, execute the targeting cycle, and assure command and control across the spectrum of competition. Simultaneously, MARFORCYBER enables the warfighter through protecting and hardening our own networks. The current capabilities of MARFORSPACE are growing rapidly along with our joint partners and will ensure that the Marine Corps contributes effective forces that enable space dominance.

How will the fiscal year 2022 budget request shape the Marine Forces Cyber operations of the future?

Fiscal year 2022 is a pivotal year for MARFORCYBER/SPACE. The funds provided in this and future years' budgets are critical to maintaining the tactical and strategic edge over our competitors.

CDRMARFORCYBER has released a fiscal year 2022 Campaign Plan that will train and set the conditions for MARFORCYBER/SPACE personnel to respond to major contingencies and achieve the information advantage in conflict. Initiatives include naval integration, contingency planning, development of domestic and international partnerships, and participation in global exercises. This is in support of USMC Force Design 2030 Initiatives that modernize the force for the INDOPACOM AOR. The fiscal year 2022 Budget is critical to achieving MARFORCYBER's fiscal year 2022 Campaign Plan (CP) objectives and maintaining momentum in each of the associated lines of effort (LOEs): Information Maneuver, Defense-in-Depth, Assured C2, and Space Operationalization.

MARFORCYBER/SPACE enable the service to secure, operate, and defend the Marine Corps Enterprise Network (MCEN) while fielding new capabilities to make critical networks resilient and responsive to operational needs. During fiscal year 2022, resources are dedicated to the deployed MCEN (D–MCEN) project that will consolidate networks and security to ensure greater capability at the tactical edge. Resources will be applied through a variety of initiatives that include, but are not limited to:

- Mission focused cyber hardening and mission assurance programs
- Improvement of operational architectures through various optimization and secure cloud migration programs
- Artificial intelligence, machine learning, and automation
- Defensive cyber tool and capability development
- Data sharing and analytics that support offensive and defensiveness cyberspace operations, OIE, and Joint Forces

In order to maintain relevance in a highly technical and rapidly evolving domain, any future funding and resources will be applied to operations, activities, and investments (OAI) such as:

- Pacing adversarial threats and enhancing integrated deterrence capabilities

- Invest in capability development and force modernization
- Preempt, disrupt, and counter adversaries in and through the OIE
- Set conditions to rapidly respond to armed conflict
- Refine C2 and enhance readiness
- Enhance the service's ability to deliver long-range precision kinetic and non-kinetic fires
- Secure, operate, defend, optimize, and modernize the Marine Corps portion of DODIN
- Protect critical infrastructure
- Invest in people (Active Duty, Reserve, and Civilian)
- Enhance training to transform human capital

QUESTIONS SUBMITTED BY SENATOR THOM TILLIS

DISTRIBUTED STOVL OPERATIONS

46. Senator TILLIS. General Berger, the Marine Corps continues to build upon past experience with distributed operations with Short Take-Off and Vertical Landing (STOVL) aircraft. Military exercises like the 2017 operations in Yap and Palau with MV–22B Ospreys and AV–8B Harriers from the USS *America* showcase this. As the Marine Corps transitions its primary STOVL fighter to the F–35B, exercises must continue that put this new aircraft in similar conditions. In this effort, what role do distributed STOVL operations play in the broader transformation efforts of the Marine Corps?

General BERGER. Conducting operations in the contested environment that is the Indo-Pacific region requires us to continue the expeditionary nature on which the Marine Corps has built its legacy. Investment in the F–35B underpins our efforts as we pursue a more agile, lethal aviation force. The F–35B's STOVL capability affords the combatant commander an additional flexibility of 5th generation combat power, not feasible with conventional fixed-wing platforms. This STOVL capability further develops our globally deployable Naval Expeditionary Force. As we continue to tailor our combat power offering to the Joint Force, we are exploring options for the proper complement of MV–22s and F–35s employed from the ARG/MEU. We have recently completed the academic rigor validating the inclusion of 10 F–35s in the Aviation Combat Element aboard the LHA and are continuing experimentation efforts, most notably as a 20-plane complement of F–35Bs aboard an America Class LHA in spring of 2022. As we prepare ourselves to serve as the stand-in force, we are constrained by the realities of limited conventional airfields throughout the first and second island chains. Our STOVL capability further challenges the adversary's ability to counter the force due to the inherent ability to rapidly employ from austere and expeditionary, shore and ship based environments. In order to sustain this force throughout the contact and blunt phases, it is imperative that we maximize the utility of the STOVL assets in our inventory.

47. Senator TILLIS. General Berger, how does the budget support or not support distributed STOVL operations with different or additional hardware, training, and logistics? What can we do to assist the Marine Corps in this transformative effort?

General BERGER. The PB22 budget request continues support of the USMC TACAIR transition and inherent distributed STOVL operations capabilities. The procurement of 17 F–35B aircraft will support the transition and stand-up of three F–35B squadrons in the fiscal year 2023 to fiscal year 2025 timeframe, including our 1st of 5 squadrons based in Cherry Point, NC. Below-the-line requirements are fully supported and critical to preventing exacerbation of the existing Peculiar Ground Support Equipment (PGSE) gap. We have asked for specific support on the USMC Unfunded Priority List (UPL) for additional PGSE to address this gap, and are currently mitigating its effects through cross-decking or "sharing" of PGSE among units. This has strained the readiness and availability of F–35 support equipment, which in turn threatens the Marine Corps' ability to effectively train to and perform distributed operations.

Additionally, modernization modifications supported in the budget request will enable the upgrade of lower Low Rate Initial Production (LRIP) aircraft to the TR–3 configuration, which enables the broad future F–35 capabilities required for all F–35 mission sets including facilitation of distributed operations. Continued Congressional support of the USMC budget request is crucial to maintaining the TACAIR transition timeline and delivering USMC F–35 capabilities critical to Force Design 2030.

ASSAULT SUPPORT CAPACITY

48. Senator TILLIS. General Berger, in the face of contested logistics in the Pacific theater, how is the Marine Corps revamping or evolving its concept of operations and will that have any impact on the CH–53K requirements or program?

General BERGER. The Marine Corps' new document, "A Concept for Stand-in Forces" guides how the Marine Corps will operate in the Indo-Pacific region and other parts of globe defined by the littorals. EABO is a form of expeditionary warfare that involves the employment of mobile, low-signature, persistent, and relatively easy to maintain and sustain naval expeditionary forces. These forces will operate from austere, temporary locations, ashore or inshore, within a contested or potentially contested maritime area to conduct sea denial, support sea control, or enable fleet sustainment.

The CH–53K will enable the mobility needed to operate in these environments. More specifically, it will greatly reduce the reliance of Marines within the littorals on external mobility support. The Marine Corps is committed to the CH–53K program and is evaluating its quantity requirements. The CH–53K provides a greater payload than any current or emerging rotorcraft, both at sea level and high altitude conditions, at greater ranges to support the rapid transition of Joint and Coalition forces from contact to blunt layer activities in a contested environment. Its purpose based capabilities provide for the resupply of the stand-in force from within and outside of the enemy's weapons engagement zone (WEZ). The CH–53K is the most capable and survivable assault support aircraft that enables the rapid deployment, movement and resupply of stand-in forces within a contested Indo-Pacific region.

49. Senator TILLIS. General Berger, do you foresee the MV–22B and CH–53K as being survivable within the envisioned Marine Corps concept of employment?

General BERGER. Yes, provided the required investments in modernization and survivability are supported and continue to advance. The MV–22B and CH–53K are currently being configured with a common Electronic Countermeasures (ECM) suite that provides a reprogrammable radar and missile warning system, attacking missile declaration, sector direction finding, laser detection, and self-protection capability. The digitization of communications, along with spectrum diversity, sensor modernization and netting, and the coupling with appropriate counter measures significantly increases the ability to operate in contested environments, through a multi-layered approach to the challenges. Combined with modernization investments of survivability equipment, proven assault support tactics, techniques, and procedures (TTPs) in preparation for, and response to an enemy threat, will continue to advance through the integration of kinetic and non-kinetic fires to assist with freedom of maneuver both in and outside the enemy's weapons engagement zone. Those TTPs use a multipronged approach to identify, avoid, and communicate a threat throughout the battlespace; using aircraft designed and equipped with maximum vulnerability reduction features, robust and redundant systems, designed to provide survivability protection to provide the ability to fly home should they sustain combat damage.

50. Senator TILLIS. General Berger, in a distributed environment, it would appear that organic lift capabilities would be a necessary requirement. Moreover, given the austere nature of this environment and potentially limited space, it would also seem that vertical take-off and landing capabilities would be needed. How does the Marine Corps seek to fill these requirements with adequate resources given a reduction in overall medium- and heavy-lift assets?

General BERGER. The Marine Corps is committed to continuing to invest in its fixed-wing and rotary-wing programs, while balancing the needs of the overall force. While enhancing the lethality of the Force, Force Design modernization efforts are also reducing the overall end strength of the Marine Corps. The reduction in medium- and heavy-lift aircraft will take into account the smaller structure of the Marine Corps to right size the Assault Support requirements needed. Though the force is reducing total numbers, medium- and heavy-lift assault support is prioritized to MARFORPAC reflected in the force laydown of four West Coast CH–53 squadrons, five West Coast MV–22 squadrons, two Hawaii MV–22 squadrons, and two Okinawa, Japan based MV–22 squadrons. Marine Corps assault support is regionally aligned to support Force Design 2030.

In the Marine Corps assault support portfolio, the development and fielding of the CH–53K maximizes work effectiveness and efficiency, ultimately improving overall reliability and decreasing operating and support costs in comparison to the CH–53E, which is facing parts obsolescence issues as a legacy platform. In addition to an increase in heavy lift performance, the CH–53K reduces operational risk as a modern

fly by wire helicopter with greater safety, survivability, and reliability capable of integrating into the current battlefield and taking advantage of future technologies, such as manned/unmanned teaming and MAGTF digital interoperability.

AIR WING COMPOSITION

51. Senator TILLIS. Admiral Gilday and General Berger, given the recent force design decisions as well as the focus on manned/unmanned pairing, how is the Marine Corps thinking about meeting their conventional carrier fighter squadron requirements with the F–35C? Do you foresee making any changes?

Admiral GILDAY. The Marine Corps is committed to meeting our conventional carrier fighter squadron requirements. The Marine Corps has continued to procure F–35Cs with the intent of equipping our four F–35C squadrons, meeting the conventional carrier requirement. In early July of this year, Marine Fighter Attack Squadron 314, out of Miramar, California was the first Marine squadron to be declared fully operational capable.

We do not foresee any changes to our carrier fighter squadron requirement.

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52. Senator TILLIS. Admiral Gilday, how are the Navy and Marine Corps looking to integrate unmanned aircraft into the fleet and what is the goal for the ratio of manned and unmanned aircraft?

Admiral GILDAY. Given our adversaries' abilities to strike with increasing range, precision, and lethality, we must reduce exposure of our Marines wherever possible and correspondingly increase our reliance on unmanned systems. These platforms and payloads will be pivotal on the future battlefield. The ability to flood an adversary's decision-making and targeting processes with an array of low signature, affordable, and risk-worthy platforms in the air, as well as on the ground and on the surface, will greatly expand the survivability and capabilities of Marines operating within the adversary's weapon engagement zones. For two decades, the Marine Corps has relied on unmanned aerial systems to provide reconnaissance for our ground forces, and the Marine Corps will continue this investment in the future.

The Marine Corps is investing in a new group 5 capability UAS, and the identified materiel solution is the MQ–9A Extended Range. This UAS platform will fulfill a primary mission of communication and data relay with an additional airborne early warning capability. This will provide deployed Marine Corps and Joint Force units with persistent tactical maritime Intelligence, Surveillance, and Reconnaissance and command and control gateways. The MQ–9A Extended Range is also a critical enabler to the Naval force in building an alternate Precision, Navigation, and Timing network.

The Marine Corps seeks to procure six MQ–9A Extended Range systems in fiscal year 2022, and a total of 18 systems over the next several years, to form three UAS squadrons. The Marine Corps will leverage an existing Air Force system and two current Marine Corps assets in USCENTCOM to reduce risk, while providing advanced capabilities to the Marine Corps and overall joint warfighting enterprise.

In addition to the MQ–9A Extended Range, the Marine Corps continues to develop and experiment with a family of UAS with a variety of plug-and-play payloads. These systems will give ground combat units organic Reconnaissance, Surveillance, and Target Acquisition (RSTA) assets capable of supporting long-range precision kinetic and non-kinetic fires, both afloat and ashore. This includes conducting extended user evaluations with industry leading systems to include the UAV V–BAT and the Stalker UAS to inform requirements for the Ground Combat Element.

LONG-RANGE FIRES

53. Senator TILLIS. General Berger, the Marine Corps has requested funds for a ground-launched version of the Tomahawk cruise missile. In addition to being a physically large weapon, the Tomahawk has a pretty extensive range that would allow Marine forces to engage targets across a theater. How does the Marine Corps envision integrating those assets with existing Marine command and control and with some of the higher-level joint command and control structures within the theater?

General BERGER. The Marine Corps Long Range Fires (LRF) program, which is developing the capability to launch Tomahawk missiles from ground-based launchers, will also field the fire control hardware and software to enable the Marine weapons to be integrated into existing Joint/Naval command, control and communications systems. The LRF program will support joint targeting, mission planning, and the execution of precision strikes. These systems form architectures and support the processes that enable the situational awareness, planning, coordination, and control that is necessary to employ this weapon system over extensive ranges.

54. Senator TILLIS. General Berger, would these weapons directly support Marines forward? The broader joint force? How would those decisions be made?

General BERGER. The Marine Corps will operationally assign Tomahawk missile-capable Long Range Fires units to a Marine Expeditionary Force as a general support, long-range, lethal capability available for National Command Authority and Geographic Combatant Commander tasking. These assets would be employed in the same manner as other naval Tomahawk missiles, providing an alternate method of employing highly effective missile systems against a variety of targets in the land and maritime domains.

55. Senator TILLIS. General Berger, what can this Committee do to assist in your acquisition of this capability?

General BERGER. The Marine Corps respectfully requests that Congress supports the President's Budget request for fiscal year 2022. Additionally, the Marine Corps submitted an unfunded priority list (UPL), and the third item was Tomahawk missiles for this Long Range Fires capability. The Marine Corps appreciates your continued support and is on track to begin delivering the capability in fiscal year 2024.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

ICEBREAKERS

56. Senator SULLIVAN. Secretary Harker and Admiral Gilday, in Secretary Harker's prepared testimony, he described the Tri-Service Maritime Strategy, Advantage at Sea, as a "truly collaborative maritime strategic planning effort led jointly by all three of our Nation's sea services—Navy, Marine Corps, and Coast Guard." He also stated that, "[i]n order to execute these goals, Admiral Gilday, General Berger, Admiral Schultz and I are working together in order to promote integration, communication, and collaboration as a warfighting priority," and that "[t]here can be no daylight between us as we strengthen the integrated all-domain Naval power of the United States." In the past few years, one issue has demonstrated a lot of daylight between the Navy and the Coast Guard—icebreakers. The Navy's Arctic Strategy says the "United States Naval forces must operate more assertively across the Arctic Region to prevail in day-to-day competition." The Russians have over 40 icebreakers, the Chinese have three, and the United States has 1.5. How can the U.S. Navy operate more assertively in the Arctic without icebreakers?

Secretary HARKER and Admiral GILDAY. While the Navy strongly supports the national need for icebreaking capability and capacity, and supports the Coast Guard's recapitalization of their polar icebreaking fleet, the Navy already operates extensively in the Arctic. Our submarines have routinely operated in the Arctic since 1958, and we had near continuous surface ship operations in the High North from April-November 2020. Additionally, we regularly participate in Arctic and High North exercises such as Northern Edge in May 2021.

57. Senator SULLIVAN. Secretary Harker and Admiral Gilday, do you see collaboration with the Coast Guard on icebreaker acquisition as aligned with the precepts outlined in the Tri-Service Maritime Strategy?

Secretary HARKER and Admiral GILDAY. Yes, the Navy's collaboration with the Coast Guard on icebreaker acquisition are in alignment with the Tri-Service Strategy, specifically the precepts of day-to-day competition in the polar region and integrated All-Domain Naval Power. This partnership allows the Navy to leverage the Coast Guard's mission focus and unique expertise operating in the polar region, while the Coast Guard utilizes the Navy's proficiency in ship acquisition and program management.

SEA DENIAL

58. Senator SULLIVAN. Admiral Gilday, you have described the purpose of Marine Corps expeditionary advanced bases as supporting sea denial and sea control. An

essential component of the Marine Corps' ability to conduct the sea denial mission is anti-ship missiles, including the Naval Strike Missile and Maritime Strike Tomahawk. These missiles are #1 and #3 on the Marine Corps' unfunded priorities list. The Marine Corps, in General Berger's estimation, has almost no sea denial capability or capacity currently. How does inadequate Marine Corps sea denial capability and capacity impact fleet operations against the pacing threat?

Admiral GILDAY. The Marine Corps recognizes that their sea denial capability gap negatively impacts distributed naval operations and is taking action to rapidly close the gap. The Marine Corps is developing a ground-based, anti-ship missile (GBASM) capability. The first iteration of this GBASM capability is the Navy/Marine Expeditionary Ship Interdiction System (NMESIS), which fires the Naval Strike Missile. It will be introduced to the Fleet in fiscal year 2024.

Today, the Navy is shouldering the burden of sea denial from our air, surface and subsurface platforms. As the Marine Corps' sea denial capacity grows, directly supporting the Navy's sea denial and sea control missions, it will reduce some of that burden on Navy platforms and potentially free those assets to conduct other missions.

MARINE CORPS SYSTEMS AT SEA

59. Senator SULLIVAN. General Berger, you have testified to Congress and written about the need for Marines to be more than passengers on Navy ships as they transit to the fight. In the last few years, Marine Corps systems such as the Light Amphibious Vehicle and Light Marine Air Defense Integrated System have augmented organic defensive capabilities on amphibious ships transiting through maritime chokepoints. Has the Marine Corps conducted any tests or experiments operating any of its land-based systems—including Ground-Based Anti-Ship Missile, air defense, or counter-UAS—from aboard ships?

General BERGER. Yes, the Marine Corps has tested and employed offensive and defensive capabilities onboard Navy ships. The Marine Corps has employed L–MADIS aboard Navy ships with both East- and West-Coast Marine Expeditionary Units for the past four years. These capabilities were highlighted in July 2019 when Marines from the 11th Marine Expeditionary Unit onboard the USS *Boxer* successfully jammed an Iranian UAS during transit through the Straits of Hormuz.

Additionally, Marines successfully tested the High Mobility Artillery Rocket System (HIMARS) from the flight deck of the San Antonio-class amphibious transport dock ship USS *Anchorage* (LPD 23) during Dawn Blitz 2017. During this test while at sea, the HIMARS engaged a land-based target at a range of 70 kilometers. The Ground-Based, Anti-Ship Missile (GBASM) capability is in the early stages of testing and has yet to be tested on a Navy ship.

NAVY-MARINE CORPS INTEGRATION IN SHIP DESIGN

60. Senator SULLIVAN. Admiral Gilday and General Berger, both of you have spoken at length about increased integration, coordination, and cooperation between the Navy and Marine Corps. As part of the requirements and ship design process, is the Department of the Navy considering how existing or planned Marine Corps systems can be integrated into and operated from Navy ships to augment organic offensive and defensive capabilities?

Admiral GILDAY. The Navy is committed to improving the overall lethality and survivability of our amphibious force. We continue to explore concepts to improve our defensive and offensive capability, as well as improved C2 through continued development of systems such as the Common Aviation Command and Control System (CAC2S). We are also supporting Fleet and USMC studies, war games, and experiments to develop new capabilities through science and technology efforts. Finally, we are initiating a Capabilities Based Assessment to start development of the LPD Flight II replacement.

General BERGER. The Marine Corps works in concert with the Navy to ensure that Marine Corps systems are integrated into Navy ships. While on board, the Marine Expeditionary Unit's Air Combat Element contributes to the defense of the amphibious task force. For example, the Marine Corps' F–35B aircraft provide long-range maritime domain awareness and strike capabilities. Rotary wing H–1 aircraft track surface, subsurface, and airborne threats using Digital Interoperable networks to cue and engage as necessary, and MV–22B tiltrotor aircraft integrate with the ship's defensive networks to provide classified and unclassified data.

The Marine Corps is an integral and active participant in the Naval Tactical Grid efforts to ensure that Marine Corps forces afloat and ashore can connect and share data with Navy platforms. One initiative to gain greater interoperability is the Navy's implementation of Common Aviation Command and Control System Afloat

on Navy amphibious ships. This system, which will share a common software baseline with the Marine Corps variant, is integrated with the Navy's Consolidated Afloat Network and Enterprise System to leverage Joint Strike Fighter, Link 16, fires, and situational awareness data while Marines are embarked. The first installation of Common Aviation Command and Control System Afloat took place in August 2019 on USS *America* (LHA–6) and was subsequently installed on three other LHD/LHA ships. Additional installations on LHD/LHA and LPD amphibious ships are scheduled for fiscal year 2022.

As another example of Marines supporting the ship's defensive capabilities, the Marine Corps has employed Light-Marine Air Defense Integrated System (L–MADIS) onboard Navy ships with both east- and west-coast Marine Expeditionary Units for the past four years. This was highlighted in July 2019 when Marines from the 11th Marine Expeditionary Unit onboard the USS *Boxer* successfully jammed an Iranian UAS during transit through the Straits of Hormuz.

FORCE DESIGN 2030

61. Senator SULLIVAN. General Berger, what is your vision of the Reserve component's role in Force Design 2030?

General BERGER. The Marine Corps Reserve, as part of the single integrated Total Force, remains a vital contributor to the warfighting capability and capacity of the Naval Service. The Marine Corps is committed to sustaining a relevant and capable Reserve Force.

The Marine Corps Reserve is focused not only on integrating with the Active component across the competition continuum, including conflict, but also on providing specialized and general-purpose conventional forces to II Marine Expeditionary Force (MEF) in response to global contingencies. Further, the Marine Corps Reserve is uniquely postured to partner with the Navy's 4th Fleet in USSOUTHCOM. This partnership will generate opportunities to first develop and then employ unique talent and skillsets that will contribute to a campaign of maritime competition, as we enhance global maritime interoperability with our partners and allies.

While Force Design focuses on meeting maritime and joint service requirements against the pacing threat, II MEF and Marine Forces Reserve (MARFORRES) remain "service-retained forces" tasked as the Service's offering for global crisis and contingency response. Given the challenging resourcing environment, service-retained forces may not require the same capabilities that the Service's primary mission compels for III and I MEF forces. Accordingly, II MEF will be the pacing MEF for MARFORRES resourcing, capabilities, and requirements. MARFORRES will also continue to provide capabilities within INDOPACOM through the Service's unit deployment program, as required in support of III MEF.

Finally, experimentation and innovation efforts are vital to the Service's Force Design initiatives. Within the Reserve component, there are marines who have unique skillsets developed in academia or the commercial sector that will be essential for strategic competition. This diverse talent can be leveraged to advance innovation for the Naval Services. We will identify and invest in proven Marines who have an aptitude and desire to gain new, complex warfighting skills. These Marines will represent some of our most vital warfighting capabilities and capacity as they develop enhanced skillsets through continued service in the Marine Corps Reserve.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

COMPETING WITH CHINA

62. Senator BLACKBURN. General Berger, you have said "We must continue to seek the affordable and plentiful at the expense of the exquisite." How does the concept of "the affordable and plentiful at the expense of the exquisite and few" translate into your envisioned force laydown within U.S. Indo-Pacific Command?

General BERGER. The Marine Corps is building a ready, globally-employed, naval force that relies on organic lift—not strategic lift. It is dynamic and postured forward in competition and ready to transition rapidly to conflict, and back again. Our new Marine Littoral Regiments (MLRs) will be organized, trained, and equipped to support sea denial and sea control operations within actively contested maritime spaces as part of a modernized III Marine Expeditionary Force (III MEF). The MLR is a smaller, more agile, and low-signature force, yet is more lethal with longer range precision fires, as compared to those of legacy Marine infantry regiments. III MEF and the Navy's 7th Fleet will support the future MLRs with significant additional capabilities and equipment, including an integrated communication and sensor architecture, aviation assets (MQ–9A, F–35, KC–130J, MV–22, and CH–53K),

maritime mobility and maneuver (Light Amphibious Warships and traditional amphibious warships).

In addition to the MLR, the Marine Corps will still operate its Marine Expeditionary Units (MEUs) in concert with the Navy's Amphibious Ready Groups (ARGs). The MEU/ARG will continue to provide the Nation with a global crisis response capability. The MEUs crisis response capability was recently demonstrated when Marines from the 24th MEU were dynamically re-tasked from operations in the North Arabian Gulf to support the evacuation mission in Afghanistan.

III MEF, in conjunction with 7th Fleet, will exercise and operate with our allies and partners in the Indo-Pacific. This forward posture will provide operational and strategic depth to the Joint and multi-national force. III MEF as a stand-in force, will operate in a distributed manner complicating an adversary's decision-making calculus. III MEF will leverage the MLR and organic assets to establish a network of expeditionary advanced bases designed to project credible anti-access/area denial capabilities against a peer adversary in a littoral fight.

The approach of "the affordable and plentiful" supports our concepts for Stand-in Forces and Expeditionary Advanced Base Operations. Stand-in Forces are forward-postured, steady state forces operating in contested areas within an adversary's weapon engagement zone (WEZ). By being able to transition rapidly from competition to conflict creates a strategic advantage for the joint force. We envision these forces being able to establish and conduct expeditionary advanced base operations (EABO). EABO is a form of expeditionary warfare that calls for naval expeditionary forces operating from a series of austere, temporary locations ashore or inshore with a contested maritime area. To be successful, these stand-in forces need to be small, lethal, low signature and mobile. A force with these attributes will be allowed to remain positioned to achieve desired operational effects while complicating adversary efforts to find and target them.

For stand-in forces to conduct EABO they require a variety of options, such as future amphibious ships, unmanned platforms, and other smaller more lethal and more agile platforms.

63. Senator BLACKBURN. General Berger, how can our force laydown in U.S. Indo-Pacific Command reduce dependence on concentrated, vulnerable, and expensive forward infrastructure and platforms?

General BERGER. The Marine Corps is in close coordination with the Navy as we continue to develop concepts of operations and capabilities for distributed lethality. In steady-state, forward-deployed forces demonstrate our commitment to our allies and partners, providing combat-ready forces in theater, and building ally and partner capability through bilateral and multilateral exercises. The Marine Corps, as the Stand-In Force, will be forward-postured, steady-state forces operating in contested areas—capable of transitioning rapidly from competition to crisis to conflict and back again to create a strategic advantage. These operations must be carried out in close partnership with host nations and partners.

The Stand-In Forces are expeditionary in nature, with small footprints and fewer infrastructure requirements, which makes them less burdensome on host nations than are larger U.S. formations.

These expeditionary capabilities are reliant on ready lift collocated with operating forces. Forward stationed and rotational forces support partner and ally readiness, bolstering their ability to resist coercion and malign activities, while contributing to a free and open Indo-Pacific. Our forward forces' engagements with regional partners during competition improves Joint Force access, basing, and overflight prior to a potential crisis. While we may conduct limited operations from legacy bases in crisis and conflict, our expeditionary nature and organic lift will ensure we can rapidly distribute lethal forces to continue to operate wherever required.

64. Senator BLACKBURN. General Berger, as we look at the Marine Corps' role in Great Power Competition, what unique capabilities can you currently provide or are on pace to provide, that will enable us to compete and win within the "Grey Zone"?

General BERGER. The Marine Corps possesses, or over the next several years, will field advanced capabilities in long range precision fires, resilient communications, intelligence, surveillance, and reconnaissance platforms, and in influencing organizations—all to deter conflict and win within the competition continuum. In the fiscal year 2022 budget request, the Marine Corps requested funding for the MQ–9A Extended Range unmanned aerial system (UAS), which will assist in communications data relay and overall maritime domain awareness. Additionally, the Marine Corps requested funding for the Navy/Marine Expeditionary Ship Interdiction System (NMESIS), which will be able to strike ships, holding adversary assets at risk and contributing to the Navy's sea denial mission. Advanced capabilities such as these

along with the capabilities provided by organizations like the Marine Information Group, (MIG), will provide exploitable advantages in competition, while enhancing lethality should competition turn to conflict. These capabilities are on schedule for fielding by fiscal year 2024 and will be critical enablers to Naval and Joint Forces in contested maritime environments.

The Marine Corps modernization efforts are ultimately enabling the establishment and implementation of what the Marine Corps refers to as the Stand-in Force concept, or SIF concept. The SIF concept dictates that Marines perform three essential functions; find and track adversary threats inside a given area, remain difficult to find to a potential adversary, and if armed conflict begins, use knowledge of the adversary to help the fleet or other elements of the joint force attack quickly and effectively. These enduring functions of the SIF, combined with Marines' forward posture and modernized capabilities, yield two primary benefits. First, it supports deterrence through approaches such as "deterrence by detection." Second, in the event deterrence fails and armed conflict occurs, winning the reconnaissance fight allows the fleet to attack effectively first and seize the initiative. The concept is being refined and is expected to be implemented across the Indo-Pacific region in the near future.

65. Senator BLACKBURN. General Berger, as the future operating concept of the force would necessitate, what coordination has been done—with U.S. Indo-Pacific Command and the Department of State—to identify where our expeditionary basing locations would be, where our stand-in forces would bed down, and what sort of weapons systems are tolerable for our regional partners to be hosting on their home turf?

General BERGER. The Marine Corps continues to coordinate its global posture through the Global Posture Executive Council (GPEC), which includes OSD, State Department, Joint Staff, Combatant Commands, and Service participants. This past summer, we supported the Global Posture Review, and we continue to provide details that will shape OSD's final report and support OSD and State Department policy recommendations. We continue to discuss with OSD to support coordinated efforts across the DOD and enable effective State Department and Inter-Agency engagement.

The Department of State, in particular, is a pivotal partner, based on the essential coordination with friendly nations on which the Marine Corps Concept for Stand-In Forces is based. All parts of the U.S. presence need to speak with one voice in engagements with those nations. As the Stand-In Force, Marines will often be operating from host nations' sovereign littorals, which will necessitate true partnerships and a common cause for deterrence outcomes. Today, the U.S. forward defensive posture in the western Pacific is enabled by strong alliances and partnerships built on shared values and interests. For Stand-In Forces to be effective, this must continue.

NUCLEAR SEA-LAUNCHED CRUISE MISSILE

66. Senator BLACKBURN. Secretary Harker, why was the decision to cancel the Nuclear Sea-Launched Cruise Missile made prior to the Nuclear Posture Review?

Secretary HARKER. As part of the Department of Defense (DOD) programming and budgeting process, Services make many early assumptions to help shape the Service's input into the broader DOD budget request. These assumptions are further refined throughout the budgeting process in a collaborative process with the Office of the Secretary of Defense and DOD stakeholders. Internal planning guidance deferred programmatic decisions until later in the budget process so as to be informed by the on-going 2021 Nuclear Posture Review (NPR), which is reviewing all strategic weapons systems. The Department of the Navy is committed to fully funding the validated requirements as outlined by the NPR and as directed by the Administration.

67. Senator BLACKBURN. Secretary Harker, regardless of what you may have previously published with respect to defunding the Nuclear Sea-Launched Cruise Missile, do you believe that is a strategically relevant weapon system?

Secretary HARKER. The requirement to pursue a Sea Launched Cruise Missile-Nuclear (SLCM–N) originated with the 2018 Nuclear Posture Review (NPR). The Navy completed its Analysis of Alternatives earlier this year, and included funding in the fiscal year 2022 President's Budget to support the start of the program. The Department of Defense is now conducting a new 2021 NPR and I understand that the SLCM–N capability is being discussed as part of that review. The Navy will support the results of the 2021 NPR.

ARTIFICIAL INTELLIGENCE IN PERSONNEL DECISIONS

68. Senator BLACKBURN. Admiral Gilday, on a surface level, do you see Artificial Intelligence providing an advantage to the career monitor population in terms of slating Sailors and Naval Officers for future assignments?

Admiral GILDAY. Advanced computing technology, such as machine learning or Artificial Intelligence (AI), could increase efficiencies and automate processes when developing assignment slates. While AI may not always account for the nuances or other special cases for each service member, Navy is exploring new initiatives to better support the slating of enlisted and officer assignments.

QUESTIONS SUBMITTED BY SENATOR JOSH HAWLEY

THE THREAT OF THE FAIT ACCOMPLI

69. Senator HAWLEY. Admiral Gilday and General Berger, the Tri-Service Maritime Strategy says, "In the event of conflict, China ... will likely attempt to seize territory before the United States and its allies can mount an effective response—leading to a fait accompli." Can you explain why the Tri-Service Maritime Strategy highlights the threat of a Chinese fait accompli?

Admiral GILDAY. In a fait accompli scenario the People's Republic of China (PRC) will likely attempt to rapidly seize territory before the United States and its allies can mount an effective response and then quickly reinforce its lodgment with long-range fires to deter any future response. We highlight this in the Tri-Service Maritime Strategy because it is likely that China would do this in initiating military action in the Western Pacific, which poses a serious challenge to the Naval Service.

A fait accompli scenario reinforces the need for the Naval Service to maintain a combat credible presence in the Western Pacific to respond with little warning in the event the PRC takes overt military action in violation of international law. A core tenet of the Tri-Service Maritime Strategy is the need for the Naval Service to continue operating forward to deter coercive behavior and conventional aggression as well as to reassure allies and partners.

General BERGER. Senator, as America's expeditionary force in readiness, and with clear guidance that China is our pacing threat, we have an obligation to think through what China's likely courses of action are during competition or conflict. We have clear evidence that China's preferred option is to make their desired objectives an accomplished fact (a fait accompli) by moving rapidly before we, our allies, and partners can react, thus forcing us to either accept new conditions on the ground or escalate. Military history is replete with examples where aggressors employed this gambit with both successful and unsuccessful outcomes. In many of the most likely crisis scenarios, China and Russia enjoy the advantage of proximity, while the United States must address numerous challenges (time, space, mass, critical infrastructure) to project military power within the contested region. This positional advantage, therefore, must elevate the possibility of adversary fait accompli strategies within our contingency planning scenarios. As a result, the fait accompli threat needs to be at the forefront of our minds as we build the Force Design 2030 force.

70. Senator HAWLEY. Admiral Gilday and General Berger, I've asked Secretary Austin, Deputy Secretary Hicks, and nearly every other defense leader who has come before this Committee if the United States should maintain its ability to defeat a Chinese fait accompli against Taiwan. They have all responded in the affirmative. Do you agree that we need to maintain this capability?

Admiral GILDAY. The United States has a serious commitment to preserving peace and security in the Western Pacific, including encouraging the peaceful resolution of cross-Strait issues and ensuring that Taiwan can defend itself from China. We stand behind this commitment and believe it would be a serious mistake for China to threaten the status quo of peace and stability across the Taiwan Strait. If China threatens that status quo, the United States Navy can provide a credible force to defeat the PRC invasion against Taiwan. To sustain America's advantage at sea, the Navy will deliver combat-ready forces to deter aggression and keep the seas free and open. Maintaining our ability to deploy battle-ready ships, submarines, and squadrons around the Western Pacific ensures the credibility of our commitments to our allies and partners in the region.

General BERGER. Senator, I stand with my fellow Service Chiefs, the Deputy Secretary of Defense, and the Secretary in affirming our commitments under the Taiwan Relations Act which includes maintaining our capacity to resist all forms of coercion that would jeopardize the security of the people of Taiwan.

As outlined in the Tri-Service Maritime Strategy, our capacity to deter military aggression by China against Taiwan, alongside the capabilities of our allies and partners, includes:

- Operating forward deters coercive behavior and conventional aggression. We cannot contest malign activities without being present. Our force generation models must ensure we have sufficient combat-credible naval forces available to deter aggression, preempt a fait accompli, and win in conflict, all backed up by rapid surge capability and capacity.
- Contested seas require a renewed emphasis on sea control. Denying our adversaries' use of the seas thwarts their direct wartime objectives and disrupts their efforts to threaten our allies and the American homeland from the maritime domain. We must increase our emphasis on controlling the seas in conflict to provide joint and allied forces with the freedom of maneuver to attack adversary forces and impose costs globally.
- Maintaining advantage at sea requires modernization. In persistently surveilled, contested environments, agile naval forces offer dynamic and flexible options from which to project combat power. We must maintain our advantage at sea with new platforms, new thinking, and new technologies that enhance distributed naval operations while developing our people and culture to meet the challenges of a complex security environment.

Given the geography of the Indo-Pacific and China's rapidly advancing long-range precision fires capabilities, the Navy and the joint force will need a stand-in force that can operate persistently within these weapons engagement zones and provide 'deterrence by detection'. The Marine Corps will be that force.

Our Corps' Force Design 2030 transformation focuses on how the Marine Corps maintains its status as the Nation's premier expeditionary force in readiness while purposely building stand-in forces capable of assurance and deterrence in the Pacific and other areas. We will be a stand-in force within the adversary's weapons engagement zone that is light, mobile, widely distributed, and that operates from diverse maritime platforms. By delivering mission-critical capabilities from expeditionary advanced bases, Marines will provide more vectors of attack to deter and ultimately defeat enemy aggression. Not only will the Marines possess formidable organic fires capable of denying key maritime terrain because of our forward presence, but we will also be a linchpin in the kill chain for naval and joint fires by performing reconnaissance and counter reconnaissance.

For more than a decade, the Marine Corps has been planning and executing actions for a military build-out across the Pacific Region via the Defense Policy Review Initiative (DPRI) to sustain warfighting capabilities and to achieve force posture realignments, including necessary training range development, the identification of unit and installation facility requirements, programming and budgeting, and supporting establishment requirements necessary to set the theater for an increasingly competitive environment. Continued congressional funding of Marine Corps Force Design 2030 and DPRI initiatives is vital to creating the military capabilities, geographic positioning, and critical infrastructure necessary to prevent a fait accompli in the Indo-Pacific.

LONG-RANGE PRECISION FIRES

71. Senator HAWLEY. General Berger, the Marine Corps has included Naval Strike Missiles and Tactical Tomahawks at the top of its Unfunded Priorities List. How will these systems and their enablers help us deny a Chinese fait accompli against Taiwan, and why is it so important that we field them as quickly as possible?

General BERGER. When forward deployed inside the adversary's weapons engagement zone, these weapon systems will provide the Marine Corps, Integrated Naval Force, and Joint Force with a Stand-In Force capable of conducting sea denial, thus affecting an adversary's plan. Denying a specific area can present a forward edge behind which the U.S. fleet can maneuver, or prevent an adversary from using key straits or chokepoints, such as the Taiwan Strait. Area denial can also channel an adversary into areas in which U.S. Forces enjoy a relative advantage.

Ground-based launchers add a new type of threat against a peer adversary, stress different surveillance and offensive systems, are hard to detect and track in a cluttered ground environment, and add a significant level of persistence and depth to existing anti-ship capabilities. The range, persistence, survivability and lethality of these weapon systems will deny the adversary key maritime maneuver space, and limit their deployment options and avenues of approach for amphibious forces. The Naval Strike Missile-equipped medium-range missile battery is a critical element of the Marine Littoral Regiment (MLR). As such, the first battery will be fielded to

support the 3d MLR beginning in fiscal year 2023. The first Tomahawk Missile-capable long-range missile battery is on schedule to begin fielding in 2024.

FLEET ARCHITECTURE

72. Senator HAWLEY. The Navy is required by law to maintain not less than 11 aircraft carriers. It's not clear, though, that money spent on 11 carriers is money best spent. It seems just as likely, for instance, that we should use that money to grow our undersea forces or invest in other capabilities that are optimized for blunting a Chinese offensive in the initial period of war.

Admiral Gilday, how do you assess the opportunity costs associated with maintaining an 11-carrier fleet as opposed to a 10- or 8-carrier fleet, if reducing the number of carriers would allow you to invest more in these other capabilities?

Admiral GILDAY. The U.S. Navy Carrier Strike Groups (CSG) with their associated Surface Combatants, Large-deck, Nuclear-powered Aircraft Carriers (CVN) and Carrier Air Wings (CVW) represent the eleven most survivable and lethal airfields in the world. The CSG continues to be the preeminent power projection force with its ability to produce long range kinetic and non-kinetic effects from the sea without the need for foreign basing rights. The current and future CSG constitutes a robust mix of sustainability, survivability and lethality with massed firepower and influence in a time of great power competition. The CSG is a key component to Distributed Maritime Operations (DMO) and offers Combatant Commanders rapid and decisive response options across the entire spectrum of military operations in an increasingly complex global landscape.

The CVN enables the CSG to operate without replenishment for weeks at a time, due to its Nuclear power plant, aviation fuel capacity, weapons storage, and organic repair capabilities. Coupled with the CVN's maneuverability, the CSG can operate undetected while creating significant uncertainty, greatly complicating adversary targeting. The CSG's layered defenses starting with the offensive fire power from the mix of fifth and fourth generation aircraft from the CVW integrated with the Destroyer and Cruiser escorts allows the CSG to survive and operate inside threat ASCM ranges.

With 11 CVNs we are able to employ CSGs, the Department of Defense's most visible asset for power projection and deterrence, to meet Global Force Management Allocation Plan (GFMAP) directed presence. CSG presence has a direct effect on the decisions of malign actors in any theater and is our most viable military option in the great power competition. Any reduction in the number of CVNs, and associated CSGs, will have a commensurate decrement in our ability to project power around the globe, with the loss of associated deterrent value. The airpower resident within a CSG facilitates numerous naval missions; reducing the number of CVNs would have a corresponding negative impact on those alternate missions as well.

GLOBAL FORCE MANAGEMENT

73. Senator HAWLEY. Admiral Gilday, there has been a substantial increase in Requests for Forces from the Combatant Commanders in recent years. How has this increase impacted the Navy's ability to improve readiness and invest in the modernization that we so badly need to keep pace with China?

Admiral GILDAY. Combatant Commander Requests for Forces continue to outpace Navy's ability to meet Secretary of Defense-approved presence requirements given our current force structure. For example, four recent Carrier Strike Group deployments were extended to support U.S. Central Command, resulting in additional incremental costs of over $200 million. While the inherent flexibility built into the Optimized Fleet Response Plan readiness production construct has enabled us to meet this increased demand, continued deployment extensions will have significant, longer-term costs and readiness impacts. Unplanned costs require reprioritization of readiness resources (i.e. personnel, spare parts, and ordnance) and modernization funds, typically resulting in reductions to non-deployed flying hours and deferred parts and maintenance. This degrades the readiness of our next-to-deploy forces. Unplanned schedule changes often require ship maintenance availabilities to be deferred or cancelled, degrading material condition and impacting future availability planning and on time performance. Ensuring that platforms complete required maintenance and modernization availabilities on time is essential for the long term health of the force and generating future readiness. Additionally, unplanned schedule changes, including deployment extensions, negatively impact the quality of life for our Sailors and their families, which may result in reduced retention.

DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2022 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, JUNE 24, 2021

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

THE DEPARTMENT OF ENERGY AND NATIONAL NUCLEAR SECURITY ADMINISTRATION ON ATOMIC ENERGY DEFENSE ACTIVITIES

The Committee met, pursuant to notice, at 9:00 a.m., in Room SD–G50, Dirksen Senate Office Building, Senator Jack Reed, Chairman of the Committee, presiding.

Committee Members present: Senators Reed, Gillibrand, Kaine, King, Warren, Manchin, Rosen, Kelly, Inhofe, Wicker, Fischer, Rounds, Ernst, Tillis, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. I would like to call the hearing to order.

The Committee meets today to receive testimony on the Department of Energy's atomic energy defense programs in review of the fiscal year 2022 President's defense budget request. I would like to welcome our witnesses, Secretary of Energy Jennifer Granholm and Acting Administrator of the National Nuclear Security Administration, Dr. Charles Verdon. Thank you for joining us. I also want to thank the workforce for their service to the Nation.

The fiscal year 2022 budget request for the defense functions of the Department of Energy is $27.9 billion. This figure accounts for about 60 percent of the Department of Energy's overall $46.2 billion request. Having the Secretary of Energy appear before us underscores the importance that this Committee places on oversight of the Department of Defense activities, which span from maintaining our nuclear stockpile to cleaning up former Cold War defense production sites in order to meet binding commitments between the Federal Government and the communities and states they reside in.

Within this $27.9 billion defense proposal, the National Nuclear Security Administration, or NNSA, is requesting $19.74 billion, or a 0.5 percent increase over last year's level of $19.73 billion. While the fiscal year 2022 budget is flat, I would note that the amount for environmental cleanup increased by 6.4 percent to a total of $6.8 billion.

Madam Secretary, given this flat NNSA budget there will be tradeoffs within the remaining budget to meet ongoing DOD requirements. I would like to know what these offsets are and what impacts they will have. Our analysis shows that maintenance of long-term engineering and science programs decreased 4.4 percent. Funds for infrastructure and operations, particularly safety, decreased by 12.3 percent. There is a view that there are carryover monies in infrastructure that can be spent in these areas, but this Committee has too often found that using carryover funding simply pushes today's important infrastructure problems to subsequent years, where they inevitably grow in magnitude.

With respect to DOD requirements, I would appreciate an update on how the NNSA is working with the Nuclear Weapons Council. The Committee spent considerable time last year ensuring the relationship between the Department of Energy, the NNSA, and the Nuclear Weapons Council was on the right footing. I will want to know your views on this matter, as it is an important issue.

The NNSA has also experienced its highest workload since the 1980s, as it manages five major warhead programs while rebuilding nuclear infrastructure that is original to the Manhattan Project of 70 years ago, and I am interested in how NNSA is managing this workload and the status of modernization of the facilities.

I would also ask that our witnesses share how the NNSA is meeting the requirement for plutonium pit production. This administration has endorsed a two-site solution for producing pits at Los Alamos and rebuilding the abandoned mixed oxide facility at the Savannah River site. I would like to know what issues you see in the coming year for both sites with respect to cost and meeting production requirements.

Finally, Madam Secretary, I hope you will update us on your efforts to continue cleaning up former Defense production sites, particularly at the Hanford Nuclear Reservation. As you are aware, the Hanford site has 55 million gallons of radioactive waste stored in 177 underground tanks, some of which are leaking. Although your Department is starting operations to remove the first 40 percent of low-activity radioactive waste from these tanks, which accounts for 90 percent of the waste, at present there is no plan to remove the high-activity radioactive waste in the tanks. I would ask you share how you are working with the State of Washington on a plan to remove this highly radioactive waste.

Again, I want to thank our witnesses for appearing today and for their distinguished service to the Nation in so many different ways.

Now let me recognize the ranking member, Senator Inhofe, please.

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Thank you, Mr. Chairman. Over the past few years one of the Committee's top priorities has been ensuring that we rebuild our U.S. nuclear deterrent, the cornerstone of our national security. We have talked together, and I think we are all in agreement on that.

I think Secretary Austin said it well when he told us, quote, "The U.S. nuclear weapons have been extended far beyond their original

services lives, and the tipping point where we must simultaneously overhaul these facilities is now here. It is actually beyond here.

If we are serious about meeting that growing and underappreciated threat posed by China and Russia, we need to be honest about the resources needed to do so, and repair these resources, which we will talk about in a minute.

Unfortunately, the administration's fiscal year 2022 DOD budget cuts spending when we need real growth. We simply cannot compete if our budgets do not support our strategy. Strategy by starvation is a recipe for disaster.

We have that same problem with this year's NNSA budget. For the first time since 2013—this is significant—for the first time since 2013, the NNSA request has shrunk from the previous year, mostly because of a $500 million cut to NNSA deferred maintenance efforts. Deferred maintenance is kind of a less-than-courageous way of doing something without being caught. I think we all understand that.

If this were the result of real progress in modernizing our nuclear weapons stockpile, that would be one thing. But that is not the case here. We are still trying to recover from decades of underinvestment. We must rebuild our aging nuclear forces.

I cannot understand why the administration is cutting NNSA funding while pushing for trillions of dollars in spending in so many other areas, less critical areas, such as so-called "green energy" subsidies. Almost a third of NNSA's facilities date back to World War II, and we have buildings where chunks of the concrete fall from the ceiling on workers below. We need to do better for the people who care for our nuclear enterprise.

By contrast, our adversaries clearly prioritize their nuclear programs. They understand their value. Our lack of focus on nuclear weapons puts us in danger of falling even farther behind, and puts our Nation at risk, and we cannot allow this to happen.

So I look forward to your testimony of these two great witnesses. Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Inhofe. Madam Secretary, you are recognized, please.

STATEMENT OF THE HONORABLE JENNIFER M. GRANHOLM, SECRETARY OF ENERGY

Secretary GRANHOLM. Thank you so much, Chairman Reed and Ranking Member Inhofe and Members of the Committee. It is a privilege to be before you on behalf of the Department of Energy as the Nation's 16th Energy Secretary. I am unspeakably honored to be entrusted with the responsibility of enhancing America's security through nuclear defense, nonproliferation, and environmental efforts, in addition to leading the Department's efforts to support the breakthrough scientific discoveries at our 17 National Labs and to deploy those breakthroughs at scale to create jobs for the American people.

As we endeavor to build America's clean energy future we know the Department's nuclear security mission is essential to ensuring that future is safe and secure. It is a core focus of our daily work, and I recognize that the Senate Armed Services Committee has always demonstrated bipartisan commitment to this mission. I ap-

plaud your ability to consistently work together on such serious matters and your continued support for the Department's efforts around deterrence and on proliferation and environmental management, which, of course, together make up nearly three-quarters of the Department of Energy's budget.

We know full well that as long as nuclear weapons exist the United States must maintain the safety, security, and effectiveness of our Nation's nuclear stockpile. We have to make sure that the U.S. Navy has the nuclear propulsion that they need to carry out their important operations, and we must also advance nuclear nonproliferation intentionally, and we have to do it internationally. We have to address the threat of nuclear terrorism, we have to mitigate the environmental harm from our nuclear program, and to those ends, I am pleased to report that since I have taken office the Department and the NNSA have reinforced a strong working relationship, prioritizing collaboration and communication, while respecting NNSA's semi-autonomous status.

Here I do want to thank our colleagues at the NNSA, and in particular Acting Under Secretary Dr. Charlie Verdon, who is here and whose incredible vast experience and expertise has been invaluable to our nuclear security mission. I want to thank this Committee for having advanced Dr. Jill Hruby and Frank Rose to the next level, and hopefully the Senate can follow your lead, given the importance of this mission.

Working together with NNSA and DOE, we have reached several notable milestones over the last 5 months, and that includes our support for diplomatic efforts to successfully extend the New START nuclear arms control treaty with Russia, and our progress around the Los Alamos plutonium pit production project, which is now underway, and which will produce 30 war-reserved plutonium pits per year to meet our national security needs. We have also moved forward on a series of upgrades that are essential to the Nation's nuclear deterrent, and our work is further facilitated by our exceptional partnership with the Department of Defense. You will be glad to know, I hope, that DOE and NNSA and DOD are engaging in high-level coordination, and we are in lockstep around our mutual goal of ensuring that the U.S. nuclear deterrent is fully funded and properly managed.

I will note also that we are fully aligned with the Department of Defense regarding the budget for this next fiscal year, which meets DOD requirements. I am fully committed to working in close cooperation and coordination with the Defense Department on the future budget requirements.

The budget proposal before you would allow us to make substantial progress in five areas. One, it would sustain funding for NNSA in support of the agency's longstanding nuclear modernization efforts. Second, it would support our weapons account activities, and that means allowing us to keep the Nation's stockpile and infrastructure in line with DOD requirements. Third, it will enhance our Office of Defense Nuclear Nonproliferation, so that we can ramp up our work to prevent state and nonstate actors from achieving their ambitions around nuclear weapons. Fourth, it provides the resources needed to support the U.S. Navy with militarily effective nuclear propulsion plants, and ensure they are safe and

reliable and long-lived operation. Fifth, importantly, it would allow our Office of Environmental Management to advance our commitments to the communities that have supported national defense programs and nuclear research and facilitating continued progress along all 16 of our cleanup sites.

Before I close I do want to acknowledge that we know, following the attacks on the grid and on the pipeline, with SolarWinds and the Colonial Pipeline, that we face this national security imperative to harden our critical infrastructure against these evolving cyber threats as well.

So I am humbled by the opportunity to lead the Department of Energy in this moment, and I am happy to discuss our priorities and our goals with this Committee, and answer any questions that you may have.

[The joint prepared statement of Secretary Granholm and Dr. Verdon follows:]

JOINT PREPARED STATEMENT BY SECRETARY OF ENERGY JENNIFER GRANHOLM AND ACTING UNDER SECRETARY FOR NUCLEAR SECURITY CHARLES VERDON

It is a privilege to serve as the 16th Secretary of Energy and have the responsibility of leading the Department in enhancing America's nuclear security through defense, nonproliferation, and environmental efforts. As long as nuclear weapons exist, the United States must maintain the safety, security, and effectiveness of the nuclear weapons stockpile through the application of unparalleled science, technology, engineering, and manufacturing. The Department also works to prevent nuclear weapon proliferation and reduce the threat of nuclear and radiological terrorism by leveraging the unique expertise of our federal and nuclear security enterprise workforce. In addition, the Department provides the U.S. Navy with militarily effective nuclear propulsion plants and ensures their safe, reliable, and long-lived operation. Finally, we must complete the safe cleanup of the environmental legacy brought about from decades of nuclear weapons development and government-sponsored nuclear energy research. The Department stands ready to support the President in meeting all these missions. To meet these challenges, DOE must uphold our values, revitalize our nuclear security enterprise, and ensure the environmentally sound and safe cleanup of legacy nuclear sites, particularly in disadvantaged communities. I am committed to investing in the kinds of science and technology that will help us today, tomorrow, and well into the future so the United States will always have a qualitative edge over its adversaries. I am proud to lead the more than 100,000 dedicated federal and DOE contractor employees working every day to find solutions to our most pressing national security, scientific, energy, cybersecurity, and climate change challenges.

As I noted in my confirmation hearing, I am focused on three missions as the Secretary of Energy—first, the security of the United States through the National Nuclear Security Administration (NNSA) nuclear stockpile, nuclear nonproliferation, and naval nuclear propulsion missions, and the Environmental Management (EM) program's clean-up of our Cold War legacy sites. Second, supporting the amazing scientific work being done at the DOE's 17 National Labs and other facilities across the country, including on climate change and emissions reductions. Third, taking that research to scale and deploying it to create jobs for Americans. As Secretary, I am responsible for what happens at NNSA, and that includes making sure NNSA is properly resourced to execute its mission. Since I have been in the position, the Department and NNSA have reinforced a strong and collaborative working relationship that protects NNSA's semi-autonomous status while also ensuring that we are able to best leverage the different skills sets and expertise across the Department.

NNSA FISCAL YEAR 2022 BUDGET OVERVIEW

DOE's NNSA is committed to supporting the President's Interim National Security Strategic Guidance. The President's Fiscal Year 2022 Budget Request reflects the U.S. commitment to maintain a safe, secure, and effective nuclear weapons stockpile, reduce global nuclear threats, and provide the U.S. Navy's submarines and aircraft carriers with militarily effective nuclear propulsion. NNSA is on track to modernize the nuclear stockpile with our life extension and alteration programs;

make substantial progress on maintaining, repairing, and recapitalizing NNSA's deteriorating infrastructure; provide policy and technical leadership to address all aspects of the nuclear threat reduction mission; and deliver nuclear propulsion that meets the U.S. Navy's operational requirements.

The President's Fiscal Year 2022 Budget Request of $19.7 billion for NNSA, an increase of $10.8 million, or 0.1 percent over the fiscal year 2021 enacted level.[1] This request would enable NNSA to execute its long-standing nuclear modernization efforts, begun under the Obama-Biden Administration, while this Administration undertakes its formal review of efforts to modernize our nuclear deterrent, to include Department of Defense delivery platforms, the nuclear weapons required for those platforms, and the NNSA infrastructure needed to produce and maintain those weapons. This will preserve space for future policy decisions related to nuclear modernization, and nuclear nonproliferation and counterterrorism, as the Administration adjusts to the changing international threats facing America. Russia, China, and our adversaries should make no mistake—America will do whatever is necessary to deter our enemies and provide security in our strategic relationships with allies and partners.

The U.S. nuclear weapons stockpile is currently safe, secure, and militarily effective. However, the legacy stockpile systems are aging, and NNSA's production infrastructure has atrophied considerably. America must invest in the weapons and infrastructure modernization programs to provide the capabilities needed to ensure the deterrent's viability into the future. Future American political leaders will not have the weapons and infrastructure in place to support the nuclear arsenal unless we reestablish that capability now.

As we advance the important work of modernizing our Nation's nuclear deterrent and the infrastructure that supports that mission, it is also important that the Department continues to collaborate with the Defense Nuclear Facilities Safety Board (DNFSB) as it has successfully done for decades. I am happy to report that DOE and DNFSB are developing a bilateral memorandum of understanding (MOU) to serve as a foundation for mutual communication, transparency, and information sharing. The completion of this MOU, which we expect to occur this year, will be an important tool for our continued collaboration.

WEAPONS ACTIVITIES

The fiscal year 2022 budget request for the Department's Weapons Activities account is $15.5 billion, an increase of $139.3 million, or 0.9 percent, over fiscal year 2021 enacted levels. This budget request supports the Administration's goals to modernize the Nation's nuclear weapons stockpile and infrastructure to meet DOD deterrent requirements. Included in this request is funding for activities of NNSA's Office of Defense Programs which, in coordination with the Department of Defense (DOD), has maintained the effectiveness of the nuclear deterrent for almost 30 years without the need for additional nuclear explosive testing. In fiscal year 2021, the science-based Stockpile Stewardship Program allowed the Secretaries of Energy and Defense to certify to the President for the 25th consecutive year the nuclear weapons stockpile remains safe, secure, and militarily effective. This remarkable scientific achievement is made possible through the expertise of NNSA's world-class scientists, engineers, and technicians, and prior investments made in the necessary infrastructure and tools.

STOCKPILE MANAGEMENT

For Stockpile Management, the fiscal year 2022 budget request is $4.6 billion, an increase of $342.4 million, or 8.0 percent, over the fiscal year 2021 enacted level.

NNSA is requesting $771.7 million in fiscal year 2022 for the B61–12 Life Extension Program (LEP), which consolidates four variants of the B61 gravity bomb and improves the safety and security of a weapon that entered service in 1966. The B61–12 LEP is currently in Phase 6.5 and has achieved first production on most of its components and will achieve the system's first production unit (FPU) in the first quarter of fiscal year 2022.

NNSA is requesting $207.2 million in fiscal year 2022 for the W88 Alteration (Alt) 370, which supports the sea-based leg of the nuclear triad. The W88 Alt 370 is currently in Phase 6.5 and currently on track with a system FPU date in the fourth quarter of fiscal year 2021. Nearly all major components have completed their respective FPUs.

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[1] The fiscal year 2021 Enacted level does not include the mandated transfer of $91 million from Naval Reactors to Nuclear Energy for the operation of the Advanced Test Reactor.

NNSA is requesting $1.1 billion in fiscal year 2022 for the W80–4 LEP, which is currently in Phase 6.3, Development Engineering. The W80–4 LEP supports the U.S. Air Force Long Range Standoff (LRSO) program. Fiscal year 2022 will see a planned ramp-up of production development and design activities as the program transitions to Phase 6.4, Production Engineering.

NNSA is requesting $691.0 million in fiscal year 2022 for the W87–1 Modification Program, which will replace the aging W78–0 warhead. NNSA has planned first production in fiscal year 2030 to support fielding on the Ground-Based Strategic Deterrent ballistic missile system in the Mk21A reentry vehicle. The program will deploy new technologies that improve safety, security, and manufacturability. Efforts in fiscal year 2022 will focus on completion of the Weapon Design and Cost Report, an independent cost estimate, and entry into Phase 6.3.

The W93/Mk7 is a new program of record authorized by Congress in fiscal year 2021 to meet DOD requirements. Starting the W93 program in fiscal year 2021 ensured the development of the warhead coordinated with the Navy's Mk7 aeroshell program. The W93 will incorporate modern technologies to improve safety, security, and flexibility to address future threats, and will be designed for ease of manufacturing, maintenance, and certification. All the key nuclear components will be based on previously tested nuclear designs and will not require underground nuclear explosive testing to certify. NNSA is requesting $72.0 million in fiscal year 2022 for the program, an increase of $19.0 million, or 35.8 percent above the fiscal year 2021 enacted level. Fiscal year 2022 will focus on completion of Phase 1 activities and entry into Phase 2, Feasibility Study and Design Options.

PRODUCTION MODERNIZATION

The Production Modernization program focuses on the production capabilities of nuclear weapons components critical to weapon performance, including primaries, secondaries, radiation cases, and non-nuclear components. For Production Modernization, the fiscal year 2022 budget request is $2.9 billion, an increase of $363.1 million, or 14.3 percent over the fiscal year 2021 enacted level. Included in this request is funding for activities that support the Primary Capability Modernization, Secondary Capability Modernization, and Non-Nuclear Component Modernization programs.

Primary Capability Modernization includes the plutonium program and the high explosives and energetics programs. NNSA urgently needs to recapitalize our plutonium pit production fabrication capabilities to support our weapons modernization programs. High explosive and energetic materials are required for every weapon system in the stockpile and are also under increasing demand.

NNSA's priority infrastructure need is re-establishing a modestly sized production capacity for plutonium pits. The fiscal year 2022 budget request of $1.7 billion includes funding for plutonium operations and the plutonium pit production projects at Los Alamos National Laboratory (LANL) and Savannah River Site (SRS). At LANL, the Los Alamos Plutonium Pit Production Project advanced in the Critical Decision (CD) process from Critical Decision (CD)-0 to CD–1 (Alternative Selection and Cost Range), in April 2021. At Savannah River, the Department is working toward CD–1 by this summer. This two-site approach is necessary to re-establish the Nation's ability to produce plutonium pits in support of defense requirements, and to provide needed resilience against unplanned outages.

Secondary Capability Modernization includes our Uranium, Depleted Uranium, Lithium, Tritium, and Domestic Uranium Enrichment programs. The fiscal year 2022 budget request of $488.1 million for Secondary Capability Modernization is a $31.1 million, or 6.8 percent, increase over the fiscal year 2021 enacted budget. All these programs support the nuclear stockpile and face infrastructure and lapsed capability concerns. Major construction investments to address these infrastructure concerns are funded within the Infrastructure and Operations program. For example, NNSA is continuing its progress on the Uranium Processing Facility (UPF), which, when completed, will be one of the largest investments in Tennessee and one of the largest construction projects across the nuclear security enterprise since the Manhattan Project. UPF construction will support 2,500 good-paying jobs in 2022 and 1,100 jobs in 2023. NNSA is also working with its partners to increase production of tritium and is in the early phases of designing the Tritium Finishing Facility (TFF), to replace a 1950s-era facility. The United States no longer maintains a lithium purification capability and relies on material recycling as its main source, which will be exhausted soon. These operations currently take place in a World War II-era building well beyond its design life, putting both operators and processing at risk. NNSA plans to modernize lithium purification and processing operations in a new Lithium Processing Facility (LPF) built to modern standards.

Non-Nuclear Capability Modernization includes programs to modernize production of non-nuclear components for multiple weapon systems. Non-nuclear components are a significant portion of the costs for the warhead modernization programs due to the number of parts, their complexity, and the testing required to ensure they will continue to function over their required 20-to-30-year lifetimes.

This ongoing modernization of NNSA's production infrastructure is advancing at a critical time. As the Commander of U.S. Strategic Command, Admiral Charles Richard, has testified, "We simply cannot continue to indefinitely life extend Cold War leftover systems...and successfully carryout our national strategy. A particular concern is the aging nuclear weapons stockpile and supporting infrastructure and we can reach a point where no amount of money will adequately mitigate the operational risks the Nation will face due to infrastructure and human talent capability losses." Put another way: time is money. Continued recapitalization is imperative, otherwise there will be a point at which no amount of money will be able to mitigate the operational risks and losses to infrastructure capabilities that accrued over time.

STOCKPILE RESEARCH, TECHNOLOGY, AND ENGINEERING

The fiscal year 2022 budget request for Stockpile Research, Technology, and Engineering (SRT&E) is $2.7 billion, a decrease of $123.1 million, or 4.4 percent below the fiscal year 2021 enacted levels. The decrease reflects a rebalancing of efforts within NNSA to focus on near-term priorities to support the stockpile. SRT&E will continue to focus on the implementation of the Enhanced Capabilities for Subcritical Experiments (ECSE) and various activities in preparation to accept and operate NNSA's first Exascale high performance computing system in 2023. Both capabilities provide data in support of the W80–4 LEP requirements and the W87–1 modification. SRT&E provides the data and tools that underpin science-based stockpile decisions, including the knowledge and expertise needed to maintain confidence in the nuclear stockpile without the need for additional underground nuclear explosive testing.

ECSE will produce experimental data to enable the assessment of the current stockpile and the certification of the future stockpile without the need to return to explosive nuclear testing. This capability is needed to help underpin confidence in the W80–4 LEP, W87–1 Modification, and future warhead acquisition programs. NNSA is requesting $215.6 million in fiscal year 2022 for the program, the same as the fiscal year 2021 enacted level.

The Exascale Computing Initiative (ECI) will provide NNSA with next-generation simulation capabilities to support weapons design, warhead assessment and certification, and continued development of the science needed to support the nuclear stockpile over the long-term. NNSA remains on track to accept and operate NNSA's first Exascale high performance computing system for program use in 2023.

The Inertial Confinement Fusion (ICF) program provides high energy density (HED) science capabilities and expertise to provide the data needed to advance warhead performance and production science, and to inform design choices for warhead acquisition programs. In addition, activities like the pursuit of ignition provide not only important scientific understanding, but a unique training environment for the workforce. NNSA is requesting $529.0 million in fiscal year 2022 for the program, a decrease of $46.0 million or 8.0 percent, from the fiscal year 2021 enacted level. The decrease reflects a decision to rebalance priorities within the SRT&E portfolio. These programs, along with our advanced computing and simulation, technology maturation, academic programs, and other SRT&E missions are essential to maintaining our confidence in the stockpile.

Every year, NNSA provides grants and cooperative agreements with top universities across the country. Programs such as the Stewardship Science Academic Alliances Program and the Minority Serving Institution Partnership Program (MSIPP) facilitate in recruiting the next generation of scientists and engineers for our nuclear security enterprise, and conducting cutting-edge science in national security and nonproliferation. In support of the President's effort to eliminate inequities in Science, Technology, Engineering, and Math (STEM), MSIPP's mission is to create and foster a sustainable STEM-pipeline that prepares a diverse workforce of world class talent through strategic partnerships between Historically Black Colleges and Universities, Tribal Colleges and Universities, and other Minority Serving Institutions and the nuclear security enterprise.

INFRASTRUCTURE AND OPERATIONS

Infrastructure is the foundation that supports all NNSA missions. Modern, efficient, sustainable, and resilient infrastructure is needed for the nuclear deterrent, nonproliferation, counterterrorism, emergency response, leading-edge research, and

solving the climate crisis. The deterioration of facilities built during the Manhattan Project and Cold War eras threatens NNSA's ability to execute its mission. Today, the average age of NNSA's facilities is 47 years old and of the agency's $116 billion worth of real property infrastructure, nearly 60 percent is beyond its design life and half of all facilities are in poor condition. NNSA's infrastructure includes, among other things, office buildings, light laboratories, emergency operations centers, fire houses, roads, utilities, and the specialized equipment used to support our missions.

The fiscal year 2022 budget request for Infrastructure and Operations is $3.6 billion, a decrease of $497 million, or 12.2 percent below the fiscal year 2021 enacted level. The decrease largely results from the completion of construction projects in fiscal year 2021, the prioritization of funding for programmatic plutonium construction funded within Production Modernization, the beginning of the ramp down of funding for the Uranium Processing Facility project, and the use of carryover balances to fund work within the Chemistry and Metallurgy Research Replacement project.

NNSA infrastructure must be resilient and provide the capabilities and capacities for executing its vital national security missions. This requires an array of complementary strategies, including minor and major construction projects, short-term leasing, purchases, and timely disposition of excess facilities. In partnership with the EM program, DOE is strategically demolishing high-risk excess facilities such as the former Biology Complex at Y–12. Its removal enhances safety and clears land for NNSA missions at the site. We must modernize and upgrade antiquated infrastructure and address safety and programmatic risks through strategic, risk-informed investments that directly support our nuclear weapons and nonproliferation programs.

NNSA is continuing its progress on the Uranium Processing Facility (UPF), which, when completed, will be one of the largest investments in Tennessee and one of the largest construction projects across the nuclear security enterprise since the Manhattan Project. UPF construction will support 2,500 good-paying jobs in 2022 and 1,100 jobs in 2023. NNSA is also in the early phases of designing the Tritium Finishing Facility (TFF). The United States no longer maintains a lithium purification capability and relies on material recycling as its main source. The current Program of Record provides sufficient lithium supply through 2035. These operations currently take place in a World War II-era building well beyond its design life, putting both operators and processing at risk. NNSA plans to modernize lithium purification and processing operations in a new Lithium Processing Facility (LPF) built to modern standards.

Also, key are the personnel needed to safely and securely operate and maintain NNSA facilities. As NNSA mission scope increases, so does the demand for personnel to support new facilities and capabilities being brought on-line. Many of these sites across the complex will require additional staff to support moving to 24/7 operations. These individuals are essential to minimizing unplanned outages and to supporting safe and secure operations, particularly in high hazard operations.

DEFENSE NUCLEAR SECURITY EFFORTS

The Office of Defense Nuclear Security's (DNS) primary mission is protecting the facilities, people, and assets that are critical to achieving NNSA's important national security missions. DNS's fiscal year 2022 budget request is $847.6 million, an increase of $58.6 million, or 7.4 percent, over the fiscal year 2021 enacted amount. NNSA is making key investments to recapitalize aging physical security infrastructure through the Security Infrastructure Revitalization Program. Growth across the nuclear security enterprise, including plutonium pit production efforts, has led to increased security requirements. To mitigate the threat from unmanned aircraft systems (UAS), DNS is installing counter UAS systems at Y–12, the Pantex Plant, and the Nevada National Security Site.

DEFENSE NUCLEAR NONPROLIFERATION

NNSA's Office of Defense Nuclear Nonproliferation (DNN) is critical to implementing the President's call to "lock down fissile and radiological materials around the world." The fiscal year 2022 budget request for the DNN account is $2.3 billion, an increase of $4.0 million, or 0.2 percent, over the fiscal year 2021 enacted level.[2] DNN works worldwide with our international partners to prevent state and nonstate actors from developing nuclear weapons or acquiring weapons-usable

[2] The fiscal year 2022 amount does not include the proposed cancellation of $330 million of prior year balances from the Mixed Oxide Fuel Fabrication Facility project.

nuclear or radiological materials, equipment, technology, and expertise. Around the globe, DNN has eliminated the need for weapons-usable material at over 100 civilian sites and removed over 7,200 kilograms of highly enriched uranium (HEU) and plutonium from almost 50 countries, achieving a permanent reduction in these threats from these materials. DNN's unique capabilities are critical to America's national security and welfare: from promoting and supporting International Atomic Energy Agency (IAEA) safeguards agreements internationally; to supporting diplomatic arms control efforts such as the successfully extended New START treaty with Russia; to partnering with United States industry to support non-HEU based production of the vital medical isotope molybdenum-99, which is used in 40,000 procedures every day in the United States.

NUCLEAR TERRORISM AND INCIDENT RESPONSE

The fiscal year 2022 request for the Nuclear Counterterrorism and Incident Response (NCTIR) Program is $370.8 million, a decrease of $6.7 million, or 1.8 percent below, the fiscal year 2021 enacted level. The fiscal year 2022 request is lower due to the transfer of management responsibility and authority for IT and Cyber services and solutions for the Emergency Communications Network from NCTIR to NNSA's Office for Information Management.

NCTIR includes two subprograms: Emergency Operations (EO) and Counterterrorism and Counterproliferation (CTCP).

EO provides the structure and processes the Department uses to prevent, prepare for, respond to, recover from, and mitigate all-hazards emergencies that threaten life and property. In addition, EO provides the framework for building, assessing, and improving organizational resilience to ensure uninterrupted performance and delivery of the Department's Essential Functions under the Presidential Policy Directive 40, Executive Order 13961, the National Nuclear Security Act, and the National Response and Planning Frameworks.

CTCP provides capabilities to counter and respond to nuclear incidents and accidents worldwide. The foundation of NNSA's diverse missions is an unparalleled command of nuclear science, which is harnessed to understand and contend with global nuclear threats. CTCP's expertise influences a wide range of policies to keep nuclear material beyond the reach of non-state actors, including security standards for the storage and transport of such material. The office shares knowledge of nuclear and radiological threats with federal, state, local, tribal governments, and international partners by conducting training, exercises, and information exchanges to strengthen emergency preparedness and response. CTCP also develops tools to impede the efforts of proliferant states to obtain nuclear capabilities.

CTCP manages the Nuclear Emergency Support Team (NEST), a cadre of on-call technical specialists who are trained and equipped to respond to all manner of nuclear events. Notable NEST capabilities include mobile teams that can search for nuclear devices and technical personnel whose knowledge of nuclear weapons is used to characterize and defeat such threats. NEST features nuclear forensics capabilities to identify the origin of nuclear material outside of regulatory control or used in a threat device. These capabilities constitute an important element of the U.S. deterrence strategy, by allowing the United States to credibly threaten retaliation against any state that facilitates an act of nuclear terrorism.

NAVAL REACTORS

The Office of Naval Reactors remains at the forefront of technological developments in naval nuclear propulsion by advancing new technologies and improvements in naval reactor performance. This preeminence provides the U.S. Navy with a commanding edge in naval warfighting capabilities. Naval Reactors has given the United States unmatched reach with an unparalleled record of over 169 million miles safely steamed on nuclear power and over 7,300 reactor-years of operation.

The fiscal year 2022 budget for Naval Reactors is $1.9 billion, an increase of $182.7 million, or 10.8 percent, over the fiscal year 2021 enacted level.[3] The budget request supports Naval Reactors' three major projects—the Columbia-class reactor plant development, the refueling overhaul of a research and training reactor in New York, and the construction of the Naval Spent Fuel Handling Facility in Idaho. Naval Reactors is committed to supporting the operational nuclear fleet, continuing research and development efforts for future generations of nuclear-powered war-

[3] The fiscal year 2021 Enacted level does not include the mandated transfer of $91 million from Naval Reactors to Nuclear Energy for the operation of the Advanced Test Reactor. The fiscal year 2022 amount does not include the proposed cancellation of $6 million of prior year balances.

ships, and making progress on both the recapitalization of laboratory facilities and the environmental remediation of legacy responsibilities.

NEW ERA OF PROGRESS FOR ENVIRONMENTAL MANAGEMENT MISSION

As important as the missions of today and tomorrow are, the Cold War left an indelible mark on America. It is the mission of the Office of Environmental Management (EM) is to address the legacy of nuclear weapons development and government-sponsored nuclear energy research that has played a significant role in domestic security and prosperity.

As the largest environmental cleanup program in the world, EM plays a key role in the Department's overarching mission to protect the planet. The Department's fiscal year 2022 budget request of $7.6 billion will help EM continue to make progress in fulfilling the government's responsibility to clean up the environment in communities that supported nuclear weapons programs and government-sponsored nuclear energy research.

Building on past success, the EM program is entering a new era of cleanup accomplishments. The fiscal year 2022 request supports a ramp up in EM's ability to tackle tank waste—one of the Department's largest environmental challenges and financial liabilities. The request will also enable continued progress in infrastructure improvements at the Waste Isolation Pilot Plant and support an increased rate of waste shipments from across the EM program. In addition, EM will continue to advance facility demolition and risk reduction projects across the program.

The fiscal year 2022 request includes $6.8 billion for defense environmental cleanup activities, which covers most major EM sites. The request of $1.5 billion for the Office of River Protection will enable EM to remain on track to initiate tank waste treatment at the Hanford site by the end of 2023 through the Direct Feed Low Activity Waste (DFLAW) approach. In fiscal year 2022, EM expects to achieve a significant milestone in the start of tank waste treatment through the initiation of operations at the Tank-Side Cesium Removal (TSCR) unit, which is necessary to prepare waste for DFLAW treatment. Also at Hanford, the request of $1.0 billion for the Richland Operations Office will support continued risk reduction activities at Hanford's Central Plateau and along the Columbia River corridor, including remediation activities at Building 324 and the transfer of cesium and strontium capsules to dry storage.

At the Savannah River Site, the request of $1.7 billion will help EM accelerate tank waste treatment through operation of the Salt Waste Processing Facility and the Defense Waste Processing Facility. The request will also continue operations and maintain a high state of readiness for H Canyon, the only chemical separations facility remaining in operation in the United States. At the Idaho Cleanup Project, the request of $381 million will continue advancing the Integrated Waste Treatment Unit (IWTU) toward hot operations. This facility is necessary to address the last remaining tank waste at the Idaho National Laboratory. In addition, exhumation of buried waste and treatment of transuranic waste sludge will complete, allowing the site to proceed with closure of the Radioactive Waste Management Complex.

The request also supports key modernization and infrastructure recapitalization priorities at the Waste Isolation Pilot Plant (WIPP). Specifically, the request of $437 million will help ensure WIPP is equipped to meet the needs of the national transuranic waste disposal mission by enabling transportation activities from multiple locations required for sustained operations of up to 14 shipments per week.

EM's fiscal year 2022 budget also facilitates the Department's broader national security and scientific research missions. The request includes $436 million in defense environmental cleanup funding for Oak Ridge, which will enable EM to continue cleanup operations at the Oak Ridge National Laboratory (ORNL) and Y–12 National Security Complex excess facilities. The request enables EM to advance progress on several near-term priorities at Oak Ridge including the disposition of the remaining uranium-233 inventory at ORNL, addressing transuranic debris and sludges, and continuing design of the On Site Waste Disposal Facility.

At the Los Alamos National Laboratory, the request of $333.5 million will support EM initiating deactivation and decommissioning (D&D) work at the Ion Beam Facility, along with remediation activities at the DP–Road site, groundwater treatment and transuranic waste shipments to the Waste Isolation Pilot Plant. The request also includes $35 million to support continued D&D efforts for excess facilities at the Lawrence Livermore National Laboratory.

As the Department enters this new era of cleanup progress, EM is working to build a workforce for the future that promotes diversity and inclusion. That includes high-quality jobs in environmental cleanup where workers from all backgrounds can make a living and make a difference. The budget request includes a significant

boost in funding to expand the Minority Serving Institutions partnership program to a new EM STEM Manufacturing and Cybersecurity Consortium. This program will be primarily focused on Historically Black Colleges and Universities and other Minority Serving Institutions with research specialties needed to advance the EM mission.

EM's fiscal year 2022 request reflects a planning approach that will boost the Department's ability to complete its clean up mission. EM is prepared to put these resources to work to enhance environmental protections and remediate sites so they can be transitioned to future uses in local communities that helped the Nation win the Cold War and maintain peace for decades. As we do, the Department will work hand-in-hand with workers, unions, Tribal Nations, local communities, and Congress to plan for this next era of cleanup.

ENHANCING CYBERSECURITY

As you all are aware, a ransomware attack happened on May 7th that led to the shutdown of the Colonial Pipeline Company's largest fuel pipeline on the East Coast. The White House asked the Department of Energy to coordinate a whole-of-government effort to ensure that the company had the resources necessary to resume operations as quickly and safely as possible, while moving fuel supplies to impacted areas by other means. This incident was a stark reminder of the imperative to harden the Nation's critical infrastructure against these serious and growing cyber threats.

As the Sector Risk Management Agency for cybersecurity in the Energy Sector, the Office of Cybersecurity, Energy Security, and Emergency Response, or CESER, leads the Department's efforts to safeguard the Nation's critical energy infrastructure against growing and evolving cyber threats and attacks. CESER works closely with the Cybersecurity and Infrastructure Security Agency (CISA), and public and private sector partners to strengthen the energy sector's risk management capabilities and enhance sector-wide situational awareness and threat analysis. The Office is advancing policies, technologies, and risk management tools that will increase the visibility of physical and cyber threats in the operational technology environment, mature the cybersecurity supply chain, and support exercises and partnerships with states and other organizations. Earlier this year, DOE and CISA announced a partnership with the electricity sector to develop the 100-day Industrial Control Systems Cyber Initiative. The initiative will strengthen the security of electricity critical systems and increase the visibility of the systems that control the Nation's utility operations. Ultimately, the initiative will help pave the way for efforts to secure critical infrastructure in other sectors.

In the current threat environment, the Department cannot afford to neglect its cybersecurity capabilities, which serve as frontline assets that protect the information, systems, and networks necessary to execute its mission. Information Technology and Cybersecurity enable every element of DOE/NNSA's missions. To meet future requirements, the Department must modernize its outdated and legacy technology.

The Office of the Chief Information Officer leads the Department's efforts to modernize and improve cybersecurity defenses to protect federal systems and information at our national laboratories, power marketing administrations, plants, sites and headquarters. Additionally, we remain focused on strengthening our ability to respond and recover from cybersecurity incidents when they occur.

The Department is targeting cybersecurity investments on lessons learned from recent cybersecurity attacks and implementing the Executive Order to Improve the Nation's Cybersecurity, including:

- Accelerating the movement to a zero-trust security model and secure cloud services;
- Securing the software supply chain; and
- Improving cybersecurity threat hunting and response in both information technology and operational technology.

I can assure you that cybersecurity will remain a top priority for the Department, and these investments will posture DOE to defend against an ever-evolving landscape of cyber threats.

CONCLUSION

DOE is charged with the truly unique and awesome responsibilities of advancing national security through the application of science. NNSA's weapons activities, nonproliferation, and naval reactors programs are essential to promoting America's national security and keeping our people safe. By applying the highest environmental standards and the best that new technology has to offer, DOE can ensure

that science is harnessed to bolster America's national security, keep our edge in research and technology, and build an economy that reflects what we value most—our people. We are mindful of the resources entrusted for these vital missions and greatly appreciate the ongoing support of this Committee and Congress.

Chairman REED. Well, thank you, Madam Secretary. Dr. Verdon, do you have a statement?

Dr. VERDON. No, sir. Not at this time.

Chairman REED. Well, thank you very much. Let me begin with the Secretary. Once again, thank you for your service in so many ways to the Nation. I deeply appreciate it.

As I mentioned in my opening statement, last year the Committee spent a great deal of time trying to iron out the relationship with the Department of Defense and the Nuclear Weapons Council, and from your perspective, is that process working now? Are we getting a full, integrated conclusion from both Defense and Energy?

Secretary GRANHOLM. I am happy to say that it is, sir. It is very intentional. We are absolutely working hand-in- glove and are coordinated in our goals, our approach, and in the budget.

Chairman REED. Well, thank you, Madam Secretary.

Dr. Verdon, plutonium facility construction costs are about $20,000 to $25,000 per square foot, on average, based on what you have been doing out at Los Alamos. In 2018, you performed an engineering study in which Los Alamos originally proposed a modular 25 [sic]-square-foot building to be built next to their plutonium facility, at roughly $5 billion, and early the Nuclear Weapons Council approved this approach.

That was one approach, but the administration is firmly committed now to two facilities, one in Savannah and one in Los Alamos. But the facility in Savannah's cost growth has gone from $4.6 billion to $11 billion. I wonder, looking at the metric of square feet and what you have done in Los Alamos, are you considering applying the same type of production to Savannah to lower costs, or alternatives to try to lower costs?

Dr. VERDON. Sir, we are looking at—the original cost of $4.2 was really a top-down estimate. The present cost we have now are the first time the subject matter experts have actually built a bottoms-up cost. So, you know, the costs are actually comparable now to the Los Alamos project also. So there is quite a bit of consistency between the two.

But we still find that the two-site solution is the most schedule- and cost-efficient way for us to reach the 80 pits a year, because as you mentioned, to do 80 pits at one site would require a whole new facility to be built, which would add years and quite a bit of money to build that facility. We are finding that the approach that we are using for MOX and Los Alamos are very consistent, and all of the latest information we have, which is basically the best we have had since we started this, still indicates that this is the best path to reach the 80 pits per year that the DOD has identified.

Chairman REED. So roughly the square foot cost at Savannah will be equivalent to the cost at Los Alamos?

Dr. VERDON. It look a little different from the point that the Los Alamos Plutonium Facility-4 actually has a lot of the infrastructure already in the building, where the MOX facility, we will have to install a lot of the environmental equipment that is already present

at Los Alamos, we will be installing it. So when you take that into account it would look more, but it is going to be, effectively, if you try to neutralize all that they are very consistent. In fact, we utilized the information that we obtained from installing the equipment for 1 to 10 pits already at Los Alamos to inform the costs of both sites.

Chairman REED. Thank you. Let me ask another question, Dr. Verdon. NNSA has been directed by the Nuclear Weapons Council to begin exploratory studies of submarine warhead to be sealed in the mid-2030s, and my understanding is that this effort is being undertaken with the United Kingdom. Can you, in this open session, describe what activity we will be participating with in the United Kingdom, and the necessity for this weapon system?

Dr. VERDON. Well, the necessity, I would say you would have to speak to the STRATCOM Commander for that, because he sets those requirements. But our work with the United Kingdom, which is an independent development of their warhead, we tried to synergistically leverage each other's abilities to make sure that we have the highest confidence that both systems will work. Where they integrate is more back into, again, the Navy, so Admiral Wolfe, when it comes to integrating on the missile. So that is why it is necessary for us to work closely together to make sure that both what we build for the United States and what they build for their country will function correctly on the missiles, which are common.

Chairman REED. Thank you very much. Again, Madam Secretary, Dr. Verdon, thank you very much.

With that I would recognize the ranking member for his questions. Senator Inhofe.

Senator INHOFE. Okay, that is good. Thank you. Thank you, Mr. Chairman. We are putting this exhibit up. I know you have both seen it, and you are very familiar with it. But we want to make sure it is in view of the camera and make sure that everyone understands what we are trying to say here.

Last summer, the previous NNSA administrator testified that more than a third of the NNSA's facilities are over 60 years old. We know that, and we have heard that, and that is a problem.

Secretary Granholm, I would first ask you, have you personally seen and witnessed and toured these facilities?

Secretary GRANHOLM. No, I have not yet because of the COVID restrictions, but I look forward to doing so.

Senator INHOFE. Yes. I knew that was your answer, and I know that is right, and you and I talked about this so I wanted to ask you on the record. Will you personally do that?

Secretary GRANHOLM. Absolutely, Senator.

Senator INHOFE. That is good. That is good. When our adversaries are rapidly building up their nuclear arsenals, why would be cutting the funding of our basic facility maintenance?

Now everybody knows that during the last administration there was a problem, a relational problem, between your predecessor and me and some of the others up here. I want to make sure that we all want to do the same thing, and from our conversations I believe that we do, and I am looking forward to a great relationship, unlike the previous administration's relationship with me.

Dr. Verdon, you are an expert. In the past year's NNSA, official stated that they need real sustained growth every year to keep the nuclear modernization on track. How will flat or reduced budget affect the NNSA ability to meet the DOD requirements over time, should that be the case? Would you expand on that a little bit, on what would be the effect if we failed to come up with the right approach to this?

Dr. VERDON. Yes, sir. So when we put the 2022 request together we took a hard look at all of the requirements as we understood them, and, you know, given to them by the Department of Defense and what we had to do to meet those requirements. We did the best risk balancing that we could across the complex. We ensured that the warheads got the funding that they absolutely needed, that the major facility modernizations got the funding that they absolutely needed.

In the area of infrastructure and operations, what we looked at there that was one of the areas during the COVID pandemic that we actually had to do some slowdowns. We recognize that we will have higher than usual carryovers in those areas. So that is why we reduced some of the requests that we originally were thinking about. We reduced them in recognition of the fact that we just could not put the number of people necessary within the square footage to get the work accomplished in a safe and effective manner.

So that was one of the reasons we lowered the request from some initials, was just the realization that COVID had a larger impact in that area. But again, we think we can accomplish—you know, we are working with the sites, that we can accomplish all of the work required to keep the infrastructure moving forward. As I say, all the major facility modernizations are supported, and so that was a lot of the thinking.

Then the other important area in the infrastructure modernization that looks like an artificial downturn is that the uranium processing facility is at its highest funding in fiscal year 2021, and it is beginning its natural roll-off in fiscal year 2022. So that almost accounts for $100 million or more of the reduction in fiscal year 2022, is just that natural roll-off that is beginning at the uranium processing facility.

I think the important message is we believe we can accomplish, with the budget request as presented, all of the key things that we have to do in fiscal year 2022.

Senator INHOFE. Dr. Verdon, it is understandable some of the things that we had to go through during the pandemic, and we do understand that, and we understand the results of that. But now we are out of that and we are on our way, and would you agree with the statements that I made about our adversaries, what they have been doing, and the necessity for us to get back in the game?

Dr. VERDON. Yes, I agree. I mean, your pictures are worth 1,000 words. We have a lot of infrastructure work to do, and as I say, we kept a major focus on the modernization because that, in some sense, is deferred maintenance as well. Some of the buildings, the faster we can replace them, the better off we are, instead of putting money to try to keep old buildings functioning.

Senator INHOFE. In your background, have you ever seen more deplorable conditions than we are witnessing here?

Dr. VERDON. Some of those buildings, they are eye- opening to go through them, and that is some of the challenges we face is still trying to keep them functioning. The sites are commended for still accomplishing the work in some of those facilities.

Senator INHOFE. Well, I thank both of you, and thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Inhofe. Let me recognize Senator Kaine, please.

Senator KAINE. Thank you to the chair and ranking member, and thank you to the witnesses for your service, and especially Governor Granholm and I served together as governors, and it is a real treat to see you here before the Committee.

A concern that I had in the previous administration was a policy that is known as Part 810 authorizations, when the United States—Part 810 describes a process by which the United States vets and then approves the transfers of sensitive nuclear technology to other nations. It had long been the practice of administrations of both parties that when Part 810 agreements were reached, and limited transfers of sensitive nuclear technology to other nations was allowed, that the administrations would notify Congress of that fact.

The Part 810 process involves DOE and other agencies, looking at the request for the transfer of nuclear technology, and it involves signoff by a number of agencies, including the DOE.

During the past administration, there began to be a practice which I believe was unprecedented, of the U.S. Government doing transfers of sensitive nuclear information to other nations, and in particular, to Saudi Arabia, without Congress being notified. At a hearing, I believe it was 2 years ago, when we had Secretary Kerry before us, I asked him about such transfers, and in particular were transfers being made to Saudi Arabia, and in extreme particularity, were we transferring nuclear technology to Saudi Arabia after the assassination by the Saudi Arabian Government of Virginia resident and Washington Post journalist, Jamal Khashoggi.

I was not given an answer about that at the hearing. I was promised information about it, and it took a very, very long time for me to finally get the information from the administration, and I give credit, actually Senator Jim Risch, then chair of the Senate Foreign Relations Committee, eventually helped me get this information.

But what I was hoping, Madam Secretary, is that you would commit to us that the Biden administration would return to past practice, and when there is a decision made by the administration to transfer sensitive nuclear technology to other nations that Congress be informed of that. It does not seem to be too much to ask for the SAS Committee, the Intel Committee, the Foreign Relations Committee, and others to know if we are transferring sensitive nuclear technology to other nations.

So just a bottom-line question, could you tell us that you will return to past practice and keep Congress informed when Part 810 authorizations are being utilized to transfer nuclear technology to other nations?

Secretary GRANHOLM. Yes, Senator. You have my word.

Senator KAINE. Thank you. Mr. Chair, I yield back.

Chairman REED. Thank you, Senator Kaine, and now let me recognize Senator Rounds, please. Excuse me, Senator Rounds, but Senator Fischer is on Webex. Senator Fischer via Webex, please.

Senator FISCHER. Thank you, Mr. Chairman. Dr. Verdon, what lessons do you think we can learn from our recent experience with pit production? I know this has been an objective since Rocky Flats closed in 1989. It was part of President Obama's modernization commitment that he made with the New START Treaty. But CMRR was cancelled in 2012, and NSA did not begin its analysis of alternatives for follow-up options until 2016. That analysis failed to select a preferred alternative. It was followed by a subsequent engineering analysis, and finally, after 2 years of study, NNSA selected its current approach, which we are now discovering is not going to make the deadline for production.

Clearly the challenge we faced was underestimated. [Inaudible] about having time to spare they were wrong. What do we do differently to make sure that this does not happen again?

Dr. VERDON. Thank you for the question. It is a very good question that we are actually working very hard on. We are trying to follow a very rigorous process for when we identify requirements to when we actually commit to doing the actual construction. What we are finding is we have to find a way to improve the fidelity of the information we have earlier in the project, because, you know, we are pushing through on the pit production, and when we achieved Critical Decision 1 that is only 30 percent design complete. Critical Decision 2 is when we get to 90 percent design complete.

What we are trying to figure out is how to get more of that information up front without committing the country yet to a final decision and making sure that we bring to the country all of the right options still. So we are trying to walk that fine line of how to improve the fidelity of the information, and the costing information, scheduling information earlier, but literally what we are finding is takes doing the detailed design work, because all of these facilities are unique, one-of-a-kind. That is both good news and bad news. It is good news that there are not too many of these around the world, and it is rougher news from the point of view that they are not commodity, they are not off the shelf. Each one is unique.

But we are working and we recognize it is an area where we have to improve on how to bring higher fidelity information earlier into the process rather than later, which is how we are doing it right now, as we improve the fidelity as we go along.

Senator FISCHER. Thank you very much. Madam Secretary, I know this predates your tenure, but you are in a position to apply the lessons learned and ensure that we do not repeat these mistakes. So I would also like to hear your views on this.

Secretary GRANHOLM. Well, I obviously defer to the expertise of the gentleman to my left, because his knowledge and his management of the production and the time frame and the estimates are well grounded in his experience. I just have to say that, you know, as the Energy Secretary, the relationship between NNSA and DoE and the sharing of information like this has been incredibly impor-

tant for me, just as a starting matter, but also the pledge to continue to work closely with NNSA, in my learning of the production challenges, the estimate challenges, the managerial challenges, the personnel recruitment issues that NNSA is experiencing, which is reflected across society, frankly.

Senator FISCHER. Very good. Good to hear. Thank you.

Also, Secretary Granholm, Section 179 of Title 10 requires that the Nuclear Weapons Council, to make certification regarding the adequacy of NNSA's budget, the certification is required to be submitted with the budget, and that was released on May 28th, but this Committee has still not received it. I understand the budget process this year is irregular, but let me ask you this. We have DOE and NNSA, have they begun discussions with members of the Nuclear Weapons Council about next year's budget, so that the Council is in a position to provide a certification when it is submitted to Congress, as required?

Secretary GRANHOLM. Oh yes. We have been in lots of discussions with the Council about the budget that you are considering. I believe they are going to be certifying that budget, and clearly we will continue those conversations going into the next year after this.

Senator FISCHER. Thank you very much. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Fischer. Senator Rosen must preside, so I want to thank Senator King for yielding. Senator Rosen, you are recognized.

Senator ROSEN. Thank you, Senator King, and thank you, Chairman Reed and Ranking Member Inhofe, and I appreciate both your service and being here today.

I want to quickly talk about the Nevada National Security Site and our infrastructure needs, because when I last visited there I saw the ongoing construction project at the U1a facility for enhanced capabilities for the subcritical experiments that we do there, the ECSE. I am excited that Nevada National Security Site was going to house the most capability weapons radiographic system in the world.

So Dr. Verdon, could you provide us with an update on the upgrade to the ECSE facility at the U1a complex and tell us how the new facility will improve our Stockpile Stewardship Program's scientific capabilities, including a very important understanding of plutonium?

Dr. VERDON. Yes. We are moving forward, as you say, with the ECSE, which is really two parts. One is actually the construction of the underground facility, which is moving forward and is meeting all of their objectives, and the development of the radiographic equipment, which is also making progress on schedule. So the project is one of our highest-focused areas and the labs and sites are working very hard to make sure that that is met.

Yes, it will be a world-class facility when completed, and it will give us information that we just have not had access to since we did nuclear tests. So this is a key technological advancement in that regard, and will actually decrease the technical need to ever return to testing once we complete this facility.

Senator ROSEN. Now that you have said that I am awfully concerned that the President's budget request proposes an 11 percent cut to the Nevada National Security Site. So how is that going to impact the critical mission that we are going to have, that we have there, ongoing and into the future, and maintain our superiority?

Dr. VERDON. Yes, so the funding to all the critical, you know, the high-priority areas has been maintained. There are a few areas that we completed projects and we rolled them off. But there are others that are going to be starting soon. But all of the major projects, like utility upgrades and the ECSE and other activities have all been funded at the requisite and required levels.

Senator ROSEN. Thank you. I would like to move on to you, Secretary Granholm, and talk a little bit about the plutonium removal. In fall of 2018, the Department of Energy secretly—secretly—shipped one half a metric ton of weapons-grade plutonium from South Carolina to the Nevada National Security Site. As part of an effort to restore trust with the people of Nevada, NNSA committed to begin that removal of the material no later than 2021, completing the removal by 2026.

Can you provide us with an update on the plan to remove the plutonium, and I do understand that one-half metric ton of this plutonium will be used for pit production activities at Los Alamos, and so I know it is critical that it gets there, Secretary.

Secretary GRANHOLM. Yes. The commitment that we made with the state stands. We will remove, and continue to remove that plutonium, consistent with that agreement.

Senator ROSEN. Dr. Verdon, can you—if you cannot do it now, can you provide to the Committee in writing an update on the status of Los Alamos achieving their 30 pits per year, and how this does rely on the materials being transported from the Nevada National Security Site?

Dr. VERDON. We will be happy to do so.

[The information referred to follows:]

Secretary GRANHOLM. The Department of Energy's National Nuclear Security Administration (DOE/NNSA) remains committed to remove the weapon-grade plutonium shipped from South Carolina in 2018 and currently staged at the Nevada National Security Site (NNSS). This effort is crucial to support Los Alamos National Laboratory's (LANL) mission to produce 30 plutonium pits per year (ppy) beginning in the year 2026. Pursuant to a U.S. District Court order, DOE/NNSA was required to remove one metric ton of plutonium from South Carolina by 2019. The one-half metric ton of weapon-grade plutonium that was shipped from South Carolina to Nevada before November 2018 is material that will be utilized to meet NNSA's pit manufacturing objectives at LANL. DOE/NNSA committed to commence removal of this material from Nevada beginning in calendar year 2021 and to complete removal by the end of calendar year 2026. DOE/NNSA remains on track and committed to meeting the agreement regarding removal of this plutonium from Nevada.

Dr. VERDON. Department of Defense (DOD) objectives and federal law require re-establishing the capability to produce no fewer than 80 war reserve plutonium ppy. In 2018, the Nuclear Weapons Council (NWC) endorsed the NNSA two-site strategy for pit production. This includes expanding existing capabilities at LANL's Plutonium Facility (PF–4) to produce no fewer than 30 ppy at LANL during 2026. Work to implement 30 ppy production capacity at LANL is progressing. The Los Alamos Plutonium Pit Production Project (LAP4) to install the equipment and infrastructure necessary to meet LANL's pit production mission objectives achieved Critical Decision-1, Approve Alternate Selection and Cost Range, in April 2021 and work continues to finalize the project design in support of CD–2, Approve Performance Baseline. Concurrently, under the auspices of the joint Pit Product Realization Team, LANL continues to produce a series of pits to prove-in and qualify manufacturing

processes and enable production of the first war reserve plutonium pit in 2023. The weapon-grade plutonium currently staged at the Nevada National Security Site (NNSS) is in the process of being moved to LANL to support this element of NNSA's pit production mission. Plutonium removal from NNSS began in 2021 and will be completed by the end of 2026.

Senator ROSEN. Thank you, and the last question I have is about radioactive waste shipments, because in 2019, Nevada learned that the Department of Energy had been shipping incorrectly labeled low-level radioactive waste from the Y–12 facility in Oakridge to the Nevada National Security Site. This waste was, in fact, mixed, low-level radioactive waste, which violated the waste acceptance criteria for NNSS.

Currently, NNSS lacks waste verification equipment to verify that waste received for disposal meets the acceptance criteria. This technology and additional personnel are critical if we are able to do our job. Over 1 million cubic feet of low-level radioactive mixed waste may come to us for disposal each year.

Secretary Granholm, would you support funding for waste verification technology at the NNSS to ensure that the site is receiving and disposing the proper waste and avoiding further mislabeled shipments?

Secretary GRANHOLM. Yes. I am assuming that Dr. Verdon would agree that that is important.

Senator ROSEN. Thank you, and I yield back. I have 10 seconds. I am going to preside. Thank you again for allowing me to——

Chairman REED. Thank you, Senator Rosen. Let me now recognize Senator Rounds, please.

Senator ROUNDS. Thank you, Mr. Chairman. I want to say Governor Granholm, but Secretary Granholm, it is good to see you again. It is. I think the governor title is probably a better title, but nonetheless, welcome.

Secretary GRANHOLM. Thank you.

Senator ROUNDS. Dr. Verdon, thank you for your service, and we appreciate you being here in front of us today. I have got a series of questions, but I want to focus back on, and come back to where Senator Fischer was leading to begin with, with regard to the budget. But I want to lead into it by visiting with Dr. Verdon for just a few minutes, concerning the infrastructure issues.

I would like to begin by just simply asking how confident are you that the infrastructure in place to support the nuclear modernization efforts and the programs planned over the next few decades, whether or not the infrastructure will be able to handle those necessary programs, as planned. The reason why I am asking it in this way is because it is pretty clear that the infrastructure that we have got right now, and I think what Senator Inhofe has shared, is that we have got some pretty serious infrastructure problems.

In fact, the NNSA's own fiscal year 2021 Stockpile Stewardship and Management Plan states that a number of key facilities do not meet modern safety standards and require significantly increased investments to maintain. The plan further states that the infrastructure issues may very well impact stockpile maintenance and warhead deliveries.

This is simply not acceptable, and with that I would like your opinion on whether or not we actually have it in place and whether or not we are doing enough to bring it up to speed.

Dr. VERDON. We have used the DOD requirements to actually drive the priority of which we are attacking the infrastructure. So all of the large facility, or facility infrastructure requests have been prioritized, all with meeting the DOD requirements and worker safety in mind.

We recognize that there is—you know, as I think I have said many times, the complex has truly atrophied. The pictures showed that. We recognize we cannot do it all at once, so we have prioritized it based on personnel safety and the weapons that we need to deliver to the DOD. We are keeping those priorities and moving to address them all, and working diligently on those facilities that we will not be able to wholesale replace, to make sure that their maintenance is kept up to speed.

Senator ROUNDS. Here is the second part of this, though. Naturally, we are also concerned about the recent announcement concerning NNSA's ability to produce plutonium pits. Both statute, specifically 50 U.S.C. 2538a and STRATCOM, require that NNSA produce no less than 30 plutonium pits per year by 2026, and 80 plutonium pits per year by 2030. Can you explain why you are unable to meet this statutory requirement, and also, what do we need to do, as Congress, to be able to help you meet that goal, that directive, that mandate?

Dr. VERDON. So again, the two-site solution is the approach that we still think is a viable one for the 80 pits per year. What we identified—we still have confidence of being to meet the 30 pits per year by 2026 at Los Alamos. What the detailed analysis showed is when we started the work on the Savannah River site, what the detailed analysis showed is as we actually started to do the design work that the amount of equipment we needed in there, the amount of people we needed in there, we just could not get them in, all done at the same time, to meet the 2030 objective.

What we do believe is if we can meet it between 2032 and 2035, that is what the next phase of the Savannah River project will look at, is defining better what that time frame is. But it was just basically more detailed information, more detailed analysis to identify that vendors could not potentially provide the equipment we needed on the right time frame, we could not get enough people in the building to do the work, you know, faster.

Senator ROUNDS. Dr. Verdon, I am going to run out of time, but I just want to make this point. The Nuclear Weapons Council has not certified the NNSA budget, as I think Senator Fischer was getting at, which was supposed to be done by the end of June. They pushed the deadline to the end of July. Now there is a reason why they have not done that yet.

Now this particular council, just for the benefit of folks watching this, this Nuclear Weapons Council consists of the Under Secretary of Defense for Acquisition and Sustainment, the Vice Chairman of the Joint Chiefs of Staff, the Under Secretary of Defense for Research and Engineering, the Under Secretary of Defense for Policy, the STRATCOM Commander, the NNSA Administrator. Clearly there is an issue, and I am suggesting—and this is the reason, Secretary Granholm, that I think you need to be able to participate in this directly—apparently the budget—and I think there is a reason why they are not certifying the budget at this point and have

delayed it at least 30 days—I am questioning whether or not the budget adequately responds to the immediate needs that are being pointed out by the deficiencies in infrastructure and the inability to produce plutonium pits based on what is directed by STRATCOM and by statute.

I know I am out of time, but just a quick, brief response, if the Chairman would allow it.

Chairman REED. Yes, please. A quick response.

Secretary GRANHOLM. You want that to me? It is my understanding that—and, of course, you have not seen the documentation yet—but that we are all in sync, and that it will be certified. But again, you have got to get your documents in front of you. I also understand that there will be, as you know, a nuclear posture review in August, and in the first year of any administration, or at least the past couple of administrations, there is the out-funding, the policy associated with that nuclear posture review is not reflected in the budget, and there we wanted to have some conversations about that. Understandably, we all want to make sure that we have the requirements met in the out years as well.

So I think—and again, you will have to get the document from them, but I think we are in sync, and I think there will be a certification.

Senator ROUNDS. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Rounds. Senator King, please.

Senator KING. Thank you, Mr. Chairman. Secretary Granholm, the bedrock of this nation's national defense strategy is deterrence, and we are going through a once-in- a-generation, perhaps once in two or three generations modernization of our deterrent capability—*Columbia* submarine, B–21, ground-based strategic deterrent, returning to pit production, upgrading of warheads, and nuclear command and control.

In your view, if we failed to do that, if we back off of that mission of upgrading those elements of our nuclear deterrent, does that diminish the deterrence that affects the calculus of our adversaries?

Secretary GRANHOLM. Yes.

Senator KING. That is exactly the answer that I believe is also the case. Deterrence is in the mind of the adversary, and if they perceive that we have allowed our nuclear deterrent capability to degrade, that in itself, will it not diminish the effectiveness of deterrence?

Secretary GRANHOLM. Absolutely. As Secretary Austin has said, nuclear deterrence should be the number one priority.

Senator KING. The best conflict is the one that does not occur.

Secretary GRANHOLM. Exactly.

Senator KING. The best way to have that occasion is for our adversaries to understand that we are serious, and that part of that is committing the resources necessary to establish the capability of the deterrence.

Turning a moment—and this is not strictly NNSA related but it is certainly in this area—is the role of cyber and the danger of cyber in our nuclear enterprise, as well as across the government. CESER is one of the subagencies of the Department of Energy. I would like your commitment that this is an agency that will be em-

phasized, supported, and there is some discussion about whether it should be an assistant secretary or a professional. But the important thing is that this, I believe, is one of the most important initiatives within the Department of Energy, and will you commit to your full and enthusiastic support of their mission?

Secretary GRANHOLM. Not only will I commit to the full and enthusiastic support, I agree with you 100 percent that it must be elevated, and elevated, in my mind, means that we have to make sure that we have professional staff. I want to make it a directorate that will have the ability to ensure that professionals are running it. It is an emergency response organization, and you need professionals who are running it regardless of administration.

Unfortunately, and you and I have discussed this, and I know this is question and I am happy to have further conversations, if there is an appointee, often there are long gaps in the leadership, and because these issues, cyberattacks, are relentless, gaps in leadership make it very difficult to run an effective organization. Since CESER was created, the leader of CESER has been unseated, no leader for exactly half of the time.

So we want to make sure that there is consistent, strong, professional leadership, and I want to elevate it to be a directorate, and make sure that it has the resources that it needs.

Senator KING. We will continue to discuss that issue, but the important thing is the emphasis on the significant role.

Let me ask another couple of cyber questions. One is, part of nuclear modernization has to be what they call C3—communications, command, and control. That has got to be cyber protected, to the nth degree. Do you agree that that is part of the nuclear modernization challenge?

Secretary GRANHOLM. Yes.

Senator KING. I am sorry?

Secretary GRANHOLM. Yes.

Senator KING. Thank you. The other piece is the cyber protection within your agency. I hope you will be brutal in testing, pen testing, and really working the cyber protection within the agency. The Federal Government is notorious for being cyber vulnerable, and one of the only ways to protect against that is individual desktop cyber hygiene. So I hope that you will test your employees to be sure that they are not responding to phishing emails, that they are not clicking on attachments that they shouldn't. It seems mundane, but 85 or 90 percent of cyberattacks could be prevented by just straightforward, simple cyber hygiene at the desktop. I want you to appoint somebody whose job it is to expose vulnerabilities within the Department.

Secretary GRANHOLM. Yes. We have actually appointed a new CIO, and this is exactly what we are focused on.

Senator KING. The final question. Deterrence does not work with nonstate actors. That is where nonproliferation comes in, and we have to be concerned into the future about nonstate actors getting a hold of nuclear materials, and so it is critical that your Department works closely with the intelligence community, with the entire nonproliferation governmental structure, because, as I say, our whole strategy rests upon deterrence, but deterrence does not work

for a half-dozen people who are perfectly willing to die to bring a nuclear weapon into New York Harbor.

So please commit to me that you are going to remain committed and keep your eye on nonproliferation, because that has got to be part of our strategy.

Secretary GRANHOLM. Absolutely.

Senator KING. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator King. Senator Tuberville, please.

Senator TUBERVILLE. Thank you. Thank you very much, Mr. Chairman. Thanks for being here today.

Secretary Granholm, in January the DOD issued an order prohibiting utilities at military facilities from acquiring, importing, transferring, or installing specified bulk power system equipment from China. What was the rationale behind that order?

Secretary GRANHOLM. The rationale behind the order initially, that the Trump administration provided, was, of course, to make sure that our system is protected from equipment that might be containing cyber malware from our adversaries. A very solid rationale. When it was issued, we received a lot of feedback from the utilities saying it was overly broad and it needed to be addressed more with a scalpel rather than an axe.

We will be following up on this. We have issued a Request for Information from the utilities and others, to make sure that it is crafted in a way that achieves the goal. But the goal is the right goal.

Senator TUBERVILLE. Does this cover critical civilian facilities too?

Secretary GRANHOLM. Yes.

Senator TUBERVILLE. Thank you. In 2015, it was reported that the DOE planned to sign a 10-year agreement to build a molten salt reactor with China. What is the status of that agreement?

Secretary GRANHOLM. I am going to get back to you on that.

Senator TUBERVILLE. Okay. Thank you. You know, they give all these explanations over the years, that China is no longer a developing nation. I think they have proven that they are a little bit past that. They are rapidly growing their military and nuclear capabilities. So I would love to hear from you on that. Thank you.

You know, a recent Hill article says the DOE is destroying an important piece of our Cold War nuclear programs, Uranium 233. Have you read the 2008 IG report that cites that U233 is vital to our national interest? Have you read that?

Secretary GRANHOLM. I have not read the report.

Senator TUBERVILLE. Okay. Thank you.

Chairman Reed, I would like permission to submit this report to the record, please.

Chairman REED. Without objection.

[The information referred to follows:]

[The information referred to can be found in the Appendix.]

Senator TUBERVILLE. Thank you. Just one other question. U233 costs the U.S. billions to create and store, billions, and as we speak we are destroying U233. We are going to eventually need it, and we are spending more money than is imaginable. There is not a lot

of it. It is stored. In your answer, why would we destroy something that eventually is going to be that valuable to this country?

Secretary GRANHOLM. I would ask whether Dr. Verdon has a response to this, but I would say——

Senator TUBERVILLE. Doctor, do you want to weigh in on this?

Dr. VERDON. Actually, no. I would have to look into that as well.

Senator TUBERVILLE. Okay. Well, thank you.

Secretary GRANHOLM. But I will say this, if I might. It is important that the United States provide the means for its own use, and there has been talk of a uranium stockpile, which this Congress funded last year, which has carried over. We are, this month, sending out a Request for Information about the creation of a U.S.-based uranium stockpile.

Senator TUBERVILLE. You know, I just hope we are not allowing—and helping China in any way. We should not be doing that, especially when it comes to nuclear. I have got another article, too, from The Hill on U233, Mr. Chairman, I would like to submit too.

Chairman REED. Without objection.

[The information referred to follows:]

THE HILL

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Congress should recognize China's nuclear ambitions, and it can start by preserving U-233

by Reps. Guy Reschenthaler (R-Pa.) and Jeff Duncan (R-S.C.), opinion contributors - 06/04/21 6:00 PM ET



Getty

President Xi Jinping applauds during a speech at the opening session of the National People's Congress at the Great Hall of the People on March 5, 2021 in Beijing, China.

As government has grown, large federal agencies — many with budgets larger than the GDP of most nations — have emerged. As a result, it has become commonplace for ineffective and expensive programs to continue undeterred for years, sometimes decades, without congressional intervention.

One such government program is currently destroying an important national resource, while unfolding behind the scenes is a Chinese nuclear buildup that could potentially put the United States at a great disadvantage.

The Oak Ridge National Lab (ORNL) in Tennessee has a storied history within nuclear research and technologies. Little known, however, is an 18-year-old, half a billion dollar federal program to destroy a synthetic material called Uranium-233 (U-233). U-233 is a remnant of the 1960s molten salt reactor program, and the inventory has been sitting in a building at ORNL ever since.

U-233 has the potential to be an invaluable resource for advanced nuclear reactors that produce abundant, reliable, and carbon-free energy with significantly less waste. It cost billions in taxpayer dollars to create and store U-233. In the late 1990s, the Department of Energy (DOE) designated U-233 as waste material and issued a contract for permanent disposal of this material (known as downblending) at ORNL. The downblending program is ongoing to this day. Plagued with delays, to date, DOE has spent more than $630 million to destroy U-233, more than the entire government investment in small modular reactor R&D. Regardless of political leanings, that is not an outcome anyone expects from the DOE.

However, what was once labeled as waste is now viewed by some in the scientific, military, and business communities as an asset. The 900-pound inventory in Tennessee could potentially serve as a "seed" in thorium reactors to produce power continuously from inexpensive and readily available thorium. Pioneered at ORNL in the 1960s, thorium molten-salt reactors run on liquid fuel and promise incredible safety. Despite this alternative invented by American engineers with taxpayer funds, the nation's thorium reactor plans were scrapped due to the politics of the time. U-233 also yields priceless isotopes crucial to advancing a game-changing cancer therapy that can be continuously harvested for decades.

A DOE Inspector General (IG) special report in 2008 told a similar story of the "potential for [U-233] to contribute to vital national interests," and advised preservation of the material. Unfortunately, DOE management ignored this report, citing lack of congressional directive. In a subsequent audit, the IG once again criticized the downblending project, saying it may "exceed original cost estimates" and that it would "likely not meet completion milestones." The IG was right.

The long-forgotten technology has seen a revival of sorts in recent decades, with India, Russia, and the EU starting programs of their own. China is also developing this advanced reactor technology, which as the name implies, uses melted salts of thorium with the key ingredient being U-233. While thorium reactors can provide electricity, the real impetus for the Chinese project comes from the People's Liberation Army (PLA) Navy's intentions to build a fleet of thorium-powered warships to challenge the U.S. worldwide. PLA's involvement has turned the project from a $350 million trial into a $3.5 billion enterprise.

China received considerable American help along the way. In 2012, the late Peter Lyons of the DOE initiated a memorandum of understanding (MOU) with the Chinese Academy of Sciences that accelerated nuclear development, particularly thorium reactors, in China. When questioned about thorium reactors in 2011, and again in 2014, Lyons told Congress there was no advantage to pursuing them in the United States, despite a corpus of evidence to the contrary.

ORNL revealed in 2015 that it had an active partnership with the Chinese Academy of Sciences and would receive an estimated $5 million annually to work on the advancement of salt-cooled nuclear reactor technologies. Thanks to bureaucratic dysfunction, the birthplace of thorium reactors is destroying America's only U-233 inventory while advancing Chinese pursuit of the reactor technology.

Energy innovation and cancer treatment should both be non-partisan issues. As we strive to maintain a secure and reliable energy future, inhibiting the development of any promising technology is irresponsible.

Yet, in the case of thorium reactors, we are not only destroying our unique U-233 inventory and even preventing domestic R&D, but actively ceding advantage directly to our geopolitical foe, the authoritarian Chinese Communist Party regime in China, essentially handing the Communists the next century of global power production and projection.

We know China is investing in their nuclear capabilities. A recent report created commotion in military and intelligence circles as China's new nuclear facilities came to light. The Head of the U.S. Strategic Command, Admiral Charles A. Richard, acknowledged that U.S. officials recently became aware of the accelerated civilian nuclear development in China and are grappling with the implications.

The U-233 disposition program continues largely unnoticed in the largess of government spending, and the U.S. is nonsensically destroying a priceless national resource. Coupled with DOE's involvement in advancing China's nuclear plans, and the Department of Defense's realization that Chinese nuclear capabilities are growing, it is obvious that current policy is outmoded and requires immediate Congressional intervention. It is time for Congress to acknowledge China's growing nuclear ambitions, and it can start by preserving America's unique U-233 inventory.

Reschenthaler represents Pennsylvania's 14th District and is a member of the Energy and Water Appropriations Subcommittee. Duncan represents South Carolina's 3rd District and is a member of the Energy and Commerce Subcommittee on Energy.

Tags China Nuclear technology

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Senator TUBERVILLE. Okay. Thank you very much. Thank you both. Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Tuberville. Now let me now recognize, via Webex, Senator Warren.

Senator WARREN. Thank you, Mr. Chairman, and thank you to our witnesses for being here today.

I would like to talk about the NNSA's out-of-control spending on the nuclear weapons systems. NNSA has a habit of overpromising on development timelines and underestimating on costs. This has resulted in projects costing taxpayers billions of dollars more than originally anticipated, and finishing up the job years behind schedule.

Just recently, NNSA's budget request estimated that the high end of the cost range for pit production at Savannah River could be as much $11.1 billion. That is 2.5 times the original projection of $4.6 billion. On top of that, NNSA has now pushed back its goal of producing 80 plutonium pits per year from 2030 to 2035. This is just the latest NNSA project that has gone over budget and behind schedule.

So Administrator Verdon, let me ask you, do you think these ballooning costs and delays are acceptable?

Dr. VERDON. Again, to me it is basically, what we are trying to do is actually more in line with what you are asking for. We are actually trying to be more rigorous in our costing and schedule estimates, and that is what we have brought forward. You may not have been on earlier on. The original estimate for Savannah River was a top-down estimate. It was the first that anybody even thought of. So it was not ever viewed as a really detailed budget estimate. The one we just announced is the first detailed budget and schedule estimate for that facility, and that——

Senator WARREN. You know. Okay, let me stop you there. The problem I am talking about, I use the example of Savannah River because it is 2.5 times past what was originally budgeted, and it is now 5 years longer to get it done. But it is not the only one.

NNSA is anticipating a $505 billion in nuclear weapons spending over the next 25 years, over $100 billion more than what it planned to spend previously. So the question I have is this is not just one off. How can Congress or taxpayers feel confident that NNSA's cost estimates are anyplace close to accurate?

Dr. VERDON. So again, we are trying to learn lessons from the past as quickly as we can. In fact, of all of the major construction projects we have done in the recent years, 75 percent of them have actually come in at or under costs that was projected for them. So I do think as an organization we are learning. But what we are also identifying, and as we are getting new requirements, new requirements also drive up the costs, you know, the apparent costs, because we are getting additional new requirements into the program. So we have to look at that in total. But we are trying to learn hard from the past and improve as we go forward, and I think we are making progress in that area.

Senator WARREN. Well, I would sure like to see the progress, because, you know, if this had only happened once or twice, that programs ran into issues, I would feel differently about this. These issues are chronic. They have a long and well-documented history. A 2010 GAO report concluded, and I am going to quote it, that "DOE did not have a cost-estimating policy and that cost-esti-

mating guidance it had developed in the 1990s remained in effect but was out of date." That is over 11 years ago.

I just want to hear you talk about how things have really changed, and maybe the best way to do that is just tell me some of the steps that NNSA can take right now, or is taking right now to improve its cost estimates and to ensure that these projects stay on schedule.

Dr. VERDON. Again, I think the Department and NNSA together have put in a very rigorous capital acquisition project, you know, management scheme, that we are following very rigorously. We are using OMB and GAO best practices and guidance. If you take something like uranium processing facility, which is almost a decade-long project, $6.5 billion, it is on budget.

So as I say, we are seeing successes. We are not perfect yet. We recognize that. But we are striving to work to improve as we go forward, and I say, I am learning from the past, and we are moving forward to improve, and I see metrics that show that we are improving. I think with working with the Department we have come up with a very rigorous process to manage these large capital acquisition projects, in an effort to improve.

Senator WARREN. I hope that is the case. You know, these wildly inaccurate cost estimates are unacceptable, and we cannot just accept them as the norm, especially as we are trying to plot out trillions of dollars in unnecessarily modernizing our nuclear arsenals. These cost overruns erode public faith in government spending and jeopardize other important NNSA projects like nonproliferation and counterterrorism efforts.

Look, I do not think it is outrageous to expect that taxpayer dollars we invest be spent intelligently and responsibly, and I think it is long past time for NNSA to get its house in order on this. I hear you when you say that those procedures are underway, but I want to see the results on this. These are taxpayer dollars and taxpayer time that is at risk here.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Warren. Let me now recognize Senator Ernst, please.

Senator ERNST. Thank you, Mr. Chair, and thank you, Secretary Granholm and Dr. Verdon, for being here today.

Of course, effective transition to the ground-based strategic deterrent will require a plan to safely and efficiently dismantle, dispose, and demilitarize the current ICBM fleet. If you could—and I apologize for missing the first part of this—but if you could please walk us through what progress is actually being made and what challenges you are facing with the disposition planning for the Minuteman III.

Dr. VERDON. So we are not responsible for the missile—that would be the Air Force—but for the warheads that are on the missile, roughly half of them will transition off of the Minuteman III onto the GBSD. The ones that will not transition, the material associated with those warheads, when authorized, will be disassembled and stored safely and securely, as we have done in the past, with the material that composes those warheads.

Senator ERNST. So you do not foresee any issues then with that disposition.

Dr. VERDON. No.

Senator ERNST. That is good, and then also, of course, DOD, DOE, and NNSA, they all have a stake in the development of the nuclear cores that are supporting our weapons systems and our nuclear Navy. What is the assessment of the capability and ability of our domestic supply and production chains to produce these nuclear cores?

Dr. VERDON. By cores—I am sorry, for clarification—by cores you are referring to the pits, that we call the pits? Is that what you mean by the core, or the whole weapon?

Senator ERNST. The whole weapon.

Dr. VERDON. So we are working very diligently to make sure we have a supply chain. I think we are working very closely with the Department and the Department of Defense in reestablishing more domestic supplies of some of the materials that we need, so we are recognizing that that is a key area that we have to work on.

But we are reestablishing, or we have established and we continue to work to make sure that we have the correct infrastructure to support what we need to do.

Senator ERNST. Dr. Verdon, is there a role that you would see at the Federal Government level or with Congress in making sure that we can procure what is necessary domestically?

Dr. VERDON. You know, we do not have a definitive answer yet, but I believe there will be some materials for which the economic—you know, trying to get industry to restart some of the, you know, domestically, will be a challenge that we may need help in the future. There are certain materials we use that we have to rely on external sources for, that bringing them back onshore may present a challenge for the future that we certainly would potentially need help in doing so.

Senator ERNST. What would some of those concerns that we have with external sources, where would those sources be located?

Dr. VERDON. I will say sensitive countries.

Senator ERNST. Okay. Thank you. I appreciate your time. Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Ernst. Let me now recognize Senator Kelly, please.

Senator KELLY. Thank you, Mr. Chairman, and Secretary Granholm, great to see you again, and Dr. Verdon, great to have a University of Arizona Wildcat testifying.

Secretary Granholm, cyberattacks, malware, ransomware attacks have been increasing. Yesterday we had a closed Cybersecurity Subcommittee hearing on some of the details of these recent attacks. It is an issue that impacts us all, from small businesses, large business, government agencies, secure networks in our national security agencies. It is a big concern of mine.

The recent Colonial Pipeline cyberattack underscored the vulnerability of America's physical infrastructure and the impact that even a single attack can have on the Nation. So I am pleased to see the increased focus on cybersecurity in the fiscal year 2022 budget request, a 42 percent increase from last year's funding.

Secretary Granholm, if Congress funds this increase, what efforts will the Department of Energy undertake to ensure that America's

energy networks are secured against malware, ransomware, and other types of cyberattacks?

Secretary GRANHOLM. Thank you for asking the question. As we have seen, the Colonial Pipeline incident made it clear that the fact that we do not have standards on pipelines, cyber standards on pipelines, like we do on the electricity sector, suggests a major whole. So working internally—now the Department of Energy and CESER is the sector risk manager for the energy sector—working in partnership with CISA, who is over in the Department of Homeland Security, and the TSA that has responsibility over pipelines, we want to make sure that our efforts, and this increase in funding, ensures a collaborative, cohesive whole response inside of government, on the energy side, which is obviously where our focus is.

We want to make sure that the Executive order that the President issued regarding cyber, and including the notion of Energy Star ratings for software, so that we all, inside the Federal Government, are purchasing supplies, software, that we know are the best, that have the highest standards, that make us secure. Those efforts inside of DOE are going to require additional resources, hence some of that increase, so both on personnel, as well as coordination, as well as helping develop standards, as well as implementing those standards inside of the Department are all what CESER is working on.

Senator KELLY. Then also part of this, you know, is the sharing of information, and the President had Executive Order 14028, that talked about this, and really discussed removing barriers to cyber threat, information- sharing with the private sector. So information that would go from government agencies to private sector to benefit all Americans, and this could enhance our national security, but being able to gather real-time information about active threats and effectively communicate to others at risk in private industry, we see that this can help deter and prevent cyberattacks on our country's energy network.

So can you address any barriers that currently exist to communication between the Department of Energy and private sector regarding cyberattacks?

Secretary GRANHOLM. Yeah. I mean, CESER's communications with the electricity sector are excellent. We are embedded in the Council, we work with them closely. It is a great example of what the steps are that have to happen. In that Executive order, the President, for example, required that pipelines notify the government if they have been the victim of cyberattack or ransomware attack. That was not required before.

So what CESER wants to do is to elevate the visibility, the transparency between what is happening in the private sector and the information flow to the government. So one example of that is technology that has been developed at one of our national labs, PNNL. It is called CRISP. It was one example of technology that was attached to the electricity sector that would give us visibility into the systems, so that if there were a bad actor we would know about it, our intelligence community would know about it, and we would be able to engage in defensive strategies. We do not have that on the pipeline sector, and so that is the kind of visibility that is needed on the full panoply of the infrastructure associated with energy.

Senator KELLY. And beyond even infrastructure, I just want to point out that it would benefit all of us if we could do a much better job sharing this information from the private sector to the public sector, so our law enforcement agencies, Department of Justice, FBI knows what is going on in the private sector. We were discussing this yesterday. How can we improve that flow of information? Often, you know, companies—and I understand their rationale for this—don't always want this information to get out there, so we need to explore options to maybe keep this somewhat private at some level. What we are discussing today is the information that goes from government to private industry. So we have got to do a better job. This is just going to continue, and in my view, accelerate and get worse.

Thank you, and Mr. Chairman, I want to submit just a couple of questions for the record to Dr. Verdon. Thank you.

Chairman REED. Quite all right. Without objection. Let me now recognize, via Webex, Senator Blackburn.

Senator BLACKBURN. Thank you, Mr. Chairman, and thank you to our witnesses. I want to talk a little bit about our NNSA facilities. We have mentioned this in several of our hearings. Most of these are over 40 years old. Some are more than 75 years old that go back to the Manhattan Project. These facilities present numerous single points of failure.

So to understand the gravity of the situation, I would like for each witness to provide a specific example of a potential consequence to the stability of the U.S. nuclear enterprise, if it must continue to rely on this aging infrastructure, and talk a little bit about how this is a budgetary issue, how this is a personnel issue, and how this a national security issue, because if any facilities experience operational shutdowns, warhead deliveries may be affected.

So let's start with that and look at this deferred maintenance around these facilities, and talk about how you are going to deal with this in this budget. Secretary Granholm, we will start with you.

Secretary GRANHOLM. Yes, thank you for the question, Senator, and I know Dr. Verdon can speak with great specificity, but I think your point about if we do not modernize, if we do not have the deterrent capability, then we put our Nation at risk. Bottom line. So we have to be able to modernize the warheads, and in order to do that we have to have facilities that will allow for that modernization to occur. So it is a national security issue, obviously.

It is also, I would say, an opportunity for the U.S. to continue to build up its manufacturing backbone inside of the United States. So the issue that Senator Ernst began to raise, and I think Senator Tuberville, you were suggesting as well, is to bring and make sure that we have the capabilities for our own defense here in the United States without having to rely upon others.

So from an economic point of view, from a national security point of view, we have to do this. It will require budgetary commitment—I know that was a third part of your question—and we want to make sure that we do this in a thoughtful and responsible way, to make sure that we meet the defense requirements, and do so in a

way that manages, and are stewards of the taxpayer dollars as well.

Dr. VERDON. I would just add that I agree with your statements. I think, you know, uranium processing facility at the Y–12 is one of the key examples of that, that we are trying to get, eventually be able to get programmatic work out of a 70-year-old building that was built during the Manhattan Project, that we are critically dependent on now. That is the approach we have taken to our whole approach of replacing a lot of these old facilities is identifying what those are key, that if we were to lose them would really cause the strategic commander a great deal of difficulty operationally, and those are our priorities to focus. The uranium processing facility is one. The lithium processing facility proposed in starting to be designed at Y–12. There are a number of them that we have worked very hard to identify which one of those would really be instrumental to get done as quickly as possible, and that has been the focus of the program. Those that we can risk mitigate out longer—we have delayed them, just, you know, to make sure that we can, workload level as well as cash flow level.

But your point is well taken. I agree with the Secretary that we are reaching—we have reached a tipping point. We have to do this. Otherwise there will be consequences to the operations.

Senator BLACKBURN. Dr. Verdon, when you talk about scheduling modernization for the key secondaries group, and the capabilities that are there with enriched uranium, depleted uranium, lithium, how does this lack of attention to meeting the deferred maintenance backlog, what does that do and what kind of challenge does that present to the secondaries, not only in an economic manner but also with a personnel manner?

Dr. VERDON. Again, what we tried very hard to do is we have prioritized the deferred maintenance we do. It is clearly applied to those facilities that are most important for workforce safety and programmatic deliverables. That is where we applied the money first.

Then for a number of facilities, like at Y–12, which you mentioned for the secondaries, they have reached the point to where, again, we are working on replacing most of them because we recognize that, you know, affectionately we say something the paint is holding the building together.

Senator BLACKBURN. Yeah.

Dr. VERDON. Those are the ones that we prioritized to be replaced, effectively as a different approach to deferred maintenance, but we think it is the best approach, and for those other areas we have prioritized the work to the highest-priority buildings that we have on the sites.

So again, that is the approach we have taken, driven by DOD deliverables and workforce and environmental safety.

Senator BLACKBURN. Thank you.

Chairman REED. Senator Blackburn, I assume you have concluded your comments?

Senator BLACKBURN. Okay.

Chairman REED. With respect to that I will now recognize, via Webex, Senator Gillibrand.

Senator GILLIBRAND. Thank you, Mr. Chairman. Secretary Granholm and Administrator Verdon, I was really pleased to see in your written testimony you mentioned enhancing our cybersecurity across the nuclear enterprise, especially in the wake of the Colonial Pipeline hack, and the targeting of another contractor that works for the government's nuclear programs.

I listened with great interest to your responses to Senator Kelly. But acknowledging that we are in an unclassified setting, do you feel confident about DOE and NNSA's capacity to handle the ever-growing cybersecurity threat from malicious actors and adversaries, and where are the areas where Congress can be helpful? I did hear you say you needed funding. I did not know if you need authorities. How is your ability to recruit and retain key personnel?

Secretary GRANHOLM. Thank you for the question, Senator. I think there is, right now, an administration effort on cyber, where we are reviewing all of this. But I will say that it is clear that there are gaps, not so much in our ability internally to respond, but in our ability to seek what is happening in the private sector.

So this will be a question, and I am sure Congress will have to look at this, is there a way that the private sector can, for example, on the pipeline side, step up to allow themselves to allow the government to have some visibility into the system, since the public relies upon their system? Is there a requirement that would have Congress step in to say something, or is this something that could be incentivized on a voluntary basis? I think those are all worthy questions of exploring. But what is not acceptable, I think is the status quo. So penetrating the information flow from the private sector and encouraging that to us and to the intelligence community is a high priority.

Senator GILLIBRAND. I agree that the status quo is unacceptable, and we are working on legislation within the Intelligence Committee to address visibility into the private sector, and least have mandatory reporting when private sector has some intrusion. So we are working on authorities, and this Committee will also be working on that to meet the needs, and I welcome your advice and guidance on that.

Do you have the personnel that you need? We have talked a lot about getting the best and brightest cyber personnel for the entire services and intelligence services. We have debated issues of whether we need, for example, a cyber academy, similar to the service academies, where we can create civilian workforce through something like a service academy, and for 4 years of your education you give back 4 years in the public sector, such as working at Department of Energy or working at NSA or CIA, or any other civilian branches that need the best and brightest in cyber. Is that something that you think would be useful for your ability to attract and retain some of the best talent, as opposed to having them go to the private sector immediately?

Secretary GRANHOLM. Yeah, I think we would welcome a pool of talented people. We are always trying to increase our science, technology, engineering, and math pipeline, and if there were a dedicated place where we could be able to ensure that we would have

some of that talent, and perhaps even once they are in, recruit them for the long haul, that would be a terrific gift to the Nation.

Senator GILLIBRAND. Thank you. One further question. I see that there is some potential for artificial intelligence to help bolster the security of our nuclear weapons systems, but I also have significant concerns given our vulnerability. Again, acknowledging that this is an unclassified setting, what elements of our nuclear command, control, and communication, would you feel more comfortable potentially having AI play a role, and what elements do you believe should firmly remain within the control of human beings?

Secretary GRANHOLM. I am going to let Dr. Verdon respond to that.

Dr. VERDON. Well, I think the bigger control, I think, would be the bigger NC3. That is really a DOD requirement, and they would be the ones that would have to answer that question in detail.

With regards to ours and that kind of role, our requirements, we are taking a hard look at that, and it is a good question. We are taking a hard look at that, of how do we make sure that parts which have to stay in human control do so, and that which we can turn over to things like AI, we do, you know, do carefully. But I think the bigger question of the whole command and control that is really a DOD question for you to address.

Senator GILLIBRAND. Thank you. Thank you so much, both of you, for your service, and thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Gillibrand. Senator Hawley, please.

Senator HAWLEY. Thank you, Mr. Chairman, and thanks to the witnesses for being here. Dr. Verdon, if I could just start with you, I want to talk about the Kansas City National Security Campus, something we are very proud of, my home state of Missouri. Can you give us an update on the NNSA's efforts to ensure that the Kansas City campus has the capacity, the additional capacity it needs to meet production requirements in the coming years?

Dr. VERDON. Yes, sir. So we are expanding the capacity, or the footprint, if you like, for manufacturing and developing. We are doing that right now through leasing, but in parallel we are starting to work on what a long-term vision would be, what would be the long-term commitment. So we are doing both. We are trying to address the near-term needs, and that will give us information about what size the long term may need to be, and then we are looking at options for a consolidated campus as we go forward into the future.

Senator HAWLEY. Very good. Secretary Granholm, let me ask you to weigh in here. I did want to ask specifically about the space that the campus needs, as well as more general support. So can you comment on that as well, making sure that the campus has the space that it is going to need?

Secretary GRANHOLM. Yeah. As Dr. Verdon said, they are looking at these short-term leases for the moment, but expanding to create one consolidated place makes sense, and supportive, obviously, of what the NNSA's needs are.

Senator HAWLEY. Very good. Dr. Verdon, the STRATCOM Commander testified earlier this year, this is the quote, "The plutonium pit production is the biggest stockpile modernization issue." Can

you confirm that the NSA is still on track to restore our ability to produce 80 plutonium pits per year by 2030?

Dr. VERDON. So we are, as we recently notified, we believe, based on all of the input we have now, and having the ability to work with the vendors and the construction, that we will not be able to achieve the 50 pits a year by 2030. We believe that the time frame for that will be somewhere in the range of 2032 to 2035. That is the next step find out as to what that range would be.

We started to have the detailed discussions with actually laying out the construction that was required, laying out the work with the vendors that supply the equipment, and we found that it did not look like it was possible to do it by 2030. So right now we have identified 2032 to 2035, and the next step is to fine-tune those dates.

Senator HAWLEY. So we are looking at, I think you said 50, 50 pits per year by 2032 to 2035?

Dr. VERDON. So, sorry. But we are still very optimistic that we will achieve the 30 pits a year at Los Alamos by 2026. So that still is on target.

Senator HAWLEY. But 50 pits a year, now you are hoping, in the 2032 to 2035 time range, is what you are saying.

Let me ask you, in that context, about China. Madam Secretary, Admiral Richard has testified recently that China is well ahead of the pace to double their stockpile by the end of this decade. I can only say I think that those efforts are deeply, deeply concerning, and speaks to the need to modernize our own nuclear deterrent.

Do you agree that plutonium pit production is absolutely foundational to our nuclear deterrent, and will you prioritize ensuring that we are able to stay on schedule? It sounds like the schedule is already slipping. Will you prioritize getting back on schedule to ensure our efforts to restore this key capability?

Secretary GRANHOLM. I do and I will.

Senator HAWLEY. Very good. Dr. Verdon, the NNSA's budget request this year includes several increases in the Production Modernization Account, I noticed. Some of those increases relate to plutonium pit certification activities. Can you say something more about that, what those certification activities entail, and why you requested the increase?

Dr. VERDON. Yes. So to build a pit is not just putting the equipment in. It is actually then having the laboratory that designs that pit, saying that what was built meets requirements. What is what we call certification. So it is those activities which involve, you know, small-scale testing, large-scale testing, to make sure that what the equipment and the people have built meets requirements and could be put into the stockpile. That is the certification effort.

Senator HAWLEY. Got it. Very good. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hawley. I understand that Senator Inhofe has no additional questions. I want to thank the witnesses, Secretary Granholm and Dr. Verdon, for your thoughtful and important testimony today, and with that I would call the hearing adjourned. Thank you.

[Whereupon, at 10:27 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR MARK E. KELLY

NNSA FUTURE WORKFORCE

1. Senator KELLY. Dr. Verdon, we're blessed to have world-class higher education programs in Arizona that are training the next generation of technology and security leaders. This pipeline is critical for our national security workforce, especially for agencies like NNSA, which are faced with the reality of an expert, yet aging, workforce. The fiscal year 2022 budget request includes $96 million for Academic Alliances, like the Minority Serving Institution Partnership Program, which the University of Arizona participates in today.

How will investment in these and other programs help to recruit and retain the highly-technical talent we need to provide for America's nuclear security? How is NNSA actively seeking talent and partnering with universities across the Nation to develop the necessary talent for the future?

Dr. VERDON. NNSA has implemented multiple university programs to develop, recruit, and retain high-quality individuals. Currently NNSA sponsors dozens of university programs designed to help meet current and future challenges in the nuclear security enterprise (NSE). The programs are strategically linked to succession-planning efforts to develop, recruit, and retain highly qualified and diverse talent across the NSE. Investment in these programs will help provide the next generation with opportunities to acquire the experience and expert judgment needed to sustain the NSE and provide valuable basic and applied research to NNSA's missions.

NNSA actively seeks talent through partnering with academic institutions across the Nation including Minority Serving Institutions (MSIs). NNSA's Minority Serving Institutions Partnership Program (MSIPP) and the related Tribal Education Partnership Program (TEPP) work directly with MSIs and National Laboratories and plants to build diverse and sustainable science, technology, engineering, and mathematics (STEM) career pipelines to prepare NNSA's next-generation technical workforce. MSIPP aligns investments in university capacity and workforce development with DOE/NNSA mission areas to develop the needed skills and talent for DOE/NNSA's enduring technical workforce and to enhance research and education capacity at MSIs. MSIPP builds a network of NSE-ready students through enrichment activities from K–12 to the post-doctoral level. Through MSI–NSE lab/plant consortia partnerships, students are provided with internship opportunities across the NSE in direct alignment with their academic disciplines and exposed to cutting-edge research and activities in their relevant fields. The internships afford students the opportunity to make significant and immediate contributions to the enterprise.

Capacity building through curriculum and infrastructure has led to the creation of new and advanced nuclear security enterprise related curricula. As a result of MSIPP, in fiscal year 2020 there were 485 undergraduate and graduate college and university students supported through the program; 146 faculty professional development and 92 K–12 outreach activities completed; 277 new MSIPP-type courses and labs; eight new degree programs and nine new program certificates; 600 professional development activities; 162 student internships; and 20 students were hired into the NSE. NNSA and NNSA's Management and Operation (M&Os) contractors are also sponsoring an MSIPP virtual career day fair on September 15th with 73 confirmed MSIPP institutions.

A key MSIPP consortium is the Partnership for Proactive Cybersecurity Training (PACT), led by the University of Arizona. PACT addresses current and future cybersecurity research challenges, while educating and training a next generation of cybersecurity workforce. Cybersecurity is a critical area of interest for the enterprise and PACT provides an essential pipeline to help the NSE maintain that core cybersecurity capability. This is just one of 17 consortia that NNSA partners with to develop the necessary talent for the future.

Another program, the NNSA Graduate Fellowship Program (NGFP), recruits, hires, and retains the next generation of talented, high-potential graduate-level professionals who will continue to contribute to the NNSA mission. NGFP has become a robust talent succession pipeline for the NSE, and Arizona State is one of our university partners helping to bring top talent into the enterprise. For over 25-years, the program has produced over 600 Federally sponsored graduates, and over 85 percent of alumni have accepted positions with ties to the national security sector. Since fiscal year 2015, 45 percent of the graduates (306 individuals) have accepted Federal employment with NNSA.

The Stewardship Science Academic Alliances Program (SSAA) emphasizes academic research in technical areas of fundamental research and development that are relevant to NNSA's Stockpile Stewardship Program mission. The Centers of Excellence activities supported by SSAA maintain the pillars of technical peer expertise

while individual investigator grants develop breadth in each field of research relevant to NNSA. Both provide students with training and development that align with the needs of the NSE. SSAA funding supports research at approximately 80 universities, including training of more than 350 undergraduate, graduate students, and post-doctoral researchers each year. The Defense Nuclear Nonproliferation University Consortia for Nuclear Nonproliferation program funds are awarded to three university consortia, with a fourth consortium focused on nuclear forensics planned for fiscal year 2022. The consortia are structured to encourage direct engagement of university students at NNSA laboratories for graduate research. Nearly 500 degrees, including 177 Ph.Ds., have been awarded through the consortia, resulting in more than 140 new career placements in the DOE/NNSA's national laboratories. These are just a few examples of how NNSA is actively seeking talent for the NSE.

NNSA FUTURE WORKFORCE

2. Senator KELLY. Dr. Verdon, what challenges and obstacles does the organization face in recruiting the needed talent for NNSA to sustain and maintain America's nuclear arsenal and other critical activities?

Dr. VERDON. Meeting NNSA's growing mission requirements mandates an aggressive, external hiring strategy. With a renewed focus on recruitment in multiple cities to support all program areas, NNSA has worked to close its staffing shortfall to meet mission growth and commitments. NNSA's expanding and challenging national security missions require it to recruit, train, and retain a highly skilled Federal employee workforce. Challenges the organization faces in recruiting the talent needed for NNSA to sustain and maintain America's nuclear arsenal and other critical activities include: 1) laboratory locations in areas that have high costs of living, are remote, or both; 2) the need to compete with private industry and other government agencies for a limited pool of high-caliber talent; and 3) many NNSA positions require security clearances which can be lengthy and/or difficult to obtain for some elements of our civilian labor workforce.

- Based on OPM guidance, NNSA is allowed to provide recruitment and retention bonuses that would otherwise not be authorized, for two hard-to-fill NNSA locations: Livermore Field Office (LFO) in Northern California and Los Alamos Field Office (LAFO) just north of Albuquerque, New Mexico.

Lawrence Livermore National Laboratory (LLNL) is uniquely situated in the midst of the Nation's information technology hub, and the lure of working for a major technology entity for our workforce is very real. LFO leadership is constantly recruiting as Federal employees and contract partners are pulled away to the private sector with increased pay and exorbitant sign-on bonuses. Moreover, the high cost of living associated with residing in the local area of LLNL makes government employment less attractive.

LAFO's recruitment and sustainment efforts are hampered by both the remoteness of the Lab's location and the high cost of living associated with the local area. The attractiveness of employment elsewhere – including at the Sandia National Laboratories and a competitive job market in the Albuquerque, NM metro area, just an hour and a half south of LANL, complicates recruitment and retention for LANL leadership.

- OPM has also identified three critical occupational series that are more challenging to recruit for: certified contracting professionals, information technology professionals, and cyber security professionals.

NNSA's Office of Acquisition and Project Management requires a cadre of seasoned contract specialists with cradle-to-grave acquisition experience to assist with providing agile procurement solutions. The consistent need for contracting professionals across the whole-of-government and within the private sector has created a lack of available resources across the spectrum of employment opportunities.

NNSA faces recruitment and retention challenges across the spectrum of the information technology and cyber security professions. These two occupational specialties are in demand across the Federal Government and within the private sector. NNSA competes with the whole-of-government for a limited pool of available IT and cyber security professionals, which impacts recruitment and retention in this critical occupational series.

NNSA TECHNOLOGY INVESTMENTS

3. Senator KELLY. Dr. Verdon, you have said that the fiscal year 2022 budget request will enable the National Nuclear Security Administration's Office of Naval Reactors to advance new technologies and improve reactor performance. This innovation is part of what provides the U.S. Navy with an edge over our adversaries.

What are some of NNSA's target areas for technology innovation in the upcoming fiscal year and can you expand on how this funding would support them?

Dr. VERDON. Naval Reactors Development (NRD) funds the development of advances in the unique nuclear propulsion technical capability that the Navy relies on to operate, build, and maintain nuclear-powered ships. Included in this line is funding that enables the Naval Nuclear Propulsion Program to manage operations of the current fleet, perform analysis of current reactor performance, and support construction of nuclear-powered warships. The fiscal year 2022 budget request also increases investment in the research and development of new technologies, including those intended to support the Navy timeline for SSN(X). Investment in mid- to long-term advanced research and development has been deferred over the past decade to support major recapitalization efforts across the Program.

The increase in NRD in fiscal year 2022 will support the following efforts:

- Performing cutting-edge research to develop new technologies and manufacturing methods that significantly improve the capability, effectiveness, performance, and cost of future naval nuclear propulsion plants to maintain our strategic maritime superiority. Examples include added focus on:
  - *Advanced instrumentation and control technology and equipment:* Current digital control and power management equipment is becoming obsolete and will need to be replaced. Naval Reactors is working with commercial industry on replacements that take up less space, run cooler and with less power, enable more effective use of electrical power in the ship, are more secure against cyber-attack, costs less and can efficiently acquire and process a broad range of plant data.
  - *Plant Data and Automation:* Advanced sensors, artificial intelligence, and data analytics are being pursued to automate current manual data collection, and process that data into information that gives the operator a clearer picture of plant status, with goals to simplify operation, enable confident condition-based maintenance, increase ship operational availability and ease the burden on our sailors.
  - *Core manufacturing development:* Naval Reactors has started an effort to change how we manufacture reactor cores, with technology that promises to provide a more capable reactor for the next ship, while also allowing that reactor to be smaller and cost less. The new approach employs advanced, high precision robotics and machine learning methods for automated in-process inspection that can quickly find and correct potential production process issues much earlier than is possible today, reducing our fabrication costs and risks.
  - *Component manufacturing technologies:* Naval Reactors sees practical potential for using certain advanced manufacturing approaches in building major plant components. These advanced capabilities include hot-isostatic pressing and metal additive manufacturing, and based on industry experience, promise to deliver propulsion plant components at reduced cost and schedule, in addition to enabling performance-enhancing designs with unique or complex geometries. These advanced manufacturing approaches can supplement, or in some cases replace, traditional forging and casting methods, some of which have changed little since WWII.
- Developing technology for reactor plant components that will provide substantial improvements in quieting capability and performance for future submarines. There is real potential to make a meaningful improvement to submarine stealth. Achieving an improvement involves work in reactor technology areas using existing specialized laboratory test facilities and state of the art flow and heat transfer computer methods, as well as targeted improvements to key reactor plant components.
- Recapitalizing facilities and equipment for inspecting and characterizing naval spent nuclear fuel; efforts that have the potential to provide increased operating capability of nuclear submarines and aircraft carriers.

QUESTIONS SUBMITTED BY SENATOR TOMMY H. TUBERVILLE

NUCLEAR ENERGY

4. Senator TUBERVILLE. Secretary Granholm, would you agree nuclear energy is essential to the long-term goal of plentiful power and carbon reduction? Please explain your answer in detail.

Secretary GRANHOLM. Yes, I agree that nuclear energy is essential to the long-term goal of plentiful power and carbon reduction. To reach our ambitious goals of a 50 to 52 percent reduction in our carbon emissions in 2030, 100 percent clean elec-

tricity by 2035, and a net-zero economy by 2050, we will need to use every single clean energy tool available. Our existing nuclear power plants, as well as new advanced nuclear designs will play crucial roles in helping us meet these goals.

NUCLEAR REACTORS

5. Senator TUBERVILLE. Secretary Granholm, please provide an overview of recent developments in advanced reactors, many of which are reincarnated from the heyday of nuclear design in the 1960s and 1970s. How many are being developed in the private sector?

Secretary GRANHOLM. Current innovative advanced reactor designs that are under development have the potential to offer significant benefits versus existing and past technologies, including possible lower costs, enhanced safety and security, greater resource utilization, and simpler operating regimes. The Office of Nuclear Energy's (NE) Advanced Reactor Technologies (ART) program supports innovative reactor concepts including fast reactors, molten salt reactors (MSR), high temperature gas-cooled reactors (HTGR), and microreactors.

Fast Reactors can utilize many coolants including liquid sodium, liquid lead, gas, and molten salts. Recent advancements in fast reactor technology have focused on reducing capital costs, enhancing safety, and improving operational flexibility.

Modular HTGRs under development today use low-enriched uranium and a relatively low-powered core to enable passive heat removal. This combination of fuel and core design prevents the core from melting even under the most severe accident conditions. It also allows the coolant to be safely heated to much higher temperatures suitable for supporting energy-intensive processes that currently rely on fossil fuels, such as hydrogen production, desalination, district heating, petroleum refining, and ammonia production. Over the past decade, the advanced gas reactor (AGR) program has refined fuel fabrication expertise and improved the fuel performance of tri-structural isotropic (TRISO) fuel for use in commercial HTGRs. TRISO fuel exhibits very low particle failure rates during irradiation, and remarkable durability under severe accident conditions. Additionally, advances in materials development and qualification, such as the recent qualification of Alloy 617, enables HTGRs to potentially support higher efficiency base-load electricity generation and broader co-generation and high-temperature process heat markets. Alloy 617 can be deployed in reactor environments up to 954 degrees Celsius (C), which is an increase of 180 degrees C over previously accepted alloys.

Some recent MSR concepts are being designed to use chloride salts, which are more economical and readily available than salts used in early MSR designs. Early MSRs also were liquid fueled but a new MSR variant known as the Fluoride salt-cooled High Temperature Reactor (FHR) can utilize the robust solid TRISO fuel form being developed for high temperature reactors. Further, FHRs can operate at high temperatures and can potentially support higher efficiency electricity generation and process heat applications.

Microreactors are a cross-cutting category of very small reactors that may utilize any of the coolants currently under development by advanced reactor designers and supported by NE. Microreactors offer unique features such as high energy reliability, simplicity of reactor control and safety design, factory fabrication, and transportability by truck, rail, or aircraft. These features may provide a reliable and economic power production alternative for remote, off-grid communities and may provide reliable, secure, and transportable power and process heat options for defense applications.

Recognizing the promise of advanced reactor designs, dozens of United States companies are working on advanced nuclear reactor designs for a wide array of capabilities to meet the energy needs of the future.

6.Senator TUBERVILLE. Secretary Granholm, is it possible for civilian reactors to potentially create more fuel than they consume? e.g., all fast-neutron reactors can technically be designed to operate as "breeder" reactors, and when using U–233, both fast and slow-neutron reactors can run as breeders.

Secretary GRANHOLM. Yes, fast reactors can be designed to breed fissile material in the reactor core and produce fissionable material when operated in conjunction with a reprocessing/recycling facility in a closed fuel cycle, as is done in some foreign fast reactor programs. As noted, when using uranium-233, both fast and slow-neutron reactors can breed fissile material. In all uranium and thorium fuels, new fissile isotopes are created in the reactor environment. Both existing and advanced reactors take advantage of this conversion and subsequent fissions that have the performance benefit of extending fuel burnup. The favorable neutron balance in fast reactors at high uranium loading can create fissile isotopes more quickly than they

are consumed by fission. The rate of fissile isotope production is highly dependent on the reactor fuel loading, with flexibility to "breed" or burn the fissile inventory.

Most U.S. advanced fast reactor concepts are being designed to be net consumers (burners) of fissile material. Fast burner reactors can be used to support waste management missions by consuming nuclear waste. However, the commercial infrastructure to support reprocessing/recycling does not exist in the United States today; hence, U.S. fast reactor developers are planning on a once-through fuel cycle supporting their reactors and are targeting high efficiency base-load electricity generation and process heat markets.

7. Senator TUBERVILLE. Secretary Granholm, one of the reactors that DOE has chosen for demonstration—the Natrium reactor design by GE–Hitachi and Terrapower—is a fast-neutron reactor. Do you believe it could produce more fuel than it consumes?

Secretary GRANHOLM. The Natrium reactor is a sodium fast-spectrum reactor (SFR) design. SFRs could be designed to breed fissile material in the reactor core and produce fissionable material when operated in conjunction with a reprocessing facility in a closed fuel cycle, as is done in some foreign SFR programs. However, due to a lack of commercial reprocessing infrastructure in the United States, the designers of the Natrium reactor decided to design Natrium to produce less fuel than it consumes and operate with an open fuel cycle.

8. Senator TUBERVILLE. Secretary Granholm, depending on the residence time of the fuel in the reactor and the nature of the chemical processing, any excess fuel produced by a reactor can potentially be weapons-grade material. What steps does the DOE foresee are necessary to ensure that we can adequately safeguard the production, storage, and movement of such nuclear fuel in a future where advanced reactors are more prevalent?

Secretary GRANHOLM. The Department is confident that the management of spent nuclear fuel from existing reactors and that expected from the proposed advanced reactors is and will be done in a responsible manner that protects the environment, the workers, and the public. Consistent with this, the Department understands that the U.S. Nuclear Regulatory Commission (NRC) ensures safeguards and security (S&S) of these reactors and their spent nuclear fuel by regulating licensees' accounting systems for nuclear materials and security programs. The Department further understands that NRC regulations require the licensee to maintain a nuclear material control and accounting (MC&A) program that tracks and verifies special nuclear material (SNM) that is on site. The MC&A regulations ensure that the information collected by the licensee about SNM is accurate, authentic, and sufficiently detailed to enable a licensee to maintain current knowledge of its SNM and manage its program for securing and protecting SNM. The MC&A program, together with physical protection of facilities and information security requirements, make up the primary elements of the NRC's SNM safeguards program. The NRC regulates light water reactors and has the responsibility to ensure advanced reactors are equally secure and protected as they are developed and deployed. The Department funds S&S research and development to ensure that improved technologies and approaches that strengthen safeguards and security are available to licensees, and to help implement them all to meet NRC requirements in the most efficient and cost-effective manner.

The International Atomic Energy Agency (IAEA) serves as an intergovernmental forum for scientific and technical co-operation in the peaceful use of nuclear technology and nuclear power worldwide. The programs of the IAEA encourage the development of the peaceful applications of nuclear energy, science and technology, provide international safeguards against misuse of nuclear technology and nuclear materials, and promote nuclear safety and nuclear security standards and their implementation. The National Nuclear Security Administration (NNSA) announced the rollout of U.S. Nuclear Nexus *(http://www.anl.gov/nuclear-nexus),* a tool designed to foster timely connections between NNSA and the U.S. nuclear industry on the global deployment of advanced nuclear technology on August 17, 2021. Nexus will act as a single point of access for NNSA and DOE National Laboratory recommendations, training, tools, and other relevant technical expertise and guidance on nonproliferation.

NUCLEAR WASTE

9. Senator TUBERVILLE. Secretary Granholm, since the government already owns civilian nuclear waste, does it make sense for the Federal Government, or in other words, the American people, to own all nuclear fuel and by extension any fuel cre-

ated inside reactors and create a leasing program whereby civilian reactors can acquire such fuel?

Secretary GRANHOLM. The Federal Government does not currently own the vast majority of the Nation's civilian spent nuclear fuel but instead is obligated to accept and dispose of such material pursuant to the Standard Contract that section 302(a) of the Nuclear Waste Policy Act authorizes DOE to enter into with the owners of civilian reactors. Specifically, due to the lack of any viable existing disposal or storage options, DOE has been unable to take title to any spent nuclear fuel pursuant to the Standard Contract. However, assuming DOE were able to take title to civilian spent nuclear fuel, there are no existing or planned commercial reprocessing facilities in the U.S., which could extract enriched uranium and plutonium from the spent nuclear fuel for fabrication into usable nuclear fuel. Moreover, section 53 of the Atomic Energy Act of 1954 generally prohibits DOE from leasing special nuclear material, including nuclear fuel, to anyone who possesses or operates an NRC-licensed utilization facility, including a civilian reactor. In addition, as a general matter, section 3112 of the USEC Privatization Act imposes limits on the authority of DOE to provide source and special nuclear material, including nuclear fuel, to civilian reactors in competition with the commercial sector.

DOE believes the commercial sector has the capacity and expertise to supply nuclear fuel to both the domestic and international markets and can better respond to market conditions than DOE. DOE is playing, and should continue to play, an important role in maintaining the viability and competitiveness of the American nuclear industry by supporting efforts to develop advanced nuclear fuel forms and improved technology for production, conversion, enrichment and fuel fabrication.

APPENDIX



U.S. Department of Energy
Office of Inspector General
Office of Audit Services

Special Report

Meeting Medical and Research Needs for Isotopes Derived from Uranium-233

DOE/IG-0795 May 2008

Department of Energy
Washington, DC 20585

May 29, 2008

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman
Inspector General

SUBJECT: INFORMATION: Special Report on "Meeting Medical and Research Needs for Isotopes Derived from Uranium-233"

BACKGROUND

As part of its program to produce isotopes for medical, research and industrial purposes, the Department of Energy (Department) has used its unique nuclear facilities to produce thorium-229 isotopes from its inventory of uranium-233. Thorium-229 is used to create actinium-225 and its progeny isotope, bismuth-213. Both actinium and bismuth are extremely rare isotopes that are now being used in clinical trials and cancer research at organizations such as the Memorial Sloan-Kettering Cancer Center in New York. Early research results have been promising, showing improved cancer survivability rates in test populations. Consistent with these research results, a 2001 Departmental Report to Congress underscored the importance of maintaining a supply of these isotopes to support promising medical research and treatment. Specifically, the report stated that "the supply of actinium-225/bismuth-213 available as uranium-233 decay products will be inadequate if therapeutic applications for leukemia become even moderately successful and will become woefully inadequate if successfully applied to other types of cancer including prostate, breast, lymphomas, and various forms of brain cancer."

The Department's inventory of uranium-233 resides primarily at the Idaho National Laboratory (Idaho) and the Oak Ridge National Laboratory (ORNL). The Department determined that these inventories are no longer needed to meet agency mission requirements. In 2003, to aid in isotope production, Congress authorized the extraction of thorium-229 from ORNL's uranium-233 inventory prior to its disposal. Subsequently, however, Congress directed that the Department terminate the extraction process. Responsibility for disposition of uranium-233 was transferred to the Environmental Management (EM) program. Accordingly, in October 2007, at the recommendation of the Department's Nuclear Materials Disposition and Consolidation Coordination Council, the Department decided to prepare the ORNL inventory beginning in 2012 for disposal. Further, the Department decided to dispose of the Idaho uranium-233 inventory at the Nevada Test Site as low-level waste and began shipments of the material in January 2008. Because of its importance to medical and other research activities, we initiated a review to evaluate whether the Department's planned disposition of its uranium-233 inventories would permit it to meet projected domestic medical and research needs for actinium and bismuth. Shortly after initiating this review, we received information alleging that the Department was disposing of uranium-233 that had significant potential use.

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RESULTS OF AUDIT

We concluded that the Department's current disposal plans provide no assurance that sufficient quantities of uranium-233 and its valuable progeny isotopes will be available to support U.S. medical and scientific research needs. We noted that:

- The Department is the only domestic producer of progeny isotopes from uranium-233 and current production is insufficient to meet medical and scientific research needs. Once the planned disposal of uranium-233 is complete, the Department will not have the means to increase isotope production to meet the dramatic projections of future needs for actinium and bismuth;

- At present, no viable alternative methods of production of actinium and bismuth have been demonstrated or proven; and,

- Uranium-233 also is used to support other Department missions such as the National Nuclear Security Administration's Test Readiness Program.

The importance of and continuing need for uranium-233 and related isotopes was confirmed by The National Academy of Sciences in its September 20, 2007, report entitled "*Advancing Nuclear Medicine Through Innovation.*" The National Academy was asked by the Department and the National Institutes of Health (NIH) to review the state of the science of nuclear medicine. The study concluded that the Department and NIH need to focus research on the development of new radionuclide production facilities and technologies as well as the development and use of targeted radionuclide therapeutics that will allow cancer treatments to be tailored for individual patients. The report also stated that several of these radionuclides, including actinium-225, are not being produced in sufficient quantities to meet existing research demand. The supply/demand balance is also affected by recent reports from researchers asserting that problems with quality and availability prevent them from using isotopes from foreign sources for human trials. The vulnerability of obtaining radionuclides from foreign sources was also underscored by the recent shutdown of a Canadian reactor, which provided many of the isotopes used in medical diagnosis and treatment.

According to senior program managers, the inventory of uranium-233 is being disposed of because there is a lack of programmatic authority to maintain the material and the infrastructure necessary to continue extracting the actinium and bismuth. Currently, the uranium-233 inventory is controlled and managed by the EM program, whose mission is to dispose of the Department's unwanted materials. The EM program tried to transfer the uranium-233 to other programs, such as the Office of Nuclear Energy (NE). However, according to NE management, which currently manages the Department's Isotope Programs, funding restrictions prohibit NE from taking possession of the inventory.

We recognize that the Department has, as a matter of policy, committed to providing isotopes only when there is no U.S. private-sector capability or when the available supply is insufficient to meet U.S. needs. In the case of uranium-233, the Department appears to offer the only viable domestic production capability. Yet, even its existing production capacity is insufficient to meet demand. Further, security and proliferation concerns

prohibit the Department from providing the source material directly to universities or industry to permit the development of a viable private sector source. Based on our consultations with program officials within the Department, we learned that given appropriate authorities and the available funding, several alternatives exist for assuring a viable inventory of these important radioisotopes. As was initially proposed for the inventory maintained at Oak Ridge, thorium-229 could be extracted from the uranium-233 prior to disposition. Alternatively, the Department could retain some portion of the uranium-233 inventory, or develop alternative methods of producing actinium-225 and its progeny isotope, bismuth-213. It should also be noted that other options are being pursued by private sector entities in an effort to create these isotopes; however, it is not yet known when or if these technologies will prove viable.

To its credit, the Department's Fiscal Year 2009 budget proposes to transfer the Nation's isotope program to the Office of Science and seeks to increase research and development in isotope production. The budget request mentions that future research and development efforts will specifically consider the results of the recent National Academy of Science report on nuclear medicine. However, without the feed material from which to produce actinium and bismuth, the research must necessarily focus only on alternative production methods -- efforts that at the least will significantly delay delivery of these potentially beneficial isotopes to the medical research community.

Should the Department elect to proceed as planned, it may dispose of a national resource that is irreplaceable. The potential for isotopes produced from uranium-233 to help save the lives of thousands of American cancer patients is widely accepted, and one top Departmental official estimated that isotopes production from ORNL stocks alone could be used to treat about 6,000 patients annually. While we are sensitive to the complex public policy implications associated with this matter, including significant budgetary issues, we believe that the Department should explore alternatives for ensuring a stable domestic supply of the important isotopes produced from uranium-233.

MANAGEMENT REACTION

Management did not concur with our recommendations but instead proposed alternative actions designed to address certain issues described in our report. Notably, the Department indicated that a merit-based peer review would be conducted to examine the needs and priorities for actinium and bismuth. Management also noted that it planned to work with NIH to address the recommendations of the National Academy of Sciences. Citing concerns with cost, security, safety and Congressional mandates, management stated that it would continue with the disposition of the uranium-233 inventories at Oak Ridge and Idaho. Management also stated that it had largely addressed our recommendation to evaluate the cost and benefits of harvesting thorium-229 from uranium-233 prior to its disposal. Should Congress direct a new strategy for the disposition of uranium-233, the Department pledged to work to establish a new framework for the disposition of the material. Management's comments are contained as Appendix 3 to our report and provide additional details regarding uranium-233 disposition decisions.

We are encouraged that the Department is taking steps to conduct a merit-based peer review to examine the needs and priorities for production of progeny isotopes discussed

in the report and working with the NIH to address medical and research isotopic needs. Management's comments, however, were not fully responsive in one important respect. While the Department has completed several evaluations regarding uranium-233 disposition alternatives for the Oak Ridge inventory, these evaluations were completed several years prior to the National Academy of Sciences report and did not consider recent medical successes, the increasing demand for these isotopes, or address alternative technologies for providing them.

Given the past and current role of the Department of Energy in supporting medical and research activities, an evaluation needs to be completed to provide Congress, the Office of Management and Budget and other stakeholders with up-to-date information on which to base important public policy decisions regarding the Department's role in producing medical and research isotopes. Management could also consider and address cost and security concerns as a part of such a study.

Attachment

cc: Acting Deputy Secretary
Under Secretary of Energy
Under Secretary for Science
Chief of Staff
Assistant Secretary for Environmental Management
Assistant Secretary for Nuclear Energy
Director, Office of Science
Manager, Idaho Operations Office
Manager, Oak Ridge Operations Office
Team Leader, Audit Liaison Team, CF-1.2

SPECIAL REPORT ON MEETING MEDICAL AND RESEARCH NEEDS FOR ISOTOPES DERIVED FROM URANIUM-233

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ENSURING A VIABLE DOMESTIC SUPPLY OF ISOTOPES

Department Plans To Dispose of Uranium-233

Should the Department of Energy (Department) carry out its disposition plans to dispose of its uranium-233, there is no assurance that a viable inventory of progeny isotopes (actinium-225 and bismuth-213) will be available to meet domestic medical and scientific research needs. Currently, the domestic production of actinium-225 is approximately 650 millicuries per year. This supply has been provided through a small inventory of thorium-229 maintained at the Oak Ridge National Laboratory (ORNL) that was extracted from uranium-233. However, according to the National Institutes of Health's (NIH) projections, demand is far greater. Specifically, NIH projects a demand for actinium-225 of 1,700 millicuries in 2008 and 6,000 millicuries in 2009. With the decision to dispose of ORNL's inventory of uranium-233, the production capability will be inadequate to meet increasing domestic demands. Further, disposal of the Idaho National Laboratory's (Idaho) uranium-233 inventory will effectively eliminate the possibility of producing isotopes from that source.[1]

The loss of the uranium-233 will have significant impact on medical research which is now requiring a greater supply of progeny isotopes than ever before. For example, ongoing research includes Phase II clinical trials for the treatment of acute myeloid leukemia at Memorial Sloan-Kettering Cancer Center in New York. The results of Phase II trials showed increased survivability of those receiving the treatment, where patients had no other treatment options. Due to the limited availability of isotopes currently being produced from uranium-233, only one Phase II trial may be done at a time. Accordingly, researchers at Memorial Sloan-Kettering have decided to focus their current research on using the actinium-225 for alpha-particle immunotherapy trials, and to postpone research work using bismuth-213.

In addition to myeloid leukemia, research is being conducted using uranium-233 progeny isotopes to treat Non-Hodgkin Lymphoma, bone marrow transplants, AIDS, as well as cancers of the lungs, pancreas, and kidneys. Each treatment application requires separate clinical trials to obtain U.S. Food and Drug Administration (FDA) approval. Unfortunately, Memorial Sloan-Kettering decided to delay Phase III clinical trial efforts for myeloid leukemia due to the extremely short supply of bismuth. Without the Department's inventory of uranium-233, there will not be adequate domestic supplies to support the Phase III clinical trial

[1] It should be noted that actinium-225 has been extracted from Idaho's inventory of uranium-233 only on a laboratory scale. Planning for pilot, and ultimately production levels, is currently ongoing.

necessary to obtain FDA approval. According to the principal researcher at Memorial Sloan-Kettering for acute myeloid leukemia, if the Department continues with its plans to dispose of its inventory of uranium-233, then all research using actinium and bismuth will be lost due to the lack of supply. The president of a medical isotope supply company has noted that the medical industry will be able to use all of the progeny isotopes that could be produced from the Department's inventory should these clinical trials prove successful.

While limited foreign supplies are available for the progeny isotopes, researchers told us that such products have quality and reliability concerns. For example, Memorial Sloan-Kettering Cancer Center has obtained actinium-225 from foreign sources; however, due to quality concerns, the Center's representatives stated that they will not use foreign sources for cancer treatment in humans, but may continue to use it in research. Further, effective treatment requires a reliable supply because, once the patient begins treatment, it must be available on an uninterrupted basis. Although we were unable to specifically verify these assertions, researchers informed us that foreign sources are not reliable enough to meet this need.

The need for uranium-233 was recently confirmed by The National Academy of Sciences in its September 20, 2007, report entitled "*Advancing Nuclear Medicine Through Innovation*." The National Academies were asked by the Department and NIH to review the state of the science of nuclear medicine and future scientific areas of research for the Department's Medical Applications and Sciences Program. The study concluded that the Department and NIH need to focus their research on the development of new radionuclide production facilities and technologies as well as the development and use of targeted radionuclide therapeutics that will allow cancer treatments to be tailored for individual patients. The report specifically mentions the promise and need for actinium-225, one of 2 alpha emitters and one of 12 therapeutic radionuclides listed as being essential to nuclear medicine research. The report also states that several of these research radionuclides are not being produced in sufficient quantities to meet the research demand.

Several alternatives exist for assuring a viable inventory of these important radioisotopes. One alternative is to extract the thorium-229 prior to dispositioning the uranium-233. The contractor at ORNL responsible for disposition estimated the cost to extract the thorium-229 at $13.7 million prior to the termination of the extraction project. Another alternative is to retain some portion of the Department's inventory of uranium-233. It is important to note, however, that due to safety and security concerns, uranium-233 will not be transferred outside of the Department. Conversely, thorium-229 and actinium-225 can be transferred and sold outside of the Department. There are also a number of other processes being considered to produce these isotopes using, for example, accelerators, cyclotrons, and reactors. Various private enterprises are in the early stages of investigating these opportunities in order to meet the market demand. Each of the processes under investigation have their respective costs and benefits but it is not known when or if any of these will prove to be useful and affordable to the medical and research community. At present, none of the alternative technologies being considered have resulted in the actual production of actinium and bismuth.

Finally, we noted that uranium-233 also has value to support other Department missions such as the National Nuclear Security Administration's Test Readiness Program. According to the pre-decisional draft Implementation Plan for the Disposition of Surplus uranium-233, the decision to dispose of the ORNL inventory of uranium-233 was made, in part, based on the sufficiency of the uranium-233 in Idaho to meet potential future needs. However, in October 2007, the Department approved the Nuclear Materials Disposition and Consolidation Coordination Committee's recommendation to dispose of the Idaho inventory as well; therefore, there will no longer be any inventory to meet on-going programmatic needs.

Programmatic Authority

Based on our discussion with several Department program officials, we learned that there is currently a lack of programmatic authority to maintain the material and infrastructure necessary to continue providing progeny isotopes from uranium-233. Both the Idaho and ORNL uranium-233 inventories are now controlled and managed by the Office of Environmental Management (EM) whose mission is to dispose of these unwanted materials. Given this responsibility, EM is proceeding with short-term

actions to dispose of these materials as waste. EM's decision-making process considers various issues crucial for deciding whether to dispose of materials. One of the decision points is whether the material should be retained as a national resource. EM determined that uranium-233 should not be retained as a national resource because there is no program with an identified current use and funding to take custody of the inventory. Further, EM is under pressure to dispose of the Idaho inventory quickly since the license for a disposal cask to transport the uranium-233 expired on November 30, 2007. To avoid the cost of constructing and licensing a new cask, the Department is taking steps to extend this license for one year and is trying to dispose of the uranium-233 by September 30, 2008.

Prior to reaching its disposal decision, EM tried to transfer the uranium-233 to other programs, such as the Office of Nuclear Energy (NE). However, no programs stepped forward to take control of the material since EM required the adopting program to assume responsibility for managing the uranium-233 and paying for the disposition costs. To retain this material, programs must have current projects with current funding sources – a circumstance that does not currently exist.

NE currently manages the Department's Isotope Programs and would appear to be a likely Programmatic Secretarial Office to take custody of the uranium-233 inventory at Idaho. However, according to NE management, it lacks a Congressionally-approved programmatic mission and appropriated funds to take possession of the inventory. Additionally, NE has no program that can assume the disposition costs. For example, NE's Isotope Program has placed the need for isotopes derived from uranium-233 as one of its top priorities. However, the Isotope Program does not have the budget or programmatic authority to take control of uranium-233 feedstock materials that are necessary to produce these isotopes.

The Department's Fiscal Year (FY) 2009 budget request, however, seeks to transfer management of the Isotope Program to the Office of Science and devote more funding and attention to meeting the demand for research and medical isotopes. Under the proposal, all isotope-related facilities and funding would be transferred to the Office of Science and a number of research-related initiatives not funded in FY 2008 by NE would be funded at nominal

amounts. The FY 2009 budget request mentions that future research and development efforts will specifically consider the results of the recent National Academy of Science's report on nuclear medicine. Without the feedstock material from which to produce actinium and bismuth, however, research must necessarily focus only on alternative production methods – efforts that will at the least significantly delay delivery of these valuable isotopes to the medical research community.

Disposal Impacts

By pursuing disposition of its uranium-233, the Department is poised to dispose of a national resource. Although other means of producing these isotopes are currently under investigation by the research community, it is not yet known whether any of these will come to fruition. The facilities that originally produced this material have all been closed and decommissioned. To produce uranium-233 using existing facilities, such as the Idaho National Laboratory's Advance Test Reactor, program officials indicated that it would take approximately 1,000 years to replace the 320 kg of uranium-233 stored at Idaho. Another alternative is to produce the actinium-225 using accelerators or reactors; however, this requires chemical processing and/or separation steps that are yet to be determined. The current cost estimate to dispose of Idaho's inventory of uranium-233 is approximately $5 million. Alternatively, the current cost to store Idaho's inventory of uranium-233 is approximately $60,000 per year. However, the maintenance and storage costs of uranium-233 will grow over time because, due to the radioactive decay process, the material becomes increasingly more difficult to manage.

More important than the cost to replace or retain this material, is the potential for it to contribute to vital national interests. There is real promise for it to help save the lives of thousands of American cancer patients – in fact one top Departmental official estimated that these isotopes could be used to treat 6,000 patients annually. Also, should the nuclear renaissance expand to include research into proliferation resistant thorium cycle reactors, this material could be vital. Further, this material could help the nation explore space, offering an alternative to the plutonium powered radioisotope thermoelectric generator technology

that is currently deployed on NASA's deep space missions, as well as other important uses. However, if the Department continues with its plans to dispose of the uranium-233 none of these will come about.

RECOMMENDATIONS

We recommend that the Under Secretary of Energy, working with the Under Secretary for Science:

1. Prior to final disposal of the Department's inventory of uranium-233, evaluate the costs and benefits of:

    a. retaining the uranium-233 for the production of progeny isotopes;
    b. extracting the thorium-229 and continuing with disposition of the uranium-233; or,
    c. producing progeny isotopes using other technologies, such as an accelerator or reactor.

2. Work with the Office of Management and Budget and Congress, as necessary, to identify funding sources and approaches to meet demands for the isotopes discussed in this report.

3. Identify an appropriate Programmatic Secretarial Office to take responsibility for the material or identify means whereby industry can assume custody of the material if the decision is made to retain or extract isotopes from the uranium-233

MANAGEMENT REACTION

Management expressed concerns that many of the recommended corrective actions directed in this report have been previously implemented. Further, it noted that the current disposition strategy for the Oak Ridge uranium-233 had been directed by Congress. Alterations to the current strategy would have a significant impact on the safety and security postures in Building 3019 at ORNL and would require a change in Congressional mandate.

As to Recommendation 1, management stated that the analysis called for has been largely addressed through previous evaluations. Management stated, however, that the Office of Science will employ a merit-based peer review process to examine the needs and priorities for production of progeny isotopes discussed in this report, in the context of the broader needs for other research isotopes, and alternative production technologies. Regarding Recommendation 2, the Department stated it is working with the National Institutes of Health (NIH) to address the

recommendations of the National Academy of Sciences pertaining to the production of research isotopes in the broader context of needs across both industry and research. Should Congress direct an alternative strategy for the disposition of uranium-233, the Department will work to establish a new framework for the production of progeny isotopes. Management felt that this approach was consistent with Recommendation 3, which directs the Department to identify an appropriate Programmatic Secretarial Office to take responsibility for the material if a decision is made to use uranium-233 for isotope production.

AUDITOR COMMENTS

We are encouraged by management's proposals but remain concerned that the planned actions are not fully responsive to our recommendations. While we recognize that management previously evaluated disposition options for the Oak Ridge uranium-233 inventory, these evaluations were completed prior to the recent National Academy of Sciences report and did not consider the latest medical successes or the significant increase in projected demand for the isotopes discussed in the report. For example, one cost study referenced by management, "*Evaluation of the Options for Disposition of the U-233 Inventory at Oak Ridge National Laboratory,*" was completed in April 2005. Another study, "*Environmental Assessment for the U-233 Disposition, Medical Isotope Production, and Building 3019 Complex Shutdown at the Oak Ridge National Laboratory,*" was issued in December 2004.

Both of the studies (provided to us by management after we received its comments on our draft report) supported thorium extraction over continued storage of the Oak Ridge inventory. None of the studies, however, compared the cost of producing progeny isotopes through alternative technologies such as accelerators. This evaluation needs to be completed to provide Congress, the Office of Management and Budget and other stakeholders with up-to-date information on which to base an important public policy decision regarding the Department's role in the production of medical and research isotopes. The evaluations also could be useful in examining the security and cost concerns that management identifies as one of the primary drivers for declining to interrupt the Oak Ridge disposal efforts.

Finally, we are pleased that the Department now intends to work closely with NIH. Such interaction could be critical in identifying funding and authorization sources for producing these valuable isotopes. Management's comments on the third recommendation are responsive. However, the efficacy of this recommendation is

dependent upon the Department successfully interacting with Congress and the Office of Management and Budget as advocated in Recommendation 2.

Appendix 1

OBJECTIVE

The objective of this audit was to evaluate whether the Department of Energy's (Department) planned disposition of its uranium-233 inventories would permit it to meet projected domestic medical and research needs for actinium and bismuth isotopes.

SCOPE

The audit was performed from March 2007 to May 2008 at the Idaho Operations Office, Battelle Energy Alliance, LLC, and CH2M-WG Idaho, LLC in Idaho Falls, Idaho. We also obtained information from the Oak Ridge Operations Office in Oak Ridge, Tennessee; and the Isotope Program in Washington, D.C. The audit scope was limited to the disposition plans of uranium-233.

METHODOLOGY

To accomplish the audit objective, we:

- Reviewed Federal regulations and Departmental directives and guidance related to isotopes and uranium-233;
- Reviewed prior reports issued by the Office of Inspector General;
- Reviewed reports by the National Academy of Sciences and American Nuclear Society on isotopes;
- Reviewed the Idaho National Laboratory's Cooperative Research and Development Agreement to use Idaho's uranium-233;
- Held discussions with a researcher at Memorial Sloan-Kettering Cancer Center;
- Held discussions with companies in the isotope supply industry;
- Held discussions with program officials from Department Headquarters and sites reviewed, including representatives from the Office of Nuclear Energy, the Office of Science, and Environmental Management; and,
- Analyzed information provided by the organizations reviewed to determine disposition plans and other uses for uranium-233.

Appendix 1 (continued)

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Specifically, we assessed internal controls regarding the Department's disposition plans for uranium-233. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. Also, we examined the establishment of performance measures in accordance with the Government Performance and Results Act of 1993 as it related to the audit objective. Performance measures were identified at the Idaho National Laboratory and the Isotope Program. Finally, we did not rely on computer-processed data during the audit; therefore, we did not conduct reliability assessments on the data.

An exit conference was held on May 23, 2008, with the Associate Under Secretary for Energy, as well as representatives from the Offices of Environmental Management, Nuclear Energy, and Science.

Appendix 2

PRIOR AUDIT REPORTS

Office of Inspector General Reports

Management of the Department's Isotope Program (DOE/IG-0709, November 2005). The Department of Energy (Department) had not always provided researchers with the isotopes needed to conduct planned research. Since 1998, independent reviews, many of which were sponsored by the Department, have noted that the Isotope Program did not fully support production of research isotopes and that it had not adequately served the needs of the research community. Even though the Department recognized in the 2005 Isotope Program Plan that the current structure of the Program has had a "severe chilling effect on several promising areas of medical research in the United States," it did not take what we considered to be adequate action to address production issues. The Isotope Program Director stated that the Program is receiving frequent requests for other research isotopes that it will be unable to fulfill, including actinium, lutetium, and barium. For example, the Department is at its production limit for actinium, and the Director stated that the Program would sell more of this isotope if more could be produced. The price of actinium-225, from Fiscal Year (FY) 2002 to FY 2003, increased from about $580 to $1,203 per unit. According to the FY 2005 Isotope Program Plan, if the Department could produce a reliable supply of certain isotopes, there would be immediate use for them in medical research with some moving to clinical trials and widespread application. Further exacerbating this problem, the National Cancer Institute and the Society of Nuclear Medicine expect there to be a dramatic increase in the use of medical isotopes by the research community for a broad range of efforts.

Other Reports

Advancing Nuclear Medicine Through Innovation (National Academy of Sciences, September 2007). Advances on the horizon in nuclear medicine could substantially accelerate, simplify, and reduce the cost of delivering and improving health care. However, the Department's Nuclear Energy Isotope Program is not meeting the needs of the research community because the effort is not adequately coordinated with National Institutes of Health activities or with the Department's Office of Biological and Environmental Research. Public Law 101-101, which requires full-cost recovery for Department-supplied isotopes, whether for clinical use or research, has restricted research isotope production and radiopharmaceutical research. For targeted radiopharmaceuticals to have a larger role in cancer treatment, the following key issues must be resolved: more stable labeling methods for alpha emitters, particularly actinium-225 and astatine-211, to maximize the therapeutic potential of therapeutics labeled with these radionuclides. The radionuclides most frequently described as being essential to nuclear medicine research includes actinium-225. Several of the research radionuclides are not being produced in sufficient quantities to meet the research demand.

The U.S. National Isotope Program: Current Status and Strategy for Future Success (American Nuclear Society, March 2005). Overall, this report found that the U.S. isotope program is in a state of crisis, and immediate action is needed to address the major program issues. The issues specifically directed at the Department include:

Appendix 2 (continued)

- Research & Development (R&D) isotopes are not available at reasonable prices due to declining resources and policy change in the Department's Isotope Program.

- Elimination of Department R&D funding is impacting development of future isotope applications; and,

- Failure to provide the necessary leadership to reverse the decline of the Department's Isotope Program.

Appendix 3

Department of Energy
Washington, DC 20585

MAR 2 7 2008

MEMORANDUM FOR GREGORY FRIEDMAN
INSPECTOR GENERAL

FROM: C.H. ALBRIGHT, JR.
UNDER SECRETARY OF ENERGY

RAYMOND L. ORBACH
UNDER SECRETARY FOR SCIENCE

SUBJECT: Draft Report on "Meeting Medical and Research Needs for Isotopes Derived from Uranium-233"

This memorandum is in response to the subject draft report issued on February 12, 2008. We appreciate the opportunity to comment on the findings identified in, and the recommendations resulting from, the Inspector General's (IG) review. We have reviewed the IG's recommendations and have concerns that many of the corrective actions directed in the report have been previously implemented. Further, the current disposition strategy of the Uranium-233 material has been directed by Congress. Alterations to the current strategy would have a significant impact on the safety and security postures in Building 3019 at ORNL and would require a change in Congressional mandate.

Recommendation 1, which calls for analyses to assess the costs and benefits associated with using Uranium-233 to produce progeny isotopes, has been largely addressed through previous evaluations. The Office of Science (SC) will employ a merit-based, peer review process to examine the needs and priorities for production of progeny isotopes discussed in this report, in the context of the broader needs for other research isotopes, and alternative production technologies.

SC's proposed peer review process for determining needs and priorities for research isotopes is consistent with Recommendation 2, which directs the Department to identify funding sources to meet the demand for isotopes discussed in the report. In addition, the Department is working with the National Institutes of Health to address the recommendations of the National Academy of Sciences pertaining to the production of research isotopes in the broader context of needs across both industry and research.

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Should Congress direct a new strategy for the disposition of Uranium-233, DOE will work to establish a new framework for the disposition of the material. This approach is consistent with Recommendation 3, which directs the Department to identify an appropriate Programmatic Secretarial Office (PSO) to take responsibility for the material if a decision is made to use Uranium-233 for isotope production,

The attached comments on the draft report include the perspectives of the Office of Nuclear Energy, the Office of Science, and the Office of Environmental Management.

Attachments

cc: T. Harms, S-3
M. Lewis, CF-1.2
H. Smith, EM-3.1
S. Johnson, NE-2
D. Miotla, NE-3
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G. Boyd, ORO
S. McCracken, ORO

bcc: J. Boone, EM-6
J. Venneri, SC-41
J. Miller, ORO

Appendix 3 (continued)

Comments on
Inspector General Draft Report
"Meeting Medical and Research Needs for Isotopes Derived from Uranium-233"

We recommend that the Under Secretary of Energy, working with the Under Secretary for Science:

Recommendation 1

Prior to disposal of the Department's inventory of Uranium-233, evaluate the costs and benefits of: a.) retaining the Uranium-233 for the production of progeny isotopes; b.) extracting the Thorium-229 and continuing with disposition of the Uranium-233; or c.) producing progeny isotopes using other technologies, such as an accelerator or reactor.

Management Comment

The current course of action for disposition of Uranium-233 has been recently reviewed and endorsed by the Department; in addition, there are significant safety and national security drivers for the disposition project. Subsections a) and b) of this recommendation are not supportable since the report does not fully explore or properly recognize these actions.

The Department has evaluated and documented costs associated with retaining the Uranium-233 for the production of progeny isotopes, as well as extracting the Thorium-229 and continuing with the disposition of the Uranium-233. In 2005, at the direction of Congress, the Department re-scoped the Uranium-233 project to terminate isotope extraction and expedite down blending and disposal of this material. It must be noted that Congress has registered its opposition to continued extraction of Thorium-229 from Uranium-233 prior to disposal. The facility design is being finalized and facility construction is scheduled to begin in 2009; Uranium-233 processing activities are scheduled to begin in 2012. The Nuclear Materials Disposition and Consolidation Coordination Committee (NMDCCC) undertook a rigorous process in consultation with all elements of the Department which reviewed the disposition plans for Uranium-233 and recommended continuation of the disposition activities; this recommendation was accepted by the Department. There are no additional facts in this report that provide a basis for further studies or estimates prior to proceeding with disposal of the Uranium-233 material. Moreover, there is no mandate, nor is funding available, to alter the current disposition strategy for Uranium-233.

Changing the current strategy would invite significant cost, schedule, safety and national security issues. For example, if it is decided that the Thorium-229 extraction process should be revisited, the Department would incur costs for the revised design, as well as costs associated with the resulting delays to the current project schedule. In addition to those project costs attributable to schedule delays, any delay in the project will increase safety and security costs dramatically.

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Appendix 3 (continued)

In the area of safety, timely completion of this project is required in partial response to the Defense Nuclear Facilities Safety Board (DNFSB) recommendation 1997-1 which identified concerns with the integrity of packaging of the Uranium-233 materials, and required an extensive program of inspection and repackaging to ensure the continued long-term safety of the material in storage. Subsequent inspection activities have satisfied the DNFSB's concerns regarding the long-term safety of the material. However, delays in the project will re-open the question of long-term safety and force the Department to revisit the DNFSB recommendation.

In the area of security, approximately $5M per year is expended to deal specifically with the security issues associated with Building 3019. Delay in the execution of this project will not only result in incurring these costs over a longer, indefinite period but require significant additional one-time security costs (~$25M) as well as an escalation of the $5M annual costs to about $15-20M per year. This is because the execution of this project in a timely fashion is a key to satisfying the requirements for meeting the design basis threat (DBT) in Building 3019. Delays in the project will result in the need to re-open this issue and will require additional security expenditures.

The Department's FY 2009 Congressional budget request transfers responsibility for the Medical Isotopes program from the Office of Nuclear Energy to the Office of Science, and includes additional funds for research isotope development and production in response to the needs of the scientific community for commercially-unavailable research isotopes. The Department's current policy for production of isotopes, including research isotopes, is that the production costs must be fully recovered from the customers; as such, the Department does not produce isotopes speculatively. The Office of Science, beginning in FY 2009, will examine the production of progeny isotopes discussed in this report using other technologies, such as an accelerator or reactor. The ultimate decision on whether to produce research isotopes will depend upon a merit-based peer review process. However, a decision to use Uranium-233 to produce isotopes will also require a new Congressional mandate.

Recommendation 2

Work with the Office of Management and Budget and Congress, as necessary, to identify funding sources and approaches to meet demands for the isotopes discussed in the report.

Management Comment

The Department's FY 2009 Congressional budget request transfers responsibility for the Medical Isotopes program from the Office of Nuclear Energy to the Office of Science. If approved by Congress, SC will determine the development and production of research isotopes by peer review, consistent with other basic research efforts within SC. The peer review will be based on established criteria including, but not limited to, non-proliferation and national security concerns, prioritized interest by the nuclear medicine and broader research community, costs, safety concerns, whether specific isotopes can be

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Appendix 3 (continued)

obtained through more desirable alternative methods, programmatic interests, and budget needs and constraints.

SC, working with NE, has established a Working Group with the National Institutes of Health to address the recommendations of the National Academy of Science's report, and has initiated preparations for a workshop to bring together industrial, federal, and research stakeholders to discuss the needs, priorities, and potential paths-forward for meeting the U.S. commercial and research isotope needs.

Peer review and NIH working group activities designed to identify funding sources and approaches to meet demands for research isotopes will take place during FY 2008 and FY 2009. The earliest the outcome of these efforts may be reflected with regards to the Office of Management and Budget and Science will be the FY 2011 budget formulation process.

Recommendation 3

Identify an appropriate Programmatic Secretarial Office to take responsibility for the material or identify means whereby industry can assume custody of the material if the decision is made to retain or extract isotopes from the Uranium-233.

Management Comment

The Office of Environmental Management (EM) currently has responsibility for the disposition of the material, and will continue to move toward disposal, as directed by Congress, until such time that Congress directs an alternative disposition pathway. Should Congress provide new direction and funds to the Department to pursue the production of progeny isotopes using Uranium-233 (either through extraction of Thorium-229 or other means) then DOE will establish a new framework for the disposition of the material.

DM#182228

IG Report No. DOE/IG-0795

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