

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 2023

THURSDAY, MAY 26, 2022

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Jon Tester (chairman) presiding.

Present: Senators Tester, Baldwin, Shelby, Collins, Graham, Blunt, Moran, and Hoeven.

DEPARTMENT OF DEFENSE

DEPARTMENT OF THE NAVY

OFFICE OF THE SECRETARY

STATEMENT OF THE HON. CARLOS DEL TORO, SECRETARY

OPENING STATEMENT OF SENATOR JON TESTER

Senator TESTER. Good morning. We will call this committee to order. Let me begin by welcoming our witnesses. Secretary Del Toro, this is your first appearance before our subcommittee, and I look forward to working with you.

Admiral Gilday and General Berger, you were both here last year, so welcome back to you both. We appreciate your leadership of our Nation's Navy and Marine Corps and look forward to discussing your fiscal 2023 budget priorities with you. Let's be clear, despite Russia's ongoing war with Ukraine, China remains the pacing threat, and that pace is a run, if not a full on sprint. So the question we are asking as we work on next year's budget is, how do we increase our pace of modernization to keep up with this threat?

For the Marine Corps, reshaping the force for the future is absolutely the key. General Berger, we look forward to getting an update from you about the implementation of Force Design 2030, and any challenges or opportunities you are finding as you modernize today's Marine Corps.

For the Navy, Secretary Del Toro and Admiral Gilday, you are faced with the balancing act between substantial costs of building and maintaining a fleet of nearly 300 ships, and the additional costs of modernizing Navy capabilities across the board to meet the threats of the future. To be frank, despite record high investments, the Navy's planned future force structure is not clear.

And I understand there are ongoing studies to determine the size and makeup of the fleet of tomorrow. We urge you to communicate those plans with us sooner rather than later. I would add that no matter the desired outcome, holding people accountable, whether it be Government or civilian, for delays in ship construction or cost growth in our modernization programs has to be a part of the modernization strategy. Accepting cost overruns and schedule delays as a matter of course simply is not acceptable.

The committee is eager to work with you on solutions that enable us to find the right balance between modernizing and maintaining the force we have and looks forward to hearing from you on where we have made progress and the challenges that still remain. Once again, it is a pleasure to have all three of you in front of the committee today, and we look forward to your testimony. Senator Shelby.

STATEMENT OF SENATOR RICHARD C. SHELBY

Senator SHELBY. Thank you, Mr. Chairman. Secretary Del Toro, Admiral Gilday, General Berger, again, welcome to the committee. I too look forward to hearing more about the budget request for the Department of the Navy and Marine Corps for 2023. The Department of Navy has played and will continue to play a critical role in the defense of our Nation.

The capabilities that it has and the future capabilities that it pursues communicates our resolve to both our adversaries and to our allies. While it is important that the Navy continue to man, train, and equip a ready force, we must also prioritize, as we have talked, key modernization priorities.

These priorities include hypersonic weapons and recapitalization of the Navy's nuclear arsenal, all while keeping a sharp watch on our adversaries today. China and Russia, as the Chairman said, continue to make unprecedented expenditures in advanced weapons, demonstrating new capabilities and their commitment to increase capacity.

And while the U.S. seeks to maintain military superiority, it is concerning to all of us that the total funding requested for the Department of the Navy and Marine Corps does not even keep pace with inflation. I am concerned about this—what this communicates to both our allies and our adversaries.

Therefore, I look forward to hearing how the fiscal 2023 budget request proposes to meet the needs of the Navy and the Marine Corps while preserving our current and our future advantages. Thank you, Mr. Chairman.

Senator TESTER. Thank you, Senator Shelby. Secretary Del Toro, the floor is yours.

SUMMARY STATEMENT OF HON. CARLOS DEL TORO

Secretary DEL TORO. Good morning, Chairman Tester, Vice Chairman Shelby, distinguished members. It is an honor to be here alongside General Berger and Admiral Gilday to discuss the posture of the Department of the Navy. I look forward to working with you to ensure that our sailors and Marines are equipped, trained, and prepared to the best of our abilities so that they can fulfill our vital role to provide combat ready forces in support of the Joint

Force. The United States requires a strong Navy and a strong Marine Corps.

Our global economy and the self-determination of free nations everywhere depends on sea power. Our National Security depends on sea power. That is particularly true in the Indo-Pacific, where Beijing's aggression threatens the rules based international order that protects us all. To answer that challenge, your Navy and Marine Corps must have the power to maintain credible, integrated deterrence by campaigning forward, forward from the sea, on the shore, and in the air.

Thanks to the leadership of President Biden, Secretary Austin, this budget does provide the right balance for capacity, lethality, modernization, and readiness we need to execute the national defense strategy. We will invest these resources through the execution of a concise, clear, and transparent strategy rooted in three guiding principles. First, maintain and strengthen our maritime dominance that we can deter potential adversaries and fight and win decisively.

Second, empower our sailors and Marines by fostering a culture of warfighting excellence founded on strong leadership, dignity, and respect for each other. And third, strengthen our strategic partnerships across the Joint Force, industry, and our international partners around the globe. We are executing this strategy through the integrated visions of the Marine Corps Force Design 2030 and the Navy Navigation Plan.

I strongly support these visions and committed to fielding the ready, capable, and modernized force required to ensure their success. To maintain and strengthen maritime dominance, we have to be serious about fielding and maintaining the right capabilities to win wars.

That is why our budget strongly invests in a nimble networks and survivable Navy with platforms like Columbia, DDG Flight III, and enhanced cyber and autonomous capabilities that enable our fleets' campaign forward in a distributed manner. This budget invests in a truly expeditionary and persistent Marine Corps, with the mobility and the readiness to respond in force wherever and whenever needed.

We are advancing cybersecurity and resilience efforts across the department with investments to expand cyber mission force teams, harden networks, and leverage artificial intelligence and machine learning to defend information infrastructure. To ensure the combat readiness of our platforms, we are more than doubling SIOP (Shipyard Infrastructure Optimization Program) investments over the previous budget.

This budget invests in the climate resiliency of our force and facilities, while continuing efforts to substantially reduce our impact on climate change. We are investing in facilities that promote the quality of life of our personnel and their families. As I discussed on my recent visit to the USS George Washington last week, we are prioritizing access to mental health and eliminating barriers to seeking that help.

We owe it to our military families to ensure their safety and well-being. And when we do fall short, we will look our problems square in the eye, and we will take necessary action to correct

them. We are investing in our efforts to recruit, retain, train, and promote the best from all of America, and we are increasing funding for naval and cyber education and enhanced shipboard training so our sailors and Marines can build their careers wherever the service takes them.

We appreciate this committee's interest ensuring our forces have the right facilities to train, fight, and win, including the potential expansion of the Fallon Training Range Complex. We also appreciate the committee's efforts to include new tools within the NDAA (National Defense Authorization Act) to deter destructive behavior and prosecute sexual assault, domestic violence, and other offenses. At every level of leadership, we are determined to prevent sexual assault and sexual harassment, hold offenders accountable, and create a safer, stronger, more inclusive Navy Marine Corps team.

I want to close by noting the importance of strategic partnerships for the Joint Force and our industrial base to our allies and partners around the world. I have personally seen our partnerships and alliances in action, from F-35b operations in the Indo-Pacific to NATO's (North Atlantic Treaty Organization) exercises in Norway and the Mediterranean. But our most important partnership is indeed with the American people.

And that is why I am grateful for the oversight and interest of this committee, and I look forward to continuing with you in the years ahead.

[The statement follows:]

PREPARED STATEMENT OF CARLOS DEL TORO

Chairman Tester, Vice Chairman Shelby, Members of the Committee, it is an honor to appear before you alongside General Berger and Admiral Gilday to discuss the posture of the Department of the Navy (DON). I look forward to working with you to ensure that our Sailors and Marines are equipped, trained, and prepared to the best of our ability, so they can fulfill their vital role in support of the Joint Force, protecting our national security interests.

The United States requires a strong Navy and Marine Corps. The global economy, and the self-determination of free nations everywhere, depends on sea power. Thirty-one million American jobs and \$5.4 trillion in annual commerce rely on the sea lanes, and one third of all international commerce transits the South China Sea. Without a ready, and capable Navy and Marine Corps protecting the sea lanes and lines of communications, the global economy could easily halt.

The national and economic security of our Nation depends on free and open access to the sea. And the rules-based international order that benefits us all requires a strong maritime force, campaigning forward alongside allies and partners to provide the sea control and integrated deterrence we need to counter strategic competitors, from Beijing, Moscow, and beyond.

As Secretary Austin stated in his testimony before this Committee, "Integrated deterrence means combining our strengths across all the warfighting domains to maximum effect to ward off potential conflict." The Navy and Marine Corps Team offers forward maneuverable strengths in every domain that serve as a force multiplier within the Joint Force and alongside our allies and international partners. We are determined to ensure the integrated all domain force required to ensure maximum effect for civilian and military leadership, across the range of military options.

Thanks to the leadership of President Biden and Secretary Austin, PB23 provides the right balance of capacity, lethality, modernization, and readiness needed to field the globally engaged and dominant naval force required by the National Defense Strategy. This budget will maximize the efficiency and effectiveness of each dollar entrusted to us by the American taxpayer, ensuring sufficient resources for today's challenges, while building future overmatch.

We will invest these resources through a concise, clear, and transparent strategy centered on three primary lines of effort:

- Strengthen Maritime Dominance.
- Empower Our People.

—Expand Strategic Partnerships.

Admiral Gilday, General Berger, and I are executing these lines of effort as one fully integrated DON. The Navy Navigation Plan and Marine Corps Force Design 2030 are complementary visions working together to ensure the distributed capacity, long range fires, amphibious mobility, and network of allies and partners our Sailors and Marines need to make mission.

Together, we are committed to working with you to ensure these plans are fully resourced, with vigorous oversight, to deliver maximum value to the American taxpayer, and to fulfill our sacred oath to protect the American people.

STRENGTHEN MARITIME DOMINANCE

The security and freedom of the seas, and the resulting prosperity and security of our nation, did not happen on its own. It required significant investment and foresight by generations of legislative and executive leaders.

Two hundred and twenty-five years ago, Congressional funding led to the commissioning of *USS Constitution*. One hundred years ago, the Navy launched our country's first aircraft carrier, *USS Langley*. Eighty years ago, the Marine Corps began purchasing Higgins Boats. And seventy years ago, President Truman laid the keel for *USS Nautilus*, the first nuclear submarine.

Each of these investments yielded exponential returns, fueling the remarkable growth and global leadership of the United States during centuries of conflict and change. We stand at a similar inflection point today, where our national and economic security depend on the investments we make today to build and maintain our maritime dominance.

Just as our first frigates defended American shipping from foreign aggression, tomorrow's networked frigates and destroyers will define the future of sea control. Just as our early aircraft carriers provided the critical edge at Midway, *Ford-class* carriers will transform the forward posture of our Nation in the conflicts ahead.

Tomorrow's amphibious platforms will maintain our defense credibility throughout the Indo-Pacific. And just as our undersea fleet maintained the most survivable leg of the nuclear triad for the last seven decades, our strategic future depends on delivering *Columbia-class* submarines, our top acquisition priority.

Sea power has always required foresight and investment, and the future of our Nation will be defined by the strategic choices we make today. The posture 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.

The DON fiscal year 2023 budget request delivers these 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, as well as our allies and international partners.

Fleet Investments

The CNO's Navigation Plan refocuses our integrated all-domain naval power on the core functions of sea control and power projection through Distributed Maritime Operations (DMO). DMO places a high priority on the long range fires and advanced connectivity that will result in a resilient, networked, and dispersed fleet, providing decision advantage and unified action in contested environments.

PB23 will invest in both manned and unmanned platforms to meet the strategic and operational demands of DMO, and will invest in the industrial capacity and capability to meet availability and maintenance demands as required to defend the Nation. PB23 focuses on delivery and maintaining platforms that will provide the greatest combat capabilities and readiness across the fleet, while divesting in platforms that have less relevance in contested maritime environments where adversaries have advanced weapon systems. This budget provides funding for nine battle force ships in the coming year, including two *Virginia-class* attack submarines and two Arleigh Burke Flight III Destroyers, and also continues funding for the *Columbia-class* and *Ford-class* programs.

PB23 increases innovation and modernization efforts in Research and Development by 9 percent for the Navy and 6 percent for the Marine Corps. A \$2.7 billion investment in long range fires and hypersonic technologies will extend the lethality and capability of our platforms, and ensure maximum reach, survivability and decision space for our Sailors and Marines. With an increase of \$81 million for Operation Overmatch in fiscal year 2023, the Navy will field a resilient, networked, and dispersed fleet, connected through the Naval Operational Architecture and Project Overmatch to provide decision advantage in contested environments. PB23 also commits \$1.2 billion of Research and Development funding to recapitalization of all

portions of the undersea leg of the triad including the submarines, TACAMO, Trident D5, and our Nuclear Command, Control and Communications network.

Underpinning the capabilities required to strengthen and maintain our maritime dominance is our continued need to advance cyber security, cyber resiliency, and cyberspace efforts across the Department. The Department's fiscal year-23 budget submission continues strong investments to expand our Cyber Mission Force teams, harden our networks and computing systems, and leverages artificial intelligence and machine learning tools to enable rapid decisionmaking to better defend the information infrastructure.

To increase availability, improve maintenance, and maximize throughput for our warships, PB23 continues targeted shore investments designed to increase fleet readiness. I was honored to break ground on a new drydock facility at our public shipyard in Portsmouth last fall, and have visited each of the Navy's four public shipyards as Secretary. Each of these facilities provides critical contributions to the availability and maintenance of our fleet, and each has modernization imperatives which are being addressed.

In order to improve naval maintenance production capacity at these facilities, the DON is fully committed to the Shipyard Infrastructure Optimization Program (SIOP), more than doubling SIOP investments over the previous budget, with over \$1.7 billion in funding for dry dock recapitalization, facility optimization, and capital equipment and modernization.

Expeditionary Capabilities

PB23 continues planning and design for the future Light Amphibious Warship (LAW). This budget provides for one Amphibious Transport Dock (LPD) and one Amphibious Assault Ship (LHA). Amphibious warships like the LHA and LPD are vital for the organic mobility and expeditionary persistence of our Marine Corps, and remain in high demand as a "Swiss Army Knife" for the Joint Force, meeting varying needs in dynamic situations. These ships provide the sealift necessary to deploy Marines for crisis response, contingency missions, humanitarian assistance, and integrated deterrence, supporting Marine Corps Aviation as well as diverse capabilities such as ISR/sensing, long range fires, and decoys.

The Joint Force needs a truly expeditionary and persistent Marine Corps—armed, agile, and postured—capable of operating persistently inside actively contested environments, and ready to respond in force at the speed of relevance. To answer these needs, the Marine Corps has put into motion an aggressive modernization of the Service through Force Design 2030, a transformational effort rooted in the anticipated challenges of the future operating environment. I thank the Congress for its support of this transformation in the fiscal year 2021 and fiscal year 2022 authorization and appropriation bills. Your support is critical to the future readiness and lethality of the Marine Corps. Building on the cooperative efforts of all of our sea Services, the Marine Corps is reinvigorating the Fleet Marine principle to execute expeditionary warfighting concepts including Expeditionary Advanced Basing Operations (EABO) and Littoral Operations in a Contested Environment (LOCE).

Agile, smaller combined-arms warfighting units, such as the Marine Littoral Regiment (MLR), Amphibious Ready Group (ARG) and Marine Expeditionary Unit (MEU) are the 9-1-1 force for our Combatant Commanders in the most dynamic and volatile situations. For example, during the evacuation efforts at Kabul International Airport last August, the 24th Marine Expeditionary Unit was first on the ground, keeping the aviation lifeline open.

The ARG/MEU is able to support a variety of mission sets, from humanitarian assistance, to coordinated operations with our allies and partners, to agile and lethal response in the combat zone. All of this requires investment in organic mobility, from the fleet, to the field, to the air.

Accordingly, PB23 prioritizes and fully funds Marine Expeditionary Forces, and will advance the expeditionary vision of Force Design 2030 through aircraft like the CH-53K King Stallion, with rotary heavy lift capability unmatched across the Joint Force. Platforms like CH-53K and C-130J will play a key role in the rapid deployment of Marines and equipment wherever and whenever needed.

Air Wing of the Future

As we mark the centennial of American carrier aviation, naval aviators from both the Navy and Marine Corps are achieving exceptional results in the operational deployment of the F-35 Lightning.

From the short takeoff and nimble capabilities of the F-35B, to our unmatched, carrier-based, precision strike F-35C, the Joint Strike Fighter is having a transformational effect on the reach and capability of naval aviation. In the coming years, a combination of F-35 and Next Generation Air Dominance systems will provide

even greater power projection from our carrier force. PB23 will procure additional F-35C and F-35B aircraft, and will also invest in the Navy's MQ-25 unmanned aerial refueling system and MQ-9 Reaper, a crucial enabler for the effectiveness, visibility, and maneuverability of Marines in the field.

We are taking a comprehensive approach to modernizing the Navy's Fleet Readiness Centers (FRCs), which conduct depot level maintenance, repair, and overhaul of U.S. Navy aircraft, engines, components and support equipment. To build on the positive trend lines we have achieved in operational availability and readiness, PB23 includes an 11 percent increase in airframe, engine depot, and component funding. We continue to see positive results in aircraft availability, sustaining a mission-capable rate of 80 percent for F/A-18E/F Super Hornets for three consecutive fiscal years, and five additional airframes achieving 80 percent mission capability over the last 18 months.

Through the Performance to Plan (P2P) initiative we're using data-driven decisionmaking across the Navy to identify the root causes of maintenance delays and operational mishaps. This data-driven decisionmaking is integral to a "Get Real, Get Better" approach being applied across the Navy, demanding rigorous self-assessment, detailed analysis characterizing current performance, and providing opportunity to implement improvements. And in order to ensure every dollar is maximized to equip and prepare the warfighter, we are building on our financial statement audit success to improve our business systems, account for every asset, and leverage data as a strategic asset.

Sustaining Maritime Information Superiority

Modernization of our information technology infrastructure is a critical warfighting priority for the DON. As an information age naval force, every Navy and Marine Corps warfighting function and mission area is dependent on data and information to rapidly inform decisionmaking throughout the entire competition to conflict continuum. We are using data driven decision-making to achieve tangible savings while consistently working to become more effective and more efficient. For example, the Marine Corps has implemented Artificial Intelligence-enabled counter-intrusion systems aboard bases, and we will continue to explore the use of information technology to harden defenses and enable capabilities.

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 exploring the warfighting enabling capabilities of 5G expansion, and seeking additional ways to leverage new technology for distributed warfighting and unified command and control. 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.

Climate Readiness

The United States Navy and Marine Corps recognize the reality of global climate change and the need to prepare for its short and long term effects on operational capability, as well as our responsibility to mitigate our environmental impact.

To make our shore infrastructure more resilient to a changing climate, the Department is incorporating sea level rise modeling and modern facility standards into our new building designs. Navy and Marine Corps installations are adding a resilience component to their master plans and taking steps to ensure critical-mission infrastructure has access to reliable energy sources.

Reducing fuel consumption also reduces overall costs, not only related to end-point consumption, but also costs associated with transporting fuel and resources to protect those assets. New technologies are reducing fuel consumption, including hybridization for newer platforms. In addition, advanced batteries and synthetic fuels are the starting point for platforms that are smaller, more lethal, and more integrated into future battlefield networks.

PB23 resources \$719 million for climate-cognizant solutions including hybrid vehicles and propulsion system efficiencies. Reducing energy demand and fuel consumption through advanced technology will enable warfighters to remain forward and self-sufficient for a longer period of time while also contributing to climate change goals.

Especially noteworthy are the regional challenges facing Naval forces in the Arctic, from the changing physical environment and greater access to sea routes and resources, to increased military activities by Arctic states, such as Russia, and non-Arctic states and their attempts to alter Arctic governance. Harsh operating conditions in the Arctic affect our meteorological forecast capability, hydrographic surveys, modeling, and sensors have the potential to impact sea lines of communications.

I have therefore directed a review of our current strategic document for the Arctic, the Arctic Blueprint, to ensure we are adequately preparing our forces for climate change within and through the region. The Navy is also engaging with our Arctic partners and allies through programs such as the Denmark Newport Arctic Scholars Initiative recently co-hosted by the President of the U.S. Naval War College and Commandant of the Royal Danish Defense College.

EMPOWERING OUR PEOPLE

Everywhere I've gone as Secretary of the Navy, I have been impressed with the professional dedication of every Sailor, Marine, and Civilian executing the many missions of the DON. Admiral Gilday, General Berger, and I are determined to ensure opportunities for every Sailor, Marine and civilian to advance and grow without barriers or discrimination. It all starts with a culture of warfighting excellence, where all are treated with dignity and respect.

Building the Future Force

To maintain a Fleet prepared to fight and win in long term strategic competition, we must continue to evaluate and improve our capability to attract, retain, and develop a talented and diverse workforce. We face an intensely competitive job market for talented workers, and a rapidly evolving tactical and technical landscape, driving us to modernize and enhance our entire talent management approach in order to succeed.

We are expanding opportunities for civilians with prior military service to contribute their unique experiences to our force 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.

We are continuously identifying opportunities for personnel to develop their leadership skills throughout the ranks, promoting equal opportunity in every aspect of our force. For example, the Marine Corps Talent Management 2030 is focused on identifying the individual strengths of every Marine and matching these talents to the needs of the Corps.

Our mission demands leaders who possess the highest intellectual and warfighting capabilities to confront the many dangers of a complex world. We value critical thinking, creativity, communication, collaboration, and problem solving. The institutions of our naval education enterprise are developing leaders with the warfighting rigor, intellectual dynamism, and innovation to hold our strategic advantage against competitors and global adversaries. We are creating a continuum of learning through ready, relevant education, attuned to the battle rhythm of active duty service.

PB23 invests \$425 million in our naval education institutions, including the U.S. Naval Academy, Naval Postgraduate School, Naval War College, and Marine Corps University. This funding will expand access to the Naval Community College ensuring that all of our personnel have access to a high quality college education, no matter where their service takes them. We are investing in distance learning, cyber education, and increasing shipboard training and certification opportunities, while expanding opportunities for personnel to work and research alongside our industrial and academic partners.

We appreciate the Congress's interest in ensuring our naval forces have the right facilities to train, fight, and win. Specifically, we are grateful for the Congress'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. I have personally met with Tribal and local community leaders, as well as my counterparts across the Federal Government, and I am committed to finding a favorable solution for everyone involved.

Diversity, Equity, and Inclusion

In order to meet the challenges of a complex world, we must continue to recruit, retain, train, and promote the best from all of America. We need a diverse force, so every child in America can see themselves wearing the uniform or working in our civilian ranks tomorrow, and every viewpoint is represented in our operations today, so that we can draw talent from all of America to build our warfighting advantage. This is a national security imperative, and a critical aspect of the DON's Diversity, Equity and Inclusion initiatives.

We have been reaching out across the Department, through efforts like Task Force One Navy, the Executive Diversity Advisory Council, the USMC Diversity Review Board and the Navy DEI Council to understand what is working, and where we fall short. We are looking at areas of under-representation in military and civil-

ian occupations, and finding ways to build diversity, equity and inclusion efforts into our Navy and Marine Corps culture.

We are expanding recruitment efforts like our Junior Officer Diversity Outreach Program, to build recruitment networks in diverse and underrepresented communities. We are expanding and increasing awareness of career development and mentorship opportunities to help cultivate the next generation of diverse leadership through the ranks. And in accordance with the 2017 Women, Peace and Security Act, we are working with partner nations to expand the meaningful participation of women in defense around the world.

We continue to expand gender integration in Marine Corps recruit training and operational units, strengthening our entire force. Out in the fleet, women are leading as never before. In December, I commissioned *USS Daniel Inouye*, under the command of Commander DonAnn Gilmore. In January, *USS Abraham Lincoln* Captain Amy Bauernschmidt became the first woman to command an aircraft carrier at sea. And in February, I was honored to preside over the change of command at *USS Constitution*, as Commander Billie Farrell became the first woman to command our Nation's flagship.

And many more outstanding women are on their way up the ranks. This semester at the U.S. Naval Academy, five of the six people chosen through a competitive process to serve on the staff of the Brigade Commander, the highest ranking midshipman, are women, including the Brigade Commander, herself.

From the E-Ring to the Air Wing, the deckplates to the field, our force is stronger today because of the many women and minorities in our ranks and leadership. But there is still more work to be done. We are working to reduce under-representation by examining our accession and promotion pipelines to recognize and value the service of all our enlisted and commissioned personnel. And our office of Diversity, Equity and Inclusion continues to identify areas for improvement and action. We look forward to working with the Committee to continue expanding opportunities for all Americans to serve and lead.

Destructive Behaviors

Leaders at all levels are expected to set the tone for a healthy climate and culture where destructive behaviors are never tolerated. 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.

Throughout 2021, DON representatives participated in the Secretary of Defense's Countering Extremist Activity Working Group to develop recommendations to address extremism in the ranks. Specific focus areas included military justice and policy, training and enhancing the insider threat program.

This budget requests \$240 million for Sexual Assault Prevention and Response activities—an 84 percent increase over fiscal year 2022. We have focused our efforts on recognizing and preventing harmful behaviors in the first instance, and ensuring that leaders at every level have the training, skills, and tools available to ensure offenders are held appropriately accountable.

I appreciate the work of this Committee to include new tools within the fiscal year 2022 National Defense Authorization Act (NDAA) to deter misconduct and prosecute sexual assault, domestic violence, and other covered offenses. The Department of Navy is moving forward to create Offices of Special Trial Counsel, as required by the NDAA, and we welcome the meaningful change these offices will help enable. Trained and independent military prosecutors will capably oversee sensitive investigations of covered offenses and independently determine, based on the evidence, which cases are referred to trial by court-martial. They will be led by a senior judge advocate who will report directly to me.

DON leaders have circulated the "Watch List" throughout the force. This prevention tool details warning signs that increase the risk of sexual assault within a command, including sexual harassment, gender discrimination, lack of responsibility and intervention, workplace hostility, and lack of respect and unit cohesion. In conjunction with this training tool, we encourage leaders at every level to speak up and take action when they see these or other behaviors on the continuum of harm.

This fiscal year, we will begin hiring an integrated prevention workforce across the force to redouble our focus on early identification and prevention of harmful and destructive behaviors. I have also directed the DON to expedite the implementation of five recommendations of the Secretary of Defense's Independent Review Commission on Sexual Assault in the Military. These five accelerated recommendations focus on developing, educating, and promoting leaders dedicated to fostering command climates in which all individuals are treated with dignity and respect.

These changes will improve our ability to prevent sexual assault and sexual harassment, hold offenders accountable, and create a safer, stronger and more inclusive

Navy-Marine Corps team. I am releasing the DON “No Wrong Door” policy, ensuring victims receive professional care to the fullest extent practicable, regardless of where they initially seek support. This new policy will also serve to supplement existing efforts to further professionalize our workforce, prioritize the prevention of sexual harassment and eliminate collateral duty personnel with full time personnel. This “No Wrong Door” policy also recognizes that sexual assault, sexual harassment, and domestic abuse exist on a continuum of harm. The DON’s implementation efforts, led by the Assistant Secretary of the Navy for Manpower and Reserve Affairs, are already underway.

Take Care of Our People

The DON is committed to ensuring the health, safety, and well-being for all members within our military community. 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 to ensure our policies respect the needs of single parent and dual service families.

The DON offers a variety of mental health and counseling resources, encouraging positive help-seeking behaviors and eliminating the stigma around mental healthcare among service members. The importance of this issue and the continued emphasis on suicide prevention has been highlighted in recent weeks as we mourn the loss of young Sailors aboard *USS George Washington*. We continue to emphasize suicide prevention efforts, breaking the silence, and increasing visibility and access to critical resources.

Through a combination of non-monetary, quality of life, and customer service programs, we are responding to the needs of our warfighters and their families. For example, this budget increases Child and Youth Services funding by 38 percent, including \$56 million for a new Child Development Center at Point Loma, childcare data management system upgrades, and full funding for the Fee Assistance Program.

PB23 also includes significant funding for construction and oversight of family housing, including \$249 million for new family housing at Joint Region Marianas—Andersen Air Force Base, Guam, and \$75 million for construction improvements to family housing in Yokosuka, Japan. PB23 also includes the funding necessary for DON to sustain our increased oversight as necessary to ensure Military Housing Privatization Initiative (MHPI) projects on Navy and Marine Corps bases provide quality housing and a positive living experience for Sailors, Marines and their families.

As demonstrated by recent quality issues at barracks buildings in Naval Support Activity (NSA) Bethesda in Maryland, the DON must also ensure that our unaccompanied housing is properly maintained and consistent with modern living standards. I have recently visited the barracks at NSA Bethesda to confirm that these quality issues have been appropriately addressed, and I am committed to improving our unaccompanied housing facilities and preventing future problems. PB23 also includes significant investment in unaccompanied housing, including \$101 million for phase II of a Navy barracks project at Kaneohe Bay, Hawaii, and \$101 million for a Marine Corps Barracks Complex at Kadena, Japan.

Finally, I fully support the Secretary of Defense’s decision to defuel and permanently close the Red Hill facility, and I take very seriously the DON’s responsibility to make things right after fuel releases contaminated the drinking water system at Joint Base Pearl Harbor-Hickam. I will continue to work closely with our Federal interagency partners and the Hawaii Department of Health to protect the environment and support the military families and residents who have been impacted by fuel-contaminated water on Oahu, Hawaii.

COVID-19

With consistent personal and fleet discipline, vaccine distribution, and refinement of best practices, we have ensured a robust, proactive, and coordinated COVID-19 response across the DON. I particularly want to note the contributions of the 265,000 civilian employees in the DON, whose faithful service throughout the pandemic enabled mission accomplishment.

Guided by Health Protection Condition (HPCON) determinations and mission requirements, we continue to implement flexibilities that help minimize risk to our people and their families while remaining responsive to an evolving national security landscape. We are well positioned to emerge stronger than ever, as the pandemic has forced us to rethink and refine our recruitment, training, and personnel support, as well as shipyard operations, deployment schedules, and headquarters

management, with efficiencies and technology application that will benefit our combat readiness long after COVID-19 is in our wake.

STRENGTHEN STRATEGIC PARTNERSHIPS

Our partnerships provide an unmatched and irreplaceable advantage over every potential adversary. From our fellow Joint Force and government personnel, to our vital industrial base, to our global network of allies and partners, we will sustain, expand, and strengthen strategic partnerships by building seamless integration, communication, and collaboration with each of our partners at the same time that we cultivate new relationships.

Joint Force and Government

Across both services and throughout the DON, PB23 will invest in the readiness of 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.

But our fully integrated naval force is only part of the formidable Joint Force team that stands united in the protection of the American people. Collaboration between Departments, from the Pentagon to the operational front line unit, is critical to the defense of the United States. We are constantly seeking opportunities to maximize the combined efficiency and effectiveness of our force in cooperation with the Army, Air Force, and Space Force. For example, we continue to work with our fellow services on critical advanced research programs including hypersonic weapons. And worldwide, the Joint Strike Fighter program is yielding unprecedented reach and agility for the entire Joint Force.

We are also proud to serve alongside our fellow sea service, the United States Coast Guard. Building on Advantage at Sea, our Tri Service Maritime Strategy, we are continually seeking ways to leverage our combined capabilities, from ice breakers to coastal facilities to embarked personnel. For example, last year *USS Tulsa* and *USS Charleston* conducted missions with embarked Coast Guard detachments as part of the Oceania Maritime Security Initiative. This joint effort improves our maritime domain awareness in the Indo-Pacific to reduce illicit fishing, combat transnational crimes, and enhance regional security. PB23 will build on cooperative efforts like this to safeguard every part of the maritime domain.

We continue to work with the United States Strategic Command, the National Security Council and the United States Air Force to support the Strategic Deterrent Forces. We work closely with our Joint Force partners to ensure DON is fully integrated into the national command authority, and ensure the Navy's sea based strategic deterrent is ready at a moment's notice to defend our Nation. We will continue to work closely with the Department of Energy and our National Laboratories, to ensure Navy is forward leaning with modernization and sustainment as we continue to invest in the future deterrent through programs like *Columbia* and TACAMO.

Community Partnerships

Across the United States and around the world, Navy and Marines Corps installations partner with the local communities that host us to pursue joint opportunities, collaborate on shared challenges and develop regional plans that enable military readiness while supporting community priorities.

Installation commanding officers are successfully using Intergovernmental Support Agreements to partner with a state or local governments to obtain installation support services, often at a considerable cost savings. Initiatives like the Defense Community Infrastructure Pilot program provide construction funds to states and communities to address deficiencies in community infrastructure that support military installations. And under the Readiness and Environmental Protection Integration (REPI) program, the DON is partnering with local governments and organizations and combining resources to enhance and preserve mission readiness and achieve mutually beneficial, sustainable communities near our installations and ranges.

Industry Partnerships

From the skilled shipwrights who transformed live southern oak into *USS Constitution's* "iron sides", to the over 2,000 suppliers and contractors contributing to the Ford class today, our industrial base has fueled the strength of our Navy and Marine Corps. The innovative platforms and technologies that are so essential to the Joint Warfighting Concept would not exist without the private sector's involvement.

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. 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.

In order to ensure a strong and stable industrial base to meet our national security requirements, we must be clear and transparent as to our future needs and resource constraints, and fight requirements creep whenever possible. In turn, our partners must be transparent with us as well, managing costs, strengthening the workforce, and delivering platforms on-time and on-budget. Together, we must be good stewards of the taxpayer's money.

PB23 will strengthen our industrial base through targeted investments in supplier development, shipbuilder infrastructure, strategic outsourcing, and workforce development. This budget adds \$543 million for submarine industrial base investment and funds for a predictable build plan of two SSNs and two DDGs per year. It maintains a public shipyard workforce at 37,000 full time equivalent workers, and funds 45 private ship maintenance availabilities.

I have held multiple town hall meetings with industry partners to hear about their challenges when doing business with the DON, and seeking greater transparency and cooperation to pursue greater efficiency, innovation and teamwork. I have also made it clear that I expect DON suppliers and contractors to meet their small business commitments, and expand diversity, equity and inclusion efforts in their hiring and subcontracting, in order to expand the innovative private sector universe available to the DON to benefit the taxpayer and the warfighter.

Allies and Partners

As strategic competitors pursue confrontation and coercion, we respond with alliances and partnerships, standing alongside a global community of nations in defense of our common values. I have witnessed the bonds between our Sailors and Marines working alongside their counterparts in Japan, the Republic of Korea, and elsewhere throughout the Indo-Pacific. I also saw the power of allied cooperation on recent trips to Europe, as I spoke with Marines preparing for Exercise COLD RESPONSE in Norway, and Sailors aboard *USS Harry S. Truman* carrying out tri-carrier maritime and air policing operations in the Mediterranean and North Aegean Sea alongside the Italian carrier *Cavour* and the French carrier *Charles DeGaulle*.

These activities demonstrate the strength of our integrated deterrence, and the agility of our combined forces. Last year, *USS Sullivans* transited the Mediterranean, the Indian Ocean, and the Philippine Sea as part of the *HMS Queen Elizabeth* Carrier Strike Group, providing air defense and integrated operations alongside Royal Navy and Dutch destroyers, while also working with many allies and partners including Australia, France, Israel, Italy, New Zealand, Japan, Malaysia, Singapore, and more.

HMS Queen Elizabeth Carrier Strike Group also featured United States Marine Fighter Attack Squadron 211 operating aboard the Royal Navy's flagship carrier. For 7 months, the "Wake Island Avengers" operated ten F-35B Lightnings alongside eight Royal Air Force F-35Bs from the decks of *HMS Queen Elizabeth*. Our Marine aviators have also operated the F-35B from the decks of Italy's *Cavour* and Japan's *Izumo*, proving the capability of this aircraft for true allied deck hopping, when paired with United States amphibious ships for aircraft maintenance and sustainment.

PB23 will strengthen global alliances and partnerships with funding for joint operations and exercises around the world, including CARAT, MALABAR, and BALIKITAN in the Indo-Pacific, NATO operations in the Mediterranean, and exercises in our own hemisphere like UNITAS. We will continue to strengthen military-to-military relationships with existing allies, leverage specialized allied experience in regional operations, and expand and deepen our partnerships with like-minded nations around the world.

We will continue to build opportunities for Sailors, Marines, and Civilians to train, learn, and operate side-by side with their counterparts in partner and allied forces, and operationally integrate with our allies and partners through shared warfighting concepts, continually campaigning forward to deter adversaries and protect the rules based international order.

Our Sailors, Marines and civilian personnel are warrior-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

The most important partnership for our Navy and Marine Corps Team is with the American people. They entrust us with their hard earned tax dollars, as well as the lives and wellbeing of their sons and daughters, mothers and fathers, husbands and wives who serve in our ranks. We will not fail in our sacred responsibility to the American people, and all who serve in the cloth of our Nation.

On behalf of each of the brave Sailors, Marines, Civilians, and the families that serve at their side, I once again thank the leadership and membership of this Committee for your oversight, interest, and ongoing commitment 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.

Senator TESTER. Thank you, Secretary Del Toro. Admiral Gilday.

STATEMENT OF ADMIRAL MICHAEL M. GILDAY, CHIEF OF NAVAL OPERATIONS, UNITED STATES NAVY

Admiral GILDAY. Chairman Tester, Vice Chairman Shelby, distinguished members of the committee, good morning and thank you for the opportunity to appear before you today with Secretary Del Toro and General Berger. Senator Shelby, I would just like to thank you up front for your service in the United States Senate, and for your Herculean efforts, much of it behind the scenes, to support the United States military and specifically our Navy and Marine Corps.

For nearly eight decades, America's maritime superiority has guaranteed peace and prosperity across the world's oceans and has played a unique and predominant role in protecting our Nation's most vital national interests. Maintaining maritime superiority is fundamental to implementing our national defense strategy.

Global competition is heating up, the pace of innovation is accelerating, and the environment that our naval forces are operating in every day is growing more transparent, more lethal, and more contested. Everybody in this room understands those trends, particularly China's massive investment in highly capable forces designed to deny our access to the seas.

Our Navy's role has never been more consequential or more expansive. Right now, today, naval forces are postured forward, defending against simultaneous threats in every theater. As the Russian invasion of Ukraine tragically rages on, the Truman Strike Group and Kearsarge Amphibious Ready Group are sailing alongside our NATO forces on point, demonstrating resolve and deterring escalation.

Meanwhile, on the other side of the world, the USS Tripoli is on her maiden deployment, testing assault carrier concepts with her embarked F-35s and patrolling the Western Pacific alongside the USS Abraham Lincoln and the Ronald Reagan Carrier Strike Group.

These flexible and resilient options enabled by our Navy Marine Corps team are undoubtedly the first line of deterrence against Chinese and Russian forces and can provide quick response options against any threats against our national interests. The global, consistent demand for naval assets serves as an unmistakable message, America needs a combat credible naval force that can protect our interests in peace and prevail in war, not just today but tomorrow and for the long term competition that lies ahead.

Our budget submission reflects that imperative. It fully funds the Columbia Class submarine to ensure continuity for our Nation's

most survivable strategic deterrent. It keeps our fighting—it keeps our fleet ready to fight tonight. It funds maintenance accounts. It fills magazines with weapons. It puts spare parts in storerooms. And it gives our sailors the steaming days and the flying hours that they need to hone their skills.

It modernizes our fleet by investing in weapons with increased range and speed, as the Chairman indicated, is an imperative. And it integrates systems to improve fleet survivability with a resilient, cyber secure network infrastructure.

And it invests in affordable, capable capacity, building towards the goal of a larger distributed hybrid fleet of manned and unmanned, and taking into account the insights we are gaining on a monthly basis from our fleet battle problems and exercises like large scale exercise 2021 and the international maritime exercise that we recently completed in the Middle East.

These exercises and many others are helping us refine our warfighting concepts. They are helping us experiment with unmanned and cutting edge systems at the speed of innovation and grow the fighting power of our Navy Marine Corps team across all domains.

The need to field a ready fleet today as we simultaneously modernize for the future has forced us to make difficult decisions, including the decommissioning of platforms that do not bring the needed lethality to a high end fight in contested areas. While we build capacity at the—while building capacity at the expense of readiness and modernization can sound like an attractive option, it is not one that I endorse.

We have been there before, and we have seen the tragic results. I refuse to repeat it again. We cannot field a fleet larger than one that we can sustain. And at today's fiscal levels, quantity simply cannot substitute for quality, especially as our adversaries are building more advanced war fighting systems.

Failing to modernize to meet those threats would erode America's maritime superiority at a time when command of the seas will decide the global strategic balance of power for the rest of this century. The stakes in this competition are extremely high and serious, which is why your sailors, active and reserve, uniform and civilian are committed to strengthening our naval power every single day.

Thank you again for inviting me to testify, and I am grateful for the committee's support for our Navy and Marine Corps team. I look forward to answering your questions.

[The statement follows:]

PREPARED STATEMENT OF ADMIRAL MICHAEL M. GILDAY

Chairman Tester, Vice Chairman Shelby, 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 authorized by Congress these last several years, we increased our readiness, modernized our capabilities, and kept our fleet deployed forward in the most critical regions of strategic competition.

Since the founding of our Republic, the U.S. Navy has played a critical part in defending and advancing national policy by delivering sea power far from American shores. Our Navy's role—and consequently, its composition—has steadily evolved to ensure American security and defend our interests around the world. From our

humble beginnings as a small maritime force, fending off pirates and protecting American shipping, we have become a globally postured fleet that underwrites world stability by deterring war, upholding international law, and assuring access to the maritime domain.

Today, our Navy's mission has never been more consequential or expansive. We now face potential adversaries who are attempting to undermine the rules-based international order, aggressively modernizing their militaries, and fielding offensive warfighting capabilities at unprecedented speed and scale.

This is a critical decade. Peaceful, free, and open oceans are vital to America's and our allies' security and prosperity in the 21st century. As global challengers rise, we must strengthen America's naval power to protect and defend our national interests.

THE MARITIME CHALLENGE TO U.S. NATIONAL SECURITY

As a maritime nation, America's maritime superiority is a global imperative. Two expansive oceans connect us to our allies and trading partners. For all of us, our way of life depends upon free, open, and secure maritime areas. Sea control and power projection are essential to U.S. national security and long-term economic health. The People's Republic of China (PRC), our pacing threat, clearly recognizes this and has publically stated that it intends to grow its sphere of influence by challenging the United States' military access to the western Pacific.

Over the past two decades, the PRC has built a comprehensive sea-denial, anti-access system of sophisticated sensors and long-range precision weapons. Backed by a robust industrial base and the largest shipbuilding infrastructure in the world, the PRC has extensively modernized its military and tripled the size of the People's Liberation Army-Navy (PLAN). It is also building next-generation strategic missile submarines, erecting hundreds of new missile silos, and growing its cyber and space capabilities.

Under the cover of this anti-access umbrella, the PRC has embraced the use of "gray zone" activities to turn incremental gains into long-term strategic advantages. Using a multi-layered fleet of naval ships, maritime militia, and coast guard, the PRC is undermining international norms by staking illegal maritime claims, militarizing geographic features in the South and East China Seas, and intimidating its neighbors regarding offshore resources. Additionally, the PRC is extending its global reach with its Belt and Road Initiative—leveraging predatory lending practices, aggressive mercantilism backed, and hard military power—to access critical maritime terrain, ports, and waterways.

Additional threats persist around the globe. Russia remains an acute threat, seeking to fracture NATO and reestablish its sphere of influence using a combination of diplomatic, economic, and military force. Russia's unprovoked invasion of Ukraine has shattered the post-Cold War peace in Europe. The support of like-minded nations for the brave citizens of Ukraine has reminded would-be aggressors of the global intensity of purpose to uphold a nation's inherent right to freedom. As the struggle continues, Russia is risking broader escalation with threats of nuclear attack, deployments of missile-carrying submarines close to American and allied shores, and sophisticated cyber-attacks. North Korea continues to develop both nuclear and missile programs; Iran's missile program is also concerning. All the while, violent extremist organizations remain persistent threats.

Other serious transboundary challenges, including climate change and emerging pathogens, are also increasing the complexity of the security environment. Strategic competitors and non-state actors are gaining access to cutting-edge commercial technologies and wielding them to disrupt America's interests and national security. Artificial intelligence, ubiquitous sensors, and long-range precision weapons are making contested spaces more transparent and more lethal, and these systems are proliferating globally at a rapid pace.

These are several of the many considerations shaping the future strategic environment. When examined together, they illustrate the complexity of 21st century security challenges, particularly in the maritime domain. In a rapidly changing world, a formidable naval force is crucial to effectively implement the 2022 National Defense Strategy (NDS) and protect American security and prosperity. The Nation cannot afford to have its Navy to pull back and cede influence at a time of rising tensions and challenges to freedom of the seas. Nor can it afford our fleet to lose its warfighting advantage.

MEETING THE CHALLENGE

Looking to the future, the U.S. Navy must continue to deploy our fleets forward to meet an unpredictable strategic environment. We must also modernize to field

the most capable force possible against evolving threats. America needs a Navy capable of prevailing over any naval adversary to protect and sustain our interests worldwide and deter crises that could lead to war.

Together with the U.S. Marine Corps and Coast Guard, we must deliver integrated all-domain naval power to the Joint Force: the lethal, resilient, sustainable, survivable, agile, and responsive fleet that the NDS requires. Specifically, in support of NDS and Department of Defense requirements:

- The Navy must defend the Homeland with an assured nuclear deterrent from beneath the sea to deter all forms of strategic attack.
- The Navy must be capable of controlling the seas to deter aggression against our allies and partners, and project power ashore as an integral part of the Joint Force.
- The Navy must be able to distribute and mass effects, integrate with the Joint Force across all domains, and defeat adversary forces in conflict.

To prevail in competition, crisis, and conflict, our naval forces must be combat-credible—measured by our ability to deliver lethal effects in contested and persistently surveilled battlespaces. We will deliver these forces by aligning our planning, resources, and investments with national policy end-state objectives:

Strengthening Integrated Deterrence. Integrated deterrence is backstopped by a safe, secure and effect nuclear deterrent. The Navy operates and maintains the most survivable leg of the nation's nuclear triad. Our strategic submarines represent approximately 70 percent of America's deployed nuclear arsenal. Synchronized with the retirement of *Ohio-class* ballistic missile submarines, we must deliver *Columbia-class* submarines on time, as we continue to modernize our nuclear command, control, and communications systems and supporting infrastructure. These efforts are essential to ensure the United States can deter nuclear coercion or nuclear employment in any scenario.

Deterrence also relies on forward-deployed, combat-credible conventional forces to control the seas and project power. These roles are central to integrated deterrence now and in the future. Employing a host of kinetic and non-kinetic effects launched from platforms on, under, and above the sea, conventional naval forces deploy globally to deter military aggression, support diplomacy, and give national leaders options to protect American interests across the spectrum of conflict. Should conflict arise, the Navy is consistently deployed forward to respond decisively, supporting the Joint Force to end hostilities on favorable U.S. terms.

The Navy also provides the first physical line of U.S. Homeland Defense, preventing potential adversaries from using the oceans to directly threaten America or our allies and partners. No other element of national power can fulfill this role across every domain, from the seabed to space.

Campaigning Forward. Naval forces across the globe provide the United States strategic advantages in power projection, diplomacy, influence, and flexibility, without over reliance on access to overseas land bases. Our enduring, forward posture in support of the Joint Force guarantees our Nation the ability to respond to crisis, blunt gray-zone incrementalism, and preserve a stable and secure global maritime order. The Navy's global maneuverability supports diplomacy, reassures our allies, and generates favorable influence in key regions.

Our alliances and partnerships remain our key strategic advantage. They recognize U.S. naval forces as their on-scene partner for building combined maritime strength. Every day, the Navy operates forward alongside allies and partners through combined operations, theater security cooperation, and capacity-building initiatives. These activities strengthen interoperability, increase information sharing, and build capacity for resilient, integrated logistics. Working together—particularly with interoperable, critical-capability allies—we strengthen our ability to prevail in conflict and further bolster integrated deterrence by demonstrating a united front against potential adversaries.

In September of last year, President Biden announced a trilateral security agreement between Australia, the United Kingdom, and the United States (known as AUKUS). The announcement launched an intensive 18-month consultation period among the three governments to seek an optimal pathway for delivering a conventionally-armed, nuclear-powered submarine capability to Australia at the earliest achievable date. The Navy is playing a key leadership role in developing this plan to ensure that our Nation's preeminent expertise is applied to the nuclear-powered submarine initiative. We are focused on ensuring Australia understands the full scope of capabilities necessary to design, build, operate, and maintain a nuclear navy. AUKUS represents a tremendous strategic opportunity for the United States to expand our cooperation and collaboration with two of our closest allies, and we are on pace to respond to the President's tasking.

The Navy is also uniquely equipped to contest gray zone incrementalism by our adversaries. Gray zone aggression thrives with non-attribution. The best way to oppose these activities is to deny our adversaries anonymity with persistent domain awareness, the effective leveraging of intelligence, and the agile application of sea power. Together with whole-of-government partners, the Navy exposes malign behavior, imposes reputational costs, diminishes the effectiveness of propaganda, and galvanizes international resistance.

Building Enduring Warfighting Advantages. Based on the PRC's current and long-term security challenge, the Navy must set a stable and sustainable trajectory to a larger and more capable force now. To ensure we remain adaptable and relevant, our future force design relies on six overarching imperatives to sustain our warfighting advantage, expand our options, and constrain those of our adversaries:

Expand Distance. Long-range precision fires across all domains—and platforms with greater reach—enable naval forces to strike hostile targets while increasing our survivability.

Leverage Deception. Deceptive measures—including stealth, concealment and maneuver, emissions control, and electronic warfare—degrade enemy surveillance and increase adversary uncertainty, enabling naval forces to operate effectively in contested seas.

Harden Defense. Integrating directed energy with hard-kill and soft-kill defensive systems disrupts attacks and keeps naval forces survivable when targeted by adversaries.

Increase Distribution. Distributing naval forces geographically and in all domains enables them to threaten an adversary from multiple attack axes. Smaller, lethal, and less costly platforms—including manned, unmanned, and optionally-manned—further complicate threat targeting, generate confusion, and pose dilemmas for our adversaries.

Ensure Delivery. Resilient logistics connecting the foundry to the fleet—enabled by secure communications and information technology—refuel, rearm, resupply, repair, and revive distributed naval forces down to the last tactical mile.

Generate Decision Advantage. Naval forces will out-sense, out-decide, and out-fight any adversary by accelerating our decision cycles with secure, survivable, and resilient networks, accurate data, and artificial intelligence. Connecting sensors, weapons, and decision-makers across all domains enables naval forces to mass firepower and influence without massing forces.

These six force design imperatives enable Distributed Maritime Operations (DMO), the Navy's foundational operating concept of our team-centric Fleet construct. Today's priority investments are delivering on these imperatives. For example:

- Investments in hypersonic weapons, space-based capabilities, unmanned tanking, and long-range precision fires deliver capabilities for effects at an expanded distance.
- Investments in undersea platforms, weapons, and systems, next-generation aircraft and surface platforms, cyber capabilities, counter-surveillance, and integrated weapons systems deliver increased deception and defense.
- Investments in smaller, lethal platforms, autonomous systems in all domains, artificial intelligence, resilient logistics, and integrated combat systems and networks enable a more distributed fleet, the delivery to sustain it, and expand our decision advantage against peer adversaries.

ACCELERATING AMERICA'S ADVANTAGE AT SEA

The Navy is implementing the 2022 NDS, preparing for the challenges ahead of us, and accelerating America's enduring advantage at sea. Within the scope of the President's fiscal year 2023 Budget Request (PB-23), we are delivering a combat-credible Navy designed to deter conflict and help win our Nation's wars as we maintain a global posture to assure our prosperity. To do this, we remain focused on four priorities: Readiness, Capabilities, Capacity, and our Sailors.

These four priorities are especially relevant because of today's fiscal environment. We face the simultaneous task of recapitalizing our strategic nuclear deterrent, our century-old dry dock facilities, and our strategic sealift capacity. These programs are all critical to our national defense. Meanwhile, Navy manpower, operations, and maintenance costs continue to grow above the rate of inflation. This means we must carefully invest in capabilities and capacity that offer the most significant payoff and warfighting value for strategic competition.

Based on these priorities, I have consistently said that the Navy's size—our capacity—ultimately will be dictated by the budget's top line. We will not field a fleet larger than we can sustain. We also will not grow the Navy at the expense of build-

ing the Columbia—our top acquisition priority. Nor will we increase capacity by failing to modernize and sacrificing our combat credibility.

The U.S. Navy cannot outpace an increasingly capable PRC by retaining platforms that are decreasingly relevant in modern naval warfare. While some of these platforms may have day-to-day utility in permissive environments, the Navy's first obligation is to deliver a ready, combat-credible fleet with the funding Congress appropriates. Simply maintaining the capabilities of today's fleet will be insufficient to both preserve our long-term interests and protect America. Quantity is not synonymous with quality. We must modernize to maintain our maritime edge.

Therefore, our focus is on delivering capable capacity. America needs a modern strategic deterrent; greater numbers of undersea capabilities; more distributable surface combatants; a host of manned, unmanned, and optionally-manned platforms—under, on, and above the seas; and a resilient logistics enterprise to sustain our distributed naval force. Based on past and ongoing force structure analysis, it is my best military advice that the size of the Navy grows to a 500-ship hybrid fleet by 2045. Integrated with the Joint Force and interoperable with our allies and partners, this all-domain, hybrid fleet will ensure our maritime superiority.

Our Navigation Plan Implementation Framework supports these priorities, implementing lines of effort to deliver measurable outcomes, driving a new Force Design process to improve our agility, and energizing a fleet-wide movement to strengthen our learning culture. Our Navy is addressing the challenges we face with clarity, determination, and urgency. We made significant progress over the past 2 years, and we are continuing to press forward to deliver the readiness, the capabilities, the platforms, and the people necessary to protect the American people and our interests around the world.

READINESS

To accelerate America's advantage at sea, we must prioritize readiness to keep combat-credible forces forward to deter conflict and protect the free and open system underpinning American security and prosperity. Our competitors are increasing their naval power every day, and their malign behavior and growing presence worldwide places an enormous demand on our forces. Moreover, the Russian invasion of Ukraine and ensuing global instability have provided a stark reminder of why the Navy must be ready to deploy globally in defense of U.S. interests. In fiscal year 21, the Navy-Marine Corps team executed more than 22,000 steaming days and more than one million flying hours. Because naval forces remain in high demand, PB-23 emphasizes critical aspects of our readiness.

The Navy continues to make readiness gains with increased shipboard manning, better maintenance performance, increased weapon inventories, more training for our crews, and enhanced spare parts availability. Sustained funding and systematic reforms throughout the fleet have enabled those readiness gains. Despite this momentum, we are not satisfied. Our focus remains on continuous improvement.

Deploying combat-credible forces starts with performing high-quality maintenance on time and in full. To this end, we are using data-driven reforms such as Performance-to-Plan (P2P), the Naval Sustainment System (NSS), and other initiatives to improve maintenance processes, increase operational availability, and save taxpayer dollars. We continue to see positive results with these methods, especially in our aviation community. By leveraging the power of the aviation Maintenance Operations Center (MOC), we sustained a mission-capable rate of 80 percent for our F/A-18E/F Super Hornets across three consecutive fiscal years. Additionally, we have seen five more aircraft types achieve this high mission-capable rate as we have incorporated them into the MOC construct over the last 18 months. With more aircraft available, our aircrews are more ready to dominate the skies than at any point over the last decade.

We continue to take a similar, data-driven approach to improve surface ship maintenance, and we see positive results across the fleet. Since fiscal year 2020, P2P-driven improvements—such as the goal of awarding contracts 120 days before the start of a maintenance availability, level loading ports through better prediction of workload, better availability planning, and improved long-lead-time material acquisition—have generated a 58 percent decrease in days of maintenance delay. PB-23 prioritizes private sector ship depot maintenance in line with enacted fiscal year 2022 levels to provide industry with a stable and predictable demand signal. The Other Procurement, Navy (OPN) pilot, is seeing positive early results, including more efficient use of contracted ship maintenance throughout the entirety of the fiscal year, improved on-time delivery of long-lead time materials, and reduced impact of growth and new work. We are grateful for the support from Congress in continuing this budgetary authority.

Despite COVID-19, public shipyards have also seen improvements over the last 2 years, with fewer maintenance delay days and increased on-time completion percentages. However, submarine maintenance remains a pressing challenge. We are working hard to reduce submarine idle time at public shipyards by conducting thorough, early material condition assessments to reduce Days of Maintenance Delay and maximize operational availability. Through the Performance to Plan-Shipyards (P2P-SY) and Naval Sustainment System-Shipyards (NSS-SY) efforts, we continue to focus on achieving on-time maintenance availability completion. We are looking for opportunities to balance public and private sector workload and maintain a healthy industrial base for submarine maintenance and new construction. In addition, we are creating a Long Range (15-year) SSN Depot Maintenance Plan to improve workload forecasting in both the public and private sectors for fiscal year 2023 and beyond.

Sustaining our platforms also requires critical investments in our infrastructure ashore. Our worldwide constellation of bases must be capable of sustaining and supporting our fleet at sea, including our public shipyards and aviation depots. The average age of U.S. naval shipyard facilities and related infrastructure is 61 years, while the average dry dock age is approaching 100 years. Our Shipyard Infrastructure Optimization Program (SIOP) provides a strategic roadmap for necessary investments in dry docks, capital equipment, and layout optimization of these vital national assets. PB-23 prioritizes SIOP, investing over \$1.7B in fiscal year 2023, including funding for three major shipyard projects. Additionally, the Fleet Readiness Centers Infrastructure Modernization and Optimization Plan (FIOP) will ensure our industrial facilities are resilient and optimized to maintain both legacy and next-generation aircraft, and their associated weapon systems.

Our commitment to improving readiness also includes our information forces. We have established a dedicated team to improve our ability to generate and deploy forces for cyberspace operations. We are learning from other highly technical warfighting domains such as aviation and nuclear power to keep pace with cyber-force growth. This effort looks at all aspects of our readiness to include recruiting, training, assignment, and retention. This comprehensive review sets a course for the Navy to meet and sustain United States Cyber Command's demand.

Readiness also extends to the training facilities that generate warfighting advantages. The modernization and expansion of the Fallon Range Training Complex (FRTC) is critical. As the capabilities and ranges of our platforms have grown, our training ranges have not. The FRTC is now far too small to allow carrier-based aircraft to adequately train for high-end conflict with precision-guided weapons, and it is too small for SEALs to conduct mobility maneuver training in a realistic tactical environment. Our Sailors need the most realistic training possible if they are going to defeat a strategic competitor. FRTC modernization will ensure that future generations of warfighters remain the most effective in the world. We understand the challenges associated with this project, and we are deeply committed to listening and working with every stakeholder towards a mutually acceptable modernization plan.

CAPABILITIES

To accelerate America's advantage at sea, we must modernize our capabilities to credibly deter war and, if necessary, win in conflict. Disruptive technologies are changing the potential applications and impacts of military activities from the seafloor to space. Artificial intelligence, machine learning, autonomy, quantum computing, and new communications technology are transforming the character of future warfare. Modern naval warfare demands integrated systems, resilient kill chains, better terminal defense, and a robust logistical footprint to support a more distributed force. Transitioning to these capabilities will increase our deterrence posture by expanding our ability to distribute our forces and mass effects.

As we build and put to sea a force able to deter and, if necessary, defeat a strategic competitor, we must prioritize capabilities that support Distributed Maritime Operations, or DMO—our previously mentioned foundational operating concept. Kinetic and non-kinetic effects must be distributed geographically—on, under, and above the seas—as well as in the information environment, the cyber domain, the electromagnetic spectrum, and in space. To operate effectively, platforms, sensors, and weapons must all operate and work together as one cohesive, integrated team. The teams are centered on our Numbered Fleet construct—our cross-domain contribution to the Joint Force. The Navy must empower these teams through secure, survivable, resilient, and common networks. Project Overmatch will deliver the Naval Operational Architecture (NOA), the Navy's contribution to Joint All-Domain Command and Control (JADC2) making major improvements in both resilience and

capability to plan, coordinate and execute missions as a critical member of the Joint Force. PB-23 includes \$195 million in fiscal year 2023 and \$898 million across the Future Years Defense Program (FYDP) for core activities of Project Overmatch, which is an increase of \$122 million in fiscal year 2023. This increase represents a deliberate and executable investment to accelerate the delivery of NOA Increment 1 to carrier strike groups by next year.

Strategic competitors are continuing to develop sophisticated intelligence, surveillance, and reconnaissance capabilities that complicate our operations globally. Our PB-23 investments accelerate and enhance core Counter-Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, Reconnaissance, and Targeting (C-C5ISR) activities that generate warfighting advantage by degrading adversaries' understanding of the operational environment. In support of both offensive and defensive DMO, these investments integrate three Counter C5ISR&T tenets required to sustain operations in a contested environment with acceptable risk: (1) understand the risk of detection posed by adversary capabilities; (2) orchestrate actions to reduce naval units' targetability; (3) synchronize delivery of kinetic and non-kinetic effects.

As an example, to pace the growing air and missile defense threat set, the Navy developed and approved a strategy over the past budget cycle to deliver enhanced radar sensitivity and electronic warfare capabilities to our DDG Flt IIA ships. This strategy is called DDG Mod "2.0" and includes the back-fit installation of the Shipboard Electronic Warfare Improvement Plan (SEWIP) Block 3, adding enhanced capabilities to current SEWIP Block 2; a 24 Radar Module Assembly SPY-6 radar to replace SPY-1; and Aegis Baseline 10.

PB-23 also includes investments in developing and demonstrating conventional sea-based hypersonic strike weapon systems. The Navy Conventional Prompt Strike (CPS) Program Office and Army Hypersonic Project Office are using a common missile design and joint test opportunities to field non-nuclear hypersonic weapon systems. In 2021, we conducted two First Stage and one Second Stage Solid Rocket Motor static fires, marking the first successful tests of the newly developed missile. The CPS Program also completed an eight-shot Solid Slug Launch Test Campaign, which provided initial validation of the cold-gas launch approach for use on Navy platforms. Stable funding at the requested level will keep this critical capability on track to field on *Zumwalt-Class* DDGs followed by *Virginia-class* SSNs equipped with the Block V Virginia Payload Module.

We are incorporating other long-range, highly capable weapons into our magazines to improve lethality across domains. PB-23 sustains the production of the Blk-I/IA SM-6 and the modernized Blk-V Tomahawk Missile, and it funds the transition of the Maritime Strike Tomahawk to a Program of Record. Additionally, we are arming our submarines with better MK-48 Heavyweight Torpedoes and pursuing more advanced variants. We are also improving the effectiveness of our fighter aircraft, extending their all-domain reach with the Advanced Anti-radiation Guided Missile, AIM-120 Advanced Medium-Range Air-to-Air Missile, and Long-Range Anti-Ship Missile. Altogether, the weapons procurement in PB-23 is our best capability insurance against near-term threat escalation while keeping us postured for the future.

In parallel, we are maturing multiple directed energy projects to improve overall fleet survivability in contested environments. We have successfully deployed three directed energy weapons systems in the 7th and 5th Fleets to support Counter-ISRT and Counter-Unmanned Aerial Vehicle missions. To reach our goal of "bottomless" magazines, we will need continued advancements and investments in directed energy, scaling and platforms with enough space, weight, power, and cooling (SWAP-C). PB-23 funds \$262 million across the FYDP to install the eighth Optical Dazzling Interdictor and provides continued funding for Solid State Laser-Technology Maturation, High Energy Laser with Integrated Optical dazzler and Surveillance (HELIOS), and the High Energy Laser Counter Anti-Ship Cruise Missile Project (HELCA). Our future Navy surface combatants, such as FFG-62 and DDG(X), include SWAP-C reservations to accommodate such systems. We are taking a truly holistic view of this emerging portfolio to carefully incorporate directed energy into the fleet in an evolutionary way.

CAPACITY

To accelerate America's advantage at sea, the Navy will build a combat-credible, hybrid fleet, bolstered by mature, cost-effective unmanned technologies and operational concepts. A new platform can take up to a decade to go through the planning process, receive authorization from Congress, and complete construction before joining the fleet. To keep up with the accelerating pace of innovation, the Navy must

build future platforms with modernization in mind—hardware upgradeable and software updateable at the speed of innovation.

Our number one acquisition priority remains the on-time delivery of the *Columbia-class* ballistic missile submarine, which constitutes our Nation's most secure and reliable strategic nuclear deterrent. Together with the Trident II D5LE2 Strategic Weapons System (SWS), *Columbia* will ensure the effectiveness and availability of the nation's Sea-Based Strategic Deterrent through the 2080s. With the *Ohio-class* submarines nearing the end of their service life, there is no further margin for delays in this once-in-a-generation program without impacting U.S. Strategic Command requirements. *Columbia* must be on patrol no later than October 2030. The first submarine began construction last year, with the second boat on track for procurement next fiscal year. We will continue to advocate for aggressive construction schedules and incorporate "lead ship learning" to guarantee on-time delivery of the entire class to ensure this national asset's capability in the decades ahead. *Columbia* will continue to grow substantially as a proportion of the total shipbuilding budget beginning in fiscal year 2026, exceeding 25 percent when *Columbia* enters full-rate production.

Sea control and sea denial from beneath the waves are among our Navy's core advantages, and we refuse to yield any ground to the competition. PB-23 underscores our sustained support for procuring two *Virginia-class* submarines per year, and it invests in developing a follow-on attack submarine program, SSN(X), which will be key to sustaining our undersea advantage—setting the conditions for the warfighting advantage of our fleet.

Unmanned systems will play a key role in DMO. We released the Unmanned Campaign Framework in March 2021 to serve as the comprehensive strategy for a future wherein unmanned systems serve as an integral part of the Navy's warfighting team. U.S. 3rd Fleet executed Unmanned Integrated Battle Problem 2021 to integrate manned and unmanned capabilities in operational scenarios. To further operationalize the Campaign Plan, we established Task Force 59 (CTF-59) to accelerate unmanned and AI solutions, demonstrating the importance of warfighters and industry partners in operational experimentation with available technologies. We intend to scale these lessons to 7th Fleet. We also continued work with partners and allies in events such as NATO Maritime Unmanned Systems Initiative Exercises and International Maritime Exercise 2022.

We completed MQ-25A "T1" aircraft in-flight refueling of Navy carrier-based aircraft and its first carrier demonstration and completed over 4000 hours and 46,000 nautical miles of USV operations. Additionally, we recently established the Unmanned Task Force, a cross-functional team focusing on rapid experimentation and solving operational problems to quickly inform acquisition strategies. The focus remains on enabling technologies to provide near-term capability, take an evolutionary approach, and lay the foundation for the future hybrid fleet.

This year, we celebrated the centennial of our aircraft carriers. They have proven to be the most survivable and versatile airfields in the world, and our nuclear-powered carriers will remain a cornerstone of the Navy's conventional deterrence for decades to come. *USS Gerald R. Ford* (CVN 78) achieved Initial Operating Capability in December 2021, completed flight deck certification, and is scheduled to deploy later this year. PB-23 supports procuring our follow-on aircraft carriers. CVN 79 construction is 85 percent complete and on track to deliver in fiscal year 2024; CVN 80 construction is 12 percent complete and scheduled to deliver in fiscal year 2028.

The sustained striking power and adaptability of our Carrier Air Wing is vital to controlling the seas and projecting power in contested environments. Today's air wings are more capable than ever with the addition of the F-35C, the E-2D Advanced Hawkeye, and the CMV-22B Osprey. Carrier Air Wing TWO recently completed a deployment with these capabilities, showcasing the cutting-edge lethality of naval airpower. PB-23 adds to our F-35 inventory to expand our fourth- and fifth-generation fighter mix, and it funds the unmanned MQ-25 Stingray, on track to deploy in 2026, which greatly extends the reach of our Carrier Air Wings into contested battlespaces.

We are also laying the groundwork for tomorrow's air wing through the Next Generation Air Dominance portfolio. This highly networked sixth-generation family of systems will leverage manned-unmanned teaming to further advance the cross-domain lethality of our air wings in contested battlespaces. Delivering this capability is vital to outpace PRC fighter development.

Our future fleet design places emphasis on a balance of greater numbers of large and small surface combatants as the foundation of distributed operations. Our newest class, the *Constellation-class* frigate, is a versatile, multi-mission platform that will support operations across the spectrum of conflict. The future large surface

combatant, DDG(X), will bring additional space, weight, and power to support evolving capabilities for a high-end fight. Together, these two ship classes will form the center of our cross-domain teams, bringing more lethality, survivability, and endurance to the fleet.

The Naval logistics enterprise continues to become increasingly agile and resilient to deliver the means to refuel, rearm, resupply, repair, and revive distributed forces, ensuring the Joint Force stays combat credible against any adversary. Over the past 2 years, we have improved our afloat fuel distribution systems, introduced more secure digital systems for better logistics planning and execution, and validated our Future Afloat Logistics Forces Initial Capabilities Document, which defines the capabilities and capacities needed to sustain naval forces. Adequate capacity is a continuing challenge and PB-23 pursues several platform solutions to close the gaps we have identified, including the continued construction of the John Lewis (T-AO 205) Class Fleet Replenishment Oiler Program, the Submarine Tender AS(X), and continued research and development to support the Next Generation Logistics Ship. Additionally, we are continuing to leverage the generous authorities Congress has provided us to renew our surge sealift capacity with used vessels, helping us meet combatant commander readiness requirements. We are grateful for this Committee's support.

SAILORS

To accelerate America's advantage at sea, we must invest in trained, resilient, and educated Sailors who can adapt faster than our adversaries in today's rapidly changing strategic environment. Our Sailors and civilians remain the true source of our naval power. We must continue to prioritize and care for them. From culture to training and education, to overall health and wellness, PB-23 supports the most important element of our Navy—our people.

History shows that the navy which adapts, learns, and improves the fastest gains an enduring warfighting advantage. The essential element in doing so is fostering a healthy ecosystem—a culture—that assesses, corrects, solves problems, and learns faster than the opposition. Our “Get Real, Get Better” movement will help us reduce the variability in performance between our best and worst performers. Get Real, Get Better will train and educate our leaders on the leadership behaviors required to create this culture, along with the supporting tools to solve our hardest problems. Focusing on our people, and their leaders, will further expand the asymmetric advantage that is the American Sailor.

Through the Ready Relevant Learning (RRL) initiative, we are providing Sailors with practical, accessible knowledge and skills that can adapt to the needs of the Navy. Today, RRL provides timely, relevant training using an agile, multi-path approach to ensure our operators have the knowledge they need on the deck plates to succeed in combat. RRL supplements our traditional brick-and-mortar schoolhouses with modern, multi-media, multi-platform solutions. Recently, we transitioned 8 enlisted ratings to this model and completed requirements development for 39 additional ratings. With the funds provided by PB-23, the Navy will advance the Career Long Learning Continuum effort, which is critical to the program goal of maintaining continuity and currency of individual training.

The Navy has prioritized the Fleet Training Wholeness initiative to integrate live platforms and simulators across our strike groups. This initiative funds Live, Virtual, Constructive (LVC) unit and strike group training. In the fleet, LVC continues to be a game-changer in training our combat leaders. From the pilot in the cockpit to the technician on the radar scope, LVC allows all domains to train together at unprecedented levels of integration and complexity. PB-23 builds upon the continued integration of live ranges, ships at sea, and aviation shore simulators, and includes funding to integrate aircraft and information warfare systems and capabilities into LVC training. These investments are advancing our Sailors' tactical skills and proficiency against our most advanced competitors.

Building upon the momentum of the Navy's Culture of Excellence campaign, we will implement a holistic and prevention-based Total Sailor Fitness framework. This effort will maximize Sailor, unit, and organizational performance while improving Sailor trust, resilience, mental health, connectedness, and behavioral metrics. Our Warrior Toughness program enables better performance before, during, and after critical events, providing concepts and skills to develop peak performance and make Sailors more resilient and ready for the Fleet. We integrate these programs into the curricula of the Recruit Training Command, Officer Training Command, United States Naval Academy, and our NROTC units. As we drive forward with this Culture of Excellence, the Navy seeks to put the most combat-credible Sailors to sea—first-rate warriors who are willing and able to defend our Nation.

In addition, suicide prevention, Sexual Assault Prevention and Response (SAPR), and Diversity, Equity and Inclusion remain pillars on which the Culture of Excellence will continue to build. As part of our suicide prevention efforts, the Sailor Assistance and Intercept for Life Program provides rapid assistance, ongoing risk management, coordination of care, and reintegration assistance for at-risk service members. Continued resourcing of this program saves lives. A full continuum of mental health and wellness support is also available worldwide, including at specialty and primary care clinics, Navy installation counseling centers, on the waterfront, embedded within the Fleet, and via virtual health platforms. Non-medical mental health services are available for Sailors and their family members through Fleet and Family Support Centers, Military and Family Life Counseling, and Military OneSource. Navy Chaplains provide confidential counseling and are essential in ensuring the spiritual readiness and resiliency of the Naval Force. There is “no wrong door” for our Sailors to get help.

The Navy is leveraging metric-based, sexual assault data to better understand sexual assault risk factors. This strengthens our SAPR programs with research-informed approaches to prevention programs and policies. We are also implementing recommendations from the Independent Review Commission on Sexual Assault in the Military, using a deliberate, methodical approach to improve accountability, prevention, climate, culture, and victim care and support. These include addressing gaps in leader training to develop inclusive cultures that foster healthy command climates, providing sexual harassment victims with SAPR victim advocacy services, completing a SAPR Workforce Study to ensure unfettered support to sexual assault victims that phases out non-deployable collateral duty victim response personnel, and the phased hiring and integration of a primary prevention workforce.

The Navy is building a force that looks like the nation we serve. We benefit from our Sailors’ talent, experience, and insights. Today, the Navy is more demographically diverse than ever before. As we strive to become a more diverse, equitable, and inclusive force, we have built on lessons learned from our findings in Task Force One Navy, implementing 36 task force recommendations, with 18 more in progress. We must actively include all perspectives to harness the creative power of diversity, accelerating the Navy’s warfighting advantage. To support our Sailors, increase productivity, and generate cost efficiencies, the Navy is modernizing its Manpower, Personnel, Training, and Education Enterprise. Our Human Resources (HR) processes and operations have not fundamentally evolved in over 70 years. For too long, we have been managing our force with over 55 aging information technology systems, some of which are over 40 years old. These systems are not interoperable and do not provide a single authoritative data source. MyNavy HR Transformation is fixing this. We continue to make strides towards our Navy Personnel and Pay system roll-out, which is an important foundational step for the overall transformation. By synchronizing and streamlining all aspects of personnel readiness, this overhaul will improve the lives of all Sailors and their families.

The Navy is a family, and our families serve along with us. Having witnessed the steadfast resilience of Navy families every day of my career, I have made it a daily practice to think about how to improve their lives. As all service members know, when we take care of them, they take care of us.

CONCLUSION

The U.S. Navy’s mission has never been more essential for the preservation of American security and prosperity. Facing increasingly aggressive challengers, the Navy’s priorities—Readiness, Capabilities, Capacity, and our Sailors—will help us maintain our combat credibility in contested seas.

We will need Congress’s continued support. Since 2010, the Navy’s buying power has not kept pace with inflation. “Must pay” once-in-a-generation strategic deterrence recapitalization and once-in-a-century shipyard infrastructure investments—along with rising readiness, labor, and material costs—are consuming larger shares of the Navy’s budget. This loss in buying power has delayed modernization, reduced procurement, and constrained our ability to grow the force. To simultaneously modernize and build the capacity of our fleet, the Navy would need sustained budget growth at three-to-five percent above actual inflation. Short of that, we will prioritize capability over capacity. This will decrease the size of the fleet until we can deploy smaller, more cost-effective, and more autonomous force packages at scale.

The investments we make this decade will determine the maritime balance of power for the rest of this century. Ships, submarines, and aircraft are undoubtedly expensive instruments of national power, as are the associated costs of maintaining

them at a high level of readiness. But history shows that without a powerful Navy, the price tag is much higher.

On behalf of more than 600,000 active and reserve Sailors and Navy Civilians, thank you for allowing me to testify today. I am grateful to this committee and to your colleagues in Congress for your steadfast commitment to the Navy. We look forward to sailing alongside you to sustain our advantage at sea.

Senator TESTER. Thank you, Admiral. General Berger, you are next up.

STATEMENT OF GENERAL DAVID H. BERGER, COMMANDANT, UNITED STATES MARINE CORPS

General BERGER. Chair Tester, Ranking Member Shelby, and distinguished members of the committee, as we sit here this morning with the backdrop of a war ongoing in Ukraine and malign activities in the Indo-Pacific, it is a good reminder that we don't have the luxury of developing a Joint Force or military for one region or one theater, one type of conflict. That is why it is so important for your Marine Corps to be ready to respond to crisis in any clime and place. That is part of our National Security.

Three years ago, we embarked, as the chair mentioned, on an ambitious program to modernize the Marine Corps to ensure that your Corps was ready not just for the crisis today, but for the future as well. With the bipartisan support of the members of this subcommittee, I can tell you that our modernization effort is on track and building momentum. There were some skeptics outside of Congress on our approach to divest and reinvest those resources over the past 3 years.

But I would tell you this morning that we have done that, and we have self-funded \$17 billion worth of modernization, and that approach has not been easy. We have made hard enterprise wide decisions to get rid of things that we weren't going to need for the future and reduce the number of things we weren't going to need so much of. We have refined, we have economized, we have optimized across the Marine Corps.

And today, I would offer you a brief update on three areas where I think we have seen significant progress over the past year. First, over the past year and a half, we have conducted nine training force on force exercises out in California, which is where we do combined arms live training. Here is what we have learned during those exercise.

Smaller, more mobile, more distributed forces, if they can employ 21st century combined arms and if they have loitering munitions and organic surveillance, ISR (Intelligence, Surveillance, and Reconnaissance) means, they are more lethal than larger formations using traditional kind of structures and traditional tactics. And those findings, I would say, are entirely consistent with what we are seeing in Ukraine right now.

In less than 2 years, we have formalized a concept for stand in forces, built a capability that dramatically expanded what we can achieve in support of both land and maritime operations. The forces that we have deployed in Europe today, they are exercising those stand in concepts, advanced sensing, networking, distribution, all in support of the EUCOM (U.S. European Command) Commander as we sit here this morning.

And the EUCOM Commander, when he was back here in Washington, D.C. to testify, was asked about those Marine forces. His words, they are precious for effective deterrence. Second, some important operational milestones for us. We have retired the aging amphibious assault vehicle ahead of schedule, and we will deploy its replacement, the amphibious combat vehicle, this year on board ship with a MEU (Marine Expeditionary Unit) for the first time.

This year, we had a first deployment of our F-35C squadron on board a U.S. Navy aircraft carrier. And working with the British allies, we deployed a full squadron of F-35Bs on board the Royal Navy carrier, HMS Queen Elizabeth. The MEU, Marine Expeditionary Unit, enabled by amphibious ships, remains the crown jewel of our naval expeditionary forces.

No naval vessel in our inventory is capable of supporting a more diverse set of missions than the amphibious warship. The CNO (Chief of Naval Operations) and I agree, the minimum number of L class amphibious ships that the Nation needs, the minimum is 31. And your support for sustaining that minimum capacity is essential to National Security. Finally, this past year, we published our plan to modernize our personnel system. That will allow us to better recruit, to develop, to retain, and align the talents of individual Marines with the needs of the Marine Corps. And with all that said, what the Marine Corps does for this Nation won't change.

We remain America's force in readiness, capable of diverse missions across the operational spectrum. But how we accomplish those missions is changing. And with this committee's support, we have programed our divested dollars back into new capabilities, and we are putting them in the hands of combatant commanders now, this year, not in 2030.

Despite self-resourcing our modernization, most of our Marine Corps programs remain on track, on time, on budget. And in those limited cases where they have not, I promise you we will continue to work with this subcommittee to make the necessary adjustments.

In closing, I would add my thoughts, just like the CNO for Ranking Member Shelby. I looked up his 60 years of public service. City prosecutor, I wasn't aware of that, sir. A U.S. magistrate, a State Senator, a U.S. Representative, and a U.S. Senator. Among Marines we talk a lot about servant leadership. I think that is a pretty good example of that.

So on behalf of all the Marines, thank you, sir, for your service to our Nation. And to that end, I welcome the opportunity to continue working with the members of this committee, this subcommittee, and I look forward to your question, sir.

[The statement follows:]

PREPARED STATEMENT OF GENERAL DAVID H. BERGER

Chair, Ranking Member, and distinguished members of the Committee, thank you for the opportunity to present this annual report and share my perspective on the opportunities and challenges confronting your Marine Corps, the naval services, and the larger joint force. As recent events in Ukraine so clearly illustrate, our strategic adversaries and competitors are ready and willing to employ violence—at scale—to support their revisionist aims. They are willing to sow chaos, destroy cities, inflict mass casualties, and suffer casualties themselves to rewrite the international order—an order that has broadly and deeply benefitted humanity. To ensure the

joint force remains able to deter, and if necessary, defeat these adversaries, we need to move at even greater speed to modernize the force.

As Commandant, I offer the Service's sincere thanks for the committee's support to our modernization efforts—anchored on Force Design 2030 and Talent Management 2030. Today, I respectfully ask you to recommit to our modernization program. Embracing change before a catastrophic event occurs takes both courage and foresight; thank you for demonstrating both. As I have stated in the past, the Marine Corps does not seek any additional resources for modernization. Rather, we seek your oversight and assistance in ensuring that the resources the Service generates through divestments, reorganization, and redesign are reinvested in our Corps' modernization priorities.

As I have previously testified, the suggestion that we have to choose between preparing to fight tonight, which we are ready to do, or preparing for some distant point in the future presents a false dichotomy. We must balance the very real and delicate resource tension between the force we employ today and the development of the force needed for the future. Our Nation can no longer afford to hold on to capabilities that do not create a relative advantage over our potential adversaries at the expense of capabilities that will keep us ahead of them—no matter how culturally significant or nostalgic to an individual service those capabilities may be.

WE WILL REMAIN “MOST READY WHEN THE NATION IS LEAST READY”

When defense leaders submitted their posture statements last spring, few of us would have predicted that a major conventional war in Europe—the largest since 1945—was only a year away. Russia's brutal invasion of Ukraine is a stark reminder that despite our best efforts, we can never know with certainty when, where, or how an adversary might precipitate conflict. Reflecting on this challenge in a related context, former Secretary of Defense Robert Gates said: “When it comes to predicting the nature and location of our next military engagements, since Vietnam, our record has been perfect. We have never once gotten it right, from the Mayaguez to Grenada, Panama, Somalia, the Balkans, Haiti, Kuwait, Iraq, and more—we had no idea a year before any of these missions that we would be so engaged.”

Why does this matter? From the perspective of a service chief, it matters because we don't have the luxury of building a joint force for one threat, one region, or one form of warfare. We must be prepared for the full range of operations in places we might not expect, and on timelines we did not anticipate. While this is true to some degree for all the services, it is especially so for the United States Marine Corps. Our history is footnoted by examples of our readiness to respond to crisis at a moment's notice in “any clime and place.” This is essential to our identity as Marines, and part of our enduring value to the Nation. In these times of increasing complexity and uncertainty, the Nation needs one force, maintained at the highest levels of readiness that can respond to the crises that few saw coming. We are that force. Maintaining the entire joint force at heightened readiness levels is both unnecessary and unaffordable. Ensuring that the Marine Corps does is both strategically vital and fiscally prudent. As Marines, we have been, and will continue to be, “America's 911 Force”—the Nation's force-in-readiness.

Our ongoing efforts to modernize through Force Design 2030 (FD 2030) and Talent Management 2030 (TM 2030) will ensure the Marine Corps' ability to meet our statutory role and be ready to respond to crises—across the Range of Military Operations—from active campaigning to conflict. While China, as the pacing threat, is critical to informing our force development efforts, the capabilities we seek are theater agnostic. The fact is, our current modernization efforts will enable us to operate, fight, and win in a more diverse set of scenarios and geographic regions than we can today. We are, and will remain, “most ready when the Nation is least ready”—a force in readiness prepared to respond to any crisis, anywhere, at any time.

POSTURE

Today, approximately 30,000 Marines are forward-deployed or forward-stationed, with hundreds more on watch at our embassies across the globe. However, in contrast to earlier periods, fewer of these forward deployed Marines are afloat in service to the Fleet. I remain committed to a robust forward posture to support campaigning and to expanding this forward presence through the employment of additional Marines aboard L-Class ships, Light Amphibious Warships, and other expeditionary vessels operated by the Fleet or our allies and partners.

L-CLASS SHIPS & LIGHT AMPHIBIOUS WARSHIPS (LAW)

L-Class Ships. For decades, the Navy and Marine Corps have demonstrated the power and versatility of Marine expeditionary forces embarked on amphibious ships. Operating as a combined arms team, Marines have come “from the sea” to support all manner of operations, to include: projecting combat power ashore, providing humanitarian assistance/disaster relief (HA/DR), reinforcing U.S. embassies, training allies and partners, and executing non-combatant evacuation operations (NEO). No naval vessel in our inventory is capable of supporting a more diverse set of missions across the range of military operations than amphibious ships.

Amphibious ships provide platforms from which to base and employ a host of multi-domain capabilities—air, ground, surface, undersea, and cyber. Amphibious ships serve as mobile command posts, strike platforms, expeditionary maintenance facilities, search-and-rescue platforms, floating hospitals, sources of potable water and electricity for disaster response, transport and docking stations for smaller vessels, and locations where Marines can train with international partners without the requirement for host nation access. In the near future, amphibious ships with well decks will increasingly be used as mother ships for uncrewed vessels, carrying a wide variety of unmanned surface vessels (USVs) and unmanned underwater vehicles (UUVs) for intelligence, surveillance, and reconnaissance (ISR), anti-submarine and anti-surface warfare, mining, command and control, and military deception. Amphibious ships are also visible signs of U.S. reach and resolve, and because of their unique characteristics, can deploy to a region with a less escalatory posture than many traditional warships. Those unique characteristics include an ability to self-sustain embarked forces for weeks at sea without replenishment. Such resilience and persistence are a unique and vital capability for our combatant commanders.

Viewed through the lens of both the 2018 and 2022 National Defense Strategies, big deck amphibious ships (LHA/LHD), which carry F-35Bs, MV-22s, CH-53s, unmanned aerial systems (UAS), and surface landing craft, are arguably the most versatile warships in our inventory. These ships, when paired with their embarked Marines, have the highest utility across the entire spectrum of conflict from building partner capacity to humanitarian assistance and disaster relief, to Embassy reinforcement, to recovery operations, to strikes and raids against a peer or near peer adversary. This is the very epitome of campaigning forward from mobile sovereign platforms.

During his March 2022 testimony before the House Armed Services Committee (HASC), the Commander of United States European Command (USEUCOM), General Tod Wolters, noted that his requirement for a 365-day Marine Expeditionary Unit (MEU) presence could not be met due to the limitations of the current amphibious fleet inventory, and further characterized the MEU as “precious for effective deterrence.” A week later, Secretary Austin noted in his HASC testimony that, “Amphibs are important to us today. They will be important to us going forward.” I wholeheartedly agree with the conclusions of both leaders, as requested in the fiscal year 2023 Budget. Our MEUs need them; our Fleets need them; and our combatant commanders need them. The National Defense Strategy cannot succeed without them.

Light Amphibious Warship (LAW). Distinct, yet complementary to traditional L-Class amphibious ships, the LAW is envisioned to be a small, amphibious warship purpose-built to provide tactical maneuver for Marine Littoral Regiments (MLRs), forward-deployed naval forces, and other expeditionary advanced base-enabling forces operating within contested environments. The LAW will be a maneuver asset, and as a shore-to-shore connector, is unique and critical to expeditionary littoral mobility. It will facilitate campaigning and will be capable of supporting diverse missions such as security cooperation, HA/DR, logistics support, and the launch and recovery of uncrewed systems for maritime domain awareness. While not optimized for any one threat or region, we envision the LAW as being of particular utility in the sort of maritime gray zone contests we see in the Indo-Pacific. This type of vessel would be well-suited as a platform for Marines countering threats posed by groups like the People’s Armed Forces Maritime Militia (PAFMM), and because of its size and characteristics, could be employed with lower risk of escalation. The LAW will be an important asset to advancing our strategic interests by allowing us to more effectively counter our adversaries’ strategies, support and reinforce alliances and partnerships, and do so at a relatively low cost.

On 9 September 2021, the Secretary of the Navy commissioned the Amphibious Fleet Requirement Study (AFRS). The study directed a determination of the “required size and composition of the future amphibious warship fleet . . . needed to support combat operations, global presence, and safe and effective training.” The

study found we should have a mix of traditional L-Class Amphibious Warfare Ships and Light Amphibious Warships. The study will be one of many factors considered by the Secretary of the Navy, the Secretary of Defense and the Administration as shipbuilding plans and future budget requests are formulated. In my military judgment we will need to employ a mixed fleet of no less than 31 traditional L-Class Amphibious Warfare Ships and 18–36 Light Amphibious Warships to enable us to carry out the NDS.

NAVAL EXPEDITIONARY CRISIS RESPONSE FORCES AND CAMPAIGNING

While the traditional role of crisis response forces in disaster relief operations, such as those executed by the Expeditionary Strike Group centered on the *USS Bonhomme Richard* during Operation Unified Assistance or via the *USS Essex* during Operation Tomodachi, is well-documented and well-understood, these operations are not always perceived as ones that create relative advantage in strategic competition and campaigning. They do. Our response to humanitarian crises and other natural disasters using expeditionary forces—quickly and decisively—demonstrates to our allies and partners that they are never alone when partnered with the U.S. Further, our ability to execute HA/DR operations from amphibious shipping—without a large logistical footprint ashore in support of U.S. forces—maximizes our flexibility and capability to respond while preserving resources best used for relief. In the strategic sense, the significance of this amphibious-based capability and its impact should not be underestimated. While our ability to “be there first” on the scene of a natural or man-made disaster is, of course, critical to the preservation of life, it is also a strategic imperative, affecting our bilateral relationships and matters like access and overflight, as well as our international standing. This is true in every region, but today is most pronounced in the Indo-Pacific, where China aims to expand its regional influence through its own amphibious crisis response capabilities.

At the same time, it is important to recognize the criticality of campaigning with our allies and partners—in their regions—on a daily basis. Naval expeditionary forces operating forward and persistently provide combatant commanders with a sort of “escalation rheostat,” prepared to respond to crises—or prevent them—by employing capabilities that are credible across the range of military operations. Both our presence and the credibility of our forces reassure allies and partners.

MARINE ROTATIONAL FORCE—DARWIN (MRF-D)

In 2011, we established the Marine Rotational Force—Darwin (MRF-D) in the Northern Territory in partnership with the Australian government. Our rotational presence has grown from a company-sized element with limited capabilities to a MEU-sized Marine air-ground task force (MAGTF). Through our recurring presence, we have achieved a high level of mutual confidence and interoperability with the Australian Defence Force, to the point where Marines routinely operate from Australian amphibious ships. The training areas in the Northern Territory and other regions of Australia are some of the best in the world, and certainly the region, affording Marines an opportunity for high-end training alongside one of our closest allies. Additionally, our rotational presence in Australia has enabled Marine forces to engage and train with a range of international allies and partners in ways we did not predict when MRF-D was first established.

VMFA 211 DEPLOYMENT ABOARD HMS QUEEN ELIZABETH

From April to December 2021, ten F-35Bs from Marine Corps Fighter Attack Squadron 211 (VMFA 211) deployed aboard the United Kingdom’s aircraft carrier *HMS Queen Elizabeth*. This historic deployment—the first in which a Marine squadron completed a deployment aboard an allied vessel—represents the culmination of 10 years of focused bilateral cooperation and demonstrates how far we have progressed in building U.S.-UK interoperability. Together with the UK’s embarked F-35B squadron, VMFA 211 completed nearly 1300 sorties, flew in excess of 2200 hours, and executed 44 combat missions in support of Operation Inherent Resolve. The deployment also marked the first time an F-35B cross-decked from a foreign vessel to a U.S. vessel (*USS America*) to refuel and arm before a strike. During its approximately seven month deployment, which spanned three U.S. geographic combatant commands’ areas of responsibility, VMFA 211 conducted exercises with 10 partner nations and flew from the flight decks of three allied ships: Japan’s *JS Izumo*, Italy’s *ITS Cavour*, and the *HMS Queen Elizabeth*. Finally, VMFA 211 was our first F-35B squadron to deploy as a 10-jet squadron in accordance with our FD 2030 goals and as outlined in my 2019 planning guidance.

FORCE DESIGN 2030 AND STAND-IN FORCES

As we further refined Force Design 2030 through wargaming, experimentation, and analysis, it became apparent that we required new thinking to address anti-access/area denial (A2/AD) strategies, that our Marine Expeditionary Forces (MEF) needed additional operational flexibility, and that Marines operating with our MEUs and MLRs could be a substantial part of the solution. This new approach is reflected in A Concept for Stand-In Forces, which describes how forward-postured forces, operating in contested areas, and capable of transitioning rapidly from campaigning, to crisis, to conflict, and back again, can create strategic advantage for the joint force.

Stand-in Forces (SIF) are small, lethal, low signature, mobile forces that are relatively simple to maintain and sustain, and designed to operate across the competition continuum within a contested area as the leading edge of a maritime defense-in-depth. The enduring function of SIF is to help the fleet and joint force win the reconnaissance and counter-reconnaissance battle at every point on the competition continuum. That means SIF monitor a potential adversary's activity and track its forces and sensors at a level that facilitates targeting by the fleet or joint force. Below the threshold of conflict, SIF's tracking of adversary actions can help expose its malign behavior, which can contribute to deterrence. If armed conflict does erupt, SIF will have already gained and maintained contact with opposing forces in a posture that provides relative positional advantage, enabling the fleet and joint force to attack effectively first, seizing the initiative.

Winning the counter-reconnaissance fight means SIF make themselves difficult to find by maintaining a low signature, moving frequently and unpredictably, and using deception to impose costs on potential adversaries, forcing them to expend limited ISR resources. In the context of a naval campaign, it also means that SIF will help screen for the fleet and joint force, protecting it and increasing the fleet commander's freedom of action.

Beyond reconnaissance and counter-reconnaissance, SIF possess lethal capabilities for warfare at, on, below, or from the sea. For example, SIF can contest a chokepoint, sanitize a strait, or deny a specific area, presenting a surface behind which the fleet can maneuver. Area denial could also serve to canalize or "herd" an adversary into a maritime zone where the joint force enjoys relative advantage. Integrated with other elements of organic and joint capability, the SIF becomes both an enabler and a lethal executor of the joint force mission. In competition/campaigning, SIF provide capabilities that support new deterrence approaches like deterrence by detection, integrating the results of its reconnaissance with other elements of national power. In conflict, SIF serve as battle managers and provide long-range precision fires at the forward edge of a maritime defense-in-depth, enabling naval and joint forces to persist within contested areas rather than attempting to force access into them by fighting through an adversary's A2/AD defenses. Our ongoing experiments with SIF have focused on building a globally-relevant capability of value to all geographic combatant commanders, rather than more narrowly on a single potential threat or theater. While some view the SIF concept as Indo-Pacific focused, the fact is that some of our most aggressive experimentation is occurring in other theaters. For example, in his March 2022 HASC testimony, the USEUCOM Commander noted of his II MEF SIF capabilities: "a brown water force that can shoot, move, and communicate, and that is very, very expeditionary, is priceless for 21st century security."

FORCE DESIGN 2030 AND THE RUSSO-UKRAINE CONFLICT

It is too early to draw definitive conclusions about the changing character of war based on the current conflict in Ukraine. Marines aim to be careful and humble students of the ongoing struggle, and resist temptations to declare that it validates or invalidates the foundational assumptions of FD 2030. With that said, we can draw some preliminary conclusions. First, winning the reconnaissance and counter-reconnaissance battle matters. If you are located on a modern battlefield saturated with sensors, you will be targeted. Signature management, maneuver, deception, and tempo are playing an increasingly important role on the modern battlefield. Second, loitering munitions, missiles and rockets are increasingly capable of rendering major weapons platforms vulnerable, whether MANPADS against helicopters, modern anti-armor systems against armor, or ground-based anti-ship missiles against surface vessels. Finally, highly-trained and distributable small units able to create combined-arms effects continue to prove their worth on the modern battlefield. Assertions as to the waning utility of dismounted infantry are proving baseless.

FORCE DESIGN 2030 AND CLOSE COMBAT LETHALITY

Generations of Marines have been educated and trained to locate, close with, and destroy the enemy through fire and maneuver. While the tactical tasks associated with that mission set have not changed, how we satisfy those tasks on a modern battlefield is changing. In addition, the weighting of the discrete tasks within that simple statement is changing, and we must change with it. “Locating,” for example, has become far more important on the modern battlefield. Marines within our three experimental infantry battalions, as well as those participating in force-on-force field exercises, are learning and fine-tuning their skills, integrating existing and emerging capabilities in a combined arms system that accounts for the ongoing changes we see on modern battlefields—changes witnessed since at least the 2006 Second Lebanon War. We will build upon the major investments made by the 37th Commandant in close combat lethality (e.g., investments in the Multi-purpose Anti-armor Anti-personnel Weapons Systems [MAAWS]) by adding loitering munitions, organic UAS, and additional Javelins to our infantry units. Finally, it is important to note that throughout the Force Design process, the focus has been, and remains, maneuver warfare in every dimension and combined arms in all domains, including space and cyber.

In the midst of this organizational change, it is also important to highlight those things that are not changing. When we consider ways to maximize our close combat lethality, two things that will never change are: (1) our commitment to growing and sustaining smart and tough small unit leaders—those Marines actually tasked with locating, closing with, and destroying the enemy; and (2) our commitment to what the 29th Commandant called operational excellence—the ability of a Marine to apply their training, leadership, and discipline with lethal proficiency. No new piece of equipment or warfighting concept can ever be as important. We have always maintained that the individual Marine is the most formidable weapon on the battlefield. We still do.

FORCE DESIGN 2030 PRIORITIZED INVESTMENTS

MQ-9 & Related Sensors. We remain on-schedule to both modernize and increase the number of Marine Corps uncrewed aerial vehicle squadrons (VMU). In 2022, we will expand fielding of the MQ-9, immediately improving the Marine Corps’ capability to support both naval expeditionary forces and the joint force. Uncrewed aerial systems are ubiquitous on the modern battlefield, as recent global conflicts have powerfully demonstrated—whether in Iraq, Afghanistan, Syria, Gaza, Yemen, Nagorno-Karabakh, or Ukraine. Over the next 2 years, the Air Force will transfer ten MQ-9AER Block V aircraft to the Marine Corps, saving the Service approximately \$170 million in procurement costs, which can be invested into sophisticated sensors like Skytower or sonobuoy dispensing pods. These advanced sensors, employed from our MQ-9s, will radically improve our ability to conduct reconnaissance and counter-reconnaissance, and further reinforce our competitive advantages in undersea warfare.

F-35B/C. The F-35 is the most advanced fighter, strike, and sensor platform in the world. As the Commander of United States Indo-Pacific Command (USINDOPACOM) recently noted during testimony, “The importance of the F-35 cannot be overstated.” We remain convinced that low observable and very low observable, short take-off and vertical landing (STOVL) aircraft like the F-35B provide combatant commanders a competitive warfighting advantage. Mindful of both cost per flight hour (CPFH) and cost per tail per year (CPTPY), I remain committed to working with the Joint Program Office to reduce costs for both acquisition and sustainment. The Marine Corps remains focused on accelerated transition to an all F-35 tactical aviation (TACAIR) fleet in order to stay in front of our pacing challenge. We have procured 176 of 353 F-35Bs and 48 of 67 F-35Cs to-date.

Organic Precision Fires—Infantry/Mounted (OPF-I/M). OPF-I/M will provide multiple echelons of the Fleet Marine Force (FMF) with an organic, loitering, beyond line-of-sight, precision strike capability, profoundly enhancing the close-combat lethality of maneuver forces. We are currently investing \$2 billion in OPF across the Future Years Defense Program (FYDP), and expect the first systems to be fielded with our enhanced infantry battalions and new mobile reconnaissance units in fiscal year (FY) 2025. OPF-I will be employed at the low tactical level to allow Marines to rapidly engage the enemy beyond the range of direct fire weapons, while minimizing collateral damage and exposure to enemy direct and indirect fires. OPF-M will integrate a vehicle mounted, multi canister launch platform on our Joint Light Tactical Vehicles (JLTV), Light Armored Vehicles (LAV), and Ultra-Light Tactical Vehicles (ULTV). On its own, OPF-M can strike targets at ranges beyond 40km. However, its lethality is amplified when employed with Group-2 UAS as part

of our emerging “hunter-killer team” employment concept. Operating as a hunter-killer combination, our mounted units can deliver precision effects, as well as surveillance before, during, and after striking targets, at ranges previously reserved for the air wing. These combat-tested and combat-proven capabilities will redefine how small units close with and destroy an adversary. Once fully fielded, each infantry and mobile reconnaissance battalion will possess no fewer than four “hunter” UAS (potentially the Stalker VXE Block 30) and seven dedicated “killer” mounted launchers.

Amphibious Combat Vehicle (ACV). In 1989, the 29th Commandant wrote in his posture statement that his number one priority was the procurement of an advanced amphibious vehicle to “replace our current amphibious assault vehicle (AAV), now approaching the end of its service life.” Thirty-three years later, we divested of the AAV and are now focused on accelerating the procurement of the ACV. It remains a “must-have” capability for our forces operating in the global littorals—especially in archipelagic environs across the Pacific. We remain committed to an approved acquisition objective (AAO) of 632 vehicles and have procured 267 to-date. We anticipate procuring another 74 in fiscal year 2023.

Medium Range Missile (MMSL) Batteries. Due to the continued support of Congress, we remain on-schedule to reach initial operating capability (IOC) for one MMSL battery in the Pacific by 2023 (to be employed by 3d MLR). We remain focused on fielding 14 total MMSL batteries (142 total launchers) by fiscal year 2030. These MMSL batteries—combining the Navy Marine Corps Expeditionary Ship Interdiction System (NMESIS) and ROGUE Fires—will be capable of firing the Naval Strike Missile (NSM) and Tactical Tomahawk, thereby holding adversary targets at-risk both afloat and ashore, further complicating their decisionmaking. This capability is just as relevant in the Western Pacific as it would be in eastern Ukraine, where shore-based fires have already been used to destroy enemy surface combatants.

Long Range Anti-Ship Missile (LRASM). In addition to the investments made in Ground-Based Anti-Ship Missiles (GBASM), we have also begun investing in AGM-158C (LRASM) to further expand the range and lethality of our aviation-delivered fires. Marine aircraft equipped with LRASM, operating from both ship and shore, will thicken the existing network of fires, further distribute lethality across a theater, and enhance the credibility of our existing deterrent in any region.

CH-53K. The CH-53K provides the FMF and combatant commanders with an unmatched vertical heavy-lift capability to project, maneuver, and sustain combat forces. It remains the only fully marinized heavy-lift helicopter in development or production. The CH-53K can lift more, farther, and faster than any other rotary wing platform in the world. We declared CH-53K IOC on 22 April after fielding a four-plane detachment worth of aircraft, support equipment, and trained aircrew and maintainers. While we remain concerned by the continued growth of procurement costs, we have actions in place to try to mitigate growth. We are further concerned by the projection of the sustainment costs and the total cost of ownership, which may exceed \$390 million per aircraft. We are actively working with industry to reduce those costs and will continue that fight throughout the life of the weapon system. Still, a marinized, heavy-lift capability is an absolute “must have” for the joint force as the costs of maintaining the increasingly outmoded CH-53E inventory is prohibitive. To date, we have procured 40 aircraft.

Ground Based Air Defense (GBAD). GBAD includes multiple FD 2030 priority programs such as the Marine Air Defense Integrated System (MADIS) and Medium Range Intercept Capability (MRIC). MADIS will enable our low altitude air defense (LAAD) battalions to provide short-range air defense (SHORAD) for our maneuver forces and fixed facilities, to include against hostile aerial threats from UAS. MRIC—currently in development—is an air defense system for fixed sites, designed to counter large UAS (Groups 3 and 4), cruise missiles, and fixed/rotary wing aircraft. Based on on-going operations in Ukraine, and lessons learned from recent conflicts in Syria and Nagorno-Karabakh, we believe these GBAD programs to be essential for our Marine expeditionary forces.

FD 2030 EMERGING CAPABILITIES

Long-Range Unmanned Surface Vessel (LRUSV) and Unmanned Underwater Vehicles (UUV). Just as our MQ-9AER and successor platforms will provide persistent surveillance and reconnaissance of competitors and strategically critical geography from the air, the Long-Range Unmanned Surface Vessel (LRUSV) will do the same from a sea-based platform. It will also provide unique capabilities for undersea scouting and C2 enabling. The rapid evolution of long-range precision munitions allows for form factors that can be employed at sea or ashore, and will progressively

increase deterrence options as they become available. Our plan is to home-station these capabilities in Guam, Japan, and Hawaii. In addition, UUVs deployed from our existing inventory of L-Class ships or from future Light Amphibious Warships can further reinforce our competitive advantages in undersea warfare, expand our battlespace awareness and that of our partners and allies, and when armed with torpedoes, further reinforce sea-denial operations in contested spaces.

Artificial Intelligence (AI)-Enabled Counter-Intrusion and Counter-UAS. For the past 18 months, we have conducted tests with AI-enabled counter-intrusion and counter-UAS systems aboard several of our bases and stations. The performance of these systems has exceeded all expectations. As a result, the Commander of Marine Corps Forces, Pacific submitted an urgent-needs statement requesting the capability be fielded at all bases and stations in the Pacific. Initially, this capability will be employed at fixed sites. However, in the near-to-mid-term we anticipate employing a mobile version of this small footprint, AI-enabled sensing platform. This will allow our stand-in forces—with allies, and partners—to better sense and make sense of the dynamic maritime and urban terrain where we operate.

Swarming UAS. Over the next 12 months, we will conduct a series of experiments at I MEF with AI-enabled swarming UAS and loitering munitions. While planning for this effort is in the early stages, we are confident this capability will create game-changing improvements to close-combat lethality for our ground forces and will further realize the vision of the 31st Commandant's Hunter Warrior experiments from 1997–1998. Swarming UAS will extend the area of influence of every maneuver element, creating competitive warfighting advantages over our adversaries.

Unmanned Logistics System-Aerial (ULS-A) and Future Vertical Lift (FVL) Family of Systems (FOS). The past 5 years of wargames have demonstrated that our logistics and sustainment capabilities will be targeted by near-peer competitors. As the ongoing conflict in Ukraine has poignantly illustrated, even traditional ground logistics resupply, executed over interior lines and relatively short distances, can be disrupted, with operational level effects. As we develop our new naval expeditionary units and expand our uncrewed aircraft capability, we will increasingly invest in uncrewed logistics aircraft such as the ULS-A Medium and ULS-A Large. This year we will invest \$32 million in ULS-A Medium (Group 3 UAS), which is capable of carrying 300–600 pounds of cargo a distance of 100NM, while developing plans to procure ULS-A Large. To date, the Air Force has the most mature understanding of this capability, and has experimented with an electric vertical takeoff and landing (eVTOL) aircraft that may satisfy our needs in the future. We are wrapping all these efforts together within our aviation enterprise's FVL (VTOL FOS) program, and have invested \$584 million over the FYDP.

FORCE DESIGN 2030 INSTALLATIONS AND LOGISTICS

Our ability to sustain our tactical forces across time and space is a critical component of integrated deterrence. The pacing threat continues to erode our traditional warfighting advantages, particularly the ability to close and sustain our forces at times and places of our choosing. Unfortunately, most of our current logistics processes and procedures play right into their strengths. Because the operational environment is increasingly contested, our logistics efforts from the tactical edge all the way back to the homeland will have to fundamentally change. As we are witnessing in Ukraine, even a numerically superior force will struggle to sustain itself and protect supply routes against persistent attack and disruption. We cannot allow this occur.

As part of the broader logistics enterprise, we must improve the ability of our installations to provide the critical requirements that enable FMF readiness. We must have resilient infrastructure and services that provide the platforms necessary to enable delivery of capabilities from across the service enterprise. Because the environment is dynamic, we must have the means to protect our installations and organic industrial base from an increasingly complex range of operational, environmental, and climate-related threats. With the proliferation of the Mature Precision Strike Regime and expanding information-related threats, we need to better leverage technology, specifically AI, to ensure we maintain the ability to defend ourselves from emerging and evolving threats such as those posed by small, unmanned aerial systems.

In the Pacific, we are experimenting with command and control and organizational proofs of concept so our installations and logistics units can make more effective, direct contributions to FMF warfighting capability. We will place our installations under an operational command structure to ensure they are more resilient to

operational, environmental, and climate-related threats, and better postured to meet the needs of the FMF.

We are pursuing a range of material capabilities to diversify and modernize our logistics portfolio, aligned to a contested littoral environment. At the tactical level, we are currently testing and assessing several platforms that will enable us to transition from a battlefield maneuver and sustainment capability based on crewed aircraft and wheeled vehicles to a diverse collection of crewed and uncrewed air and ground platforms that are smaller, cheaper, and collectively result in a more resilient distribution network of platforms and connectors. In addition to our efforts to generate, store, and distribute renewable energy forward, these platforms will exploit rapidly moving technologies that the Department and our industry partners are pursuing to decrease our dependence on vulnerable fuel supply chains, while enabling us to deliver critical commodities via the naval and joint logistics enterprise across the vast distances of the Pacific, despite enemy sensing and targeting capabilities. The most visible platforms will be a family of uncrewed logistics air systems, the smallest of which are already in prototyping and live experimentation. Our experimentation is yielding exciting results that underscore the need to expand into large and medium uncrewed logistics systems. Additionally, we will begin exploring options to replace our ground logistics fleet with a smaller, lighter, fuel-efficient replacement for vehicles that have run long past sustainability. We are now exploring emerging technologies that we can leverage to deliver capable, yet affordable vehicles that reduce our reliance on fossil fuels. As a modest first step, we will lease 3,875 non-tactical electric vehicles this year, and likely expand our inventory of electric vehicles in the future.

As I have said numerous times over the last year, logistics is the pacing function, and the on-going conflict in Ukraine appears to validate that conclusion. As such, logistics provides the resources and sets the limits for what is operationally possible, even as logisticians attempt to extend those limits as far as possible.

FORCE DESIGN AND THE RESERVE COMPONENT

We recently established the Marine Innovation Unit (MIU) within our Reserve Component. The MIU's work will complement that of our Marine Corps Warfighting Laboratory (MCWL) by accelerating advanced technology development. Reserve Marines in the grades of sergeant through colonel will be assigned to this unit on the basis of their expertise in areas like artificial intelligence, data science, human systems, advanced manufacturing, quantum computing, autonomy/robotics, space, supply chain management, cyber, synthetic biology, energy and materials sciences, and other technology fields. This initiative will allow us to tap into the diverse talent pool in Marine Corps Forces Reserve, and through its collaboration with MCWL, integrate research in multiple advanced disciplines into Force Design and related efforts.

READINESS

Though some aspects of our military 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 armed conflict, remains as valid today as it was when first articulated. I remain as committed to ensuring your Marine Corps can fulfill this vital role as those who preceded me.

But as I have previously noted, readiness and availability are not the same things. Ready forces are those that create competitive warfighting advantages. As we are witnessing in Ukraine, available Russian forces are being met by Ukrainian forces possessing competitive warfighting advantages. Prior to the commencement of hostilities, if one had asked for a relative combat power assessment based on each side's bench of ready (available) forces, that assessment would have been disproportionately skewed towards the Russians. As we have seen in Ukraine and in other recent conflicts, true readiness is a hypothesis to be tested and proven via employment in combat, and is not something that can be determined via availability alone.

READINESS AND COVID-19 UPDATE

As of 22 April 2022, 96 percent of the Active Component is fully vaccinated and 97 percent partially vaccinated. Within our Reserve Component, 91 percent are fully vaccinated and 92 percent partially vaccinated. 3,702 Marines asked for a religious accommodation and seven have been approved. 1,067 Marines have received approval for a medical or administrative exemption. As of 22 April, 1,978 Marines have been separated for a failure to comply with a lawful order.

CLIMATE READINESS AND RESILIENCE

The Secretary of the Navy has directed the Navy and Marine Corps to develop plans for increasing our capability and capacity to mitigate both the near-term and long-term operational impacts of climate change. He has also set a goal of achieving net-zero carbon emissions at our bases and stations by 2040. For the Marine Corps, I view our climate-related mitigation efforts as crucial to increasing the Service's operational capability, capacity, and resilience in the face of serious environmental challenges, including extreme storms along the East Coast, rising oceans levels along the Carolina coast, and water scarcity at bases and stations in the Southwest. It also important to note that many of the communities surrounding our installations share our climate-related vulnerabilities. We believe that partnering with Federal agencies, states, localities, tribes, and territories on climate change related planning is critical to maximizing the impact of our collective mitigation efforts.

TALENT MANAGEMENT 2030

Late last year we published Talent Management 2030 (TM 2030), and in doing so, took a major step toward realizing the goals of Force Design 2030 and our larger service modernization effort. TM 2030 aims to create a personnel system that better harnesses, develops, and aligns the talents of individual Marines with the needs of the service to maximize the performance of both, improving both individual and unit readiness, capability, and lethality. The report details the deficiencies in our current manpower model and directs a series of reforms, initiatives, and changes that will fundamentally improve our service's organization, processes, and approach to personnel and talent management. TM2030 was informed by years of studies, reports, and other research, as well as the work of our sister services in the joint force. The influence of Congress is also evident throughout the report, and many of the most important initiatives described in its pages are the direct consequence of expanded authorities that Congress gave the services in the John S. McCain National Defense Authorization Act for fiscal year 2019.

The totality of changes described in TM2030 are significant. They are also essential, especially within the broader context of our ongoing Force Design 2030 effort. In short, the capabilities we are building as part of Force Design 2030, along with the complementary concepts of Stand-In Forces, Expeditionary Advanced Base Operations (EABO), and Distributed Maritime Operations (DMO), cannot reach their full potential without a profound change to our personnel system. In that way, TM2030 should be viewed as a critical requirement to the success of our overall service modernization.

We plan to fully implement the changes described in TM2030 and transition from our current manpower system to a talent management system no later than 2025. Change of this magnitude requires the dedicated commitment and long-term support of both military and civilian leaders. While I believe we have most of the necessary authorities to fully implement TM2030, I will be sure to inform Congress if any challenges or obstacles arise for which we may need your assistance.

Among the more important changes, the implementation of TM2030 will adjust our decades-old recruiting-centric enlisted personnel model, placing more emphasis on retention. This change will raise the aggregate age of our Marines and create a more mature force, consistent with future warfighting requirements. We expect this will raise personnel costs, yet well within accepted norms. For example, today the average cost per Marine is \$73,800 per year (pay, housing, training, etc.). By comparison, the average cost of a Soldier is \$79,800, the average cost of an Airman is \$82,500, and the average cost of a Sailor is \$89,900. While we anticipate a cost increase in the short term, we also expect a cost savings over the long term as we reduce the number of recruiters, instructors, and other resources required to maintain a recruiting-centric enlisted personnel model. In the near term, the most visible sign of our shift towards a more mature retention-based force will be a drop in the annual recruiting mission by several thousand, and a congruent increase in retention.

DIVERSITY, EQUITY, AND INCLUSION

I remain committed to maintaining a total workforce that benefits from the whole of our Nation's vast human capital by recruiting, developing, and retaining Marines and civilians from all personal, cultural, and professional backgrounds. In practice, that means eliminating all structural, administrative, cultural, or other obstacles that might limit a Marine's ability to have a successful career. Capitalizing on the talents, knowledge, skills, abilities, experiences, and perspectives of every Marine will make our Corps stronger, more lethal, and more effective on the battlefield, today and tomorrow.

As a Corps, we have made great strides over the last 5 years in eliminating obstacles to the upward mobility of talented Marines from traditionally underrepresented demographics. One way to measure our progress is to examine the rate at which Marines from these backgrounds are selected to command battalions and squadrons at the O5/lieutenant colonel level, a key career milestone that indicates a Marine has potential for a significant leadership position within the Service. Five years ago, 19 percent of African American Marines screened for O5 command were selected. Since then, the average is 34 percent with a high of 44 percent. Five years ago, 3 percent of our battalions and squadrons were commanded by female Marines. Today that number has increased to 9 percent. In fiscal year 2021, for the first time, a higher percentage of female Marines who screened for O5 command were selected than their male counterparts. We do not select our commanders based on gender, race, or any other marker, so the fact that Marines from these diverse backgrounds are being selected for O5 command indicates to me that we are making progress in reducing obstacles to the upward mobility of talent.

While there is evidence of some progress, there is also evidence we still have obstacles to eliminate. For example, we continue to experience a concerning lack of diversity within our TACAIR community. Despite a significant increase in the number of African American officers over the last four decades, we have the same number of African American TACAIR pilots today as we did in 1981. Last year we asked former NASA Administrator and Marine, Major General Charles Bolden (USMC, Ret.), to conduct a third-party review to examine the structural and systemic issues that might be leading to this outcome. His observations and conclusions were valuable, and I am confident his recommendations will help us to create a more equitable playing field.

SEXUAL ASSAULT PREVENTION AND MILITARY JUSTICE REFORM

The eradication of sexual assault from our ranks has been a goal of every Marine Commandant for decades. Despite making progress in fostering a culture where reporting of sexual assault crimes has increased and where victims are more willing to communicate with their leadership, we have admittedly been unable to accomplish what we all seek—the elimination of sexual assault altogether. In 2021, there were 1,202 reported sexual assaults in the Marine Corps. We must consider any policies that could increase prevention and offender accountability, and reduce or eliminate retaliation or retribution against victims. I remain committed to timely implementation of the Independent Review Committee's (IRC) recommendations, as well as implementation of changes in the fiscal year 2022 National Defense Authorization Act (NDAA) that seek to improve the investigation, disposition, and litigation of victim-related crimes.

PARENTAL LEAVE AND CHILDCARE

As part of TM2030, we will begin making several key updates to our parental leave program beginning in 2022. First, we are grateful to the Congress for the additional authorities to increase the duration of parental leave for primary and secondary caregivers; we have expanded our secondary caregiver leave and are working with OSD on the timely implementation of increased leave in cases of adoption or long-term foster care. Second, we are developing mechanisms by which primary and secondary caregivers can take additional parental leave—beyond the congressionally-authorized 12-weeks—if they agree to extend their service contracts. Third, we will implement a phased return to work program for the primary caregiver, allowing the caregiver to return to work gradually. Finally, and most importantly, we won't stop learning. We will carefully study the best practices of top performing American companies and institutions, always with an eye to enhancing our service parental leave programs as new research becomes available.

Increasing the availability of childcare remains a top priority for the Service. Unfortunately, persistent supply and demand imbalances have resulted in unacceptable wait times for our Marine families. The average wait time for childcare across

our major bases and stations is 65 days. However, based on a number of actions taken this year, we anticipate a decrease in the average wait time by 50 percent over the next 12 months. Additionally, we increased funding for our Marine Family Care Programs by \$91 million, beginning in fiscal year 2023 across the next 5 years. To provide a variety of options that fit a families' needs and to mitigate lengthy Child Development Center (CDC) waitlists, we also offer fee assistance for eligible Marines who are geographically remote, reside more than 15 miles from an installation, or are assigned to an installation with a lengthy CDC waitlist.

BARRACKS AND FAMILY HOUSING

In fiscal year 2021, we renovated 13 barracks, and in fiscal year 2022, we plan to renovate another 10 at a cost of \$93 million. We anticipate renovating a further 10 barracks in fiscal year 2023 at a cost of \$112 million. This will leave 94 barracks for future renovation. The renovations completed in fiscal year 2021 to fiscal year 2023 will positively impact 3,780 Marines living in the barracks. In terms of family housing, our biggest challenge is related to ongoing efforts to renovate over 300 homes at MCAS Iwakuni, for which we recently issued a contract to renovate 44, to be completed by fiscal year 2023. Additionally, we anticipate spending a further \$104 million in fiscal year 2023 to further remediate housing deficiencies across our bases and stations.

TRAINING PHILOSOPHY

In 1990, then Commandant Gray stated, "Training will reflect the fact the modern battlefield demands high levels of initiative and an ability to operate at a fast tempo in an atmosphere of uncertainty, confusion, and rapid change. Unit training will largely be free-play training in order to develop this ability. Individual training, starting with boot camp, will seek to develop independent action and initiative." This guidance remains as relevant today as it was 32 years ago.

TRAINING RANGES

The Marine Corps has no outdoor training spaces or ranges where ground units can operate in an electromagnetic spectrum operations (EMSO) denied, degraded, or disrupted environment, and limited opportunities to replicate such an environment in simulation. Today, we are able to conduct some of this training at joint facilities, most notably in Alaska's Joint Pacific Alaskan Range Complex (JPARC). However, we need to be able to train in a similar manner at all of our major training facilities. This is a critical shortfall of our existing training infrastructure in Arizona, California, Hawaii, and North Carolina. Additionally, we lack littoral maritime training ranges akin to our legendary Range 400 at the MAGTF Training Center in Twentynine Palms, California. As we modernize the force for naval expeditionary operations in contested environments, we will require a maritime training site with suitable seaward and landward ranges where we can train with the full range of our multi-domain weapon systems, to include uncrewed systems. Finally, we must remain mindful of the impacts of urbanization and community growth on our training capacity, especially in Hawaii.

ENHANCED INFANTRY AND LEADER TRAINING

In 1997, the 31st Commandant gave a speech at the National Press Club in which he articulated the need to transform our most valued Marine Corps asset—the Marine infantry non-commissioned officer (NCO). While most remember his characterization of the future "Three Block War" and the new importance of the "Strategic Corporal," most forget the context of his argument. General Krulak described to his audience the Battle of Teutoburg Forest, during which the Roman pro-consul Quintilius Varus had his force of three legions ambushed and destroyed by an adversary he put down 3 years prior. As his force was collapsing around him, Varus was heard to say, "Ne cras, Ne cras" (Latin for "not like yesterday"). General Krulak's prescient assumptions about the future of ground combat in urban areas has proven accurate time and again—whether in Iraq, Afghanistan, Syria, or Ukraine today.

Our continued force-on-force experimentation and training in support of FD 2030 further demonstrate that the future battlespace will not be like yesterday, and change is required—even among the elite Marine infantry community. As a result, over the past year we have greatly expanded our infantry training by adding an additional six weeks to the program of instruction. This expansion provides our infantry Marines with the training necessary to employ networked communications, organic precision fires to include loitering munitions, and multi-domain ISR capabili-

ties at the lowest tactical level. The result will be a more technically competent and tactically proficient infantry than has ever existed in the Marine Corps—prepared to operate, fight, and win on any modern battlefield. And, one with both the physical stamina and mental resilience required of all Marine infantry past and present. These changes are not limited only to our enlisted force. We have made significant improvements at our Infantry Officers Course (IOC) to expand practical applications via a new live-fire ambush, a new amphibious operations package, uncrewed aircraft systems integration instruction, and final live-fire exercise against a multi-domain threat. Through our continued wargaming and experimentation, it is perfectly clear that an elite infantry is a critical requirement to success on the future battlefield, and the changes that are occurring at IOC and at our Schools of Infantry are now producing that force.

RECRUIT TRAINING

In the 2020 NDAA, Congress directed the Marine Corps to gender integrate training at both Marine Corps Recruit Depots (MCRDs) Parris Island and San Diego no later than fiscal year 2025 and fiscal year 2028, respectively. We are on pace to achieve those deadlines. Since enactment, we have trained 26 integrated companies at MCRD Parris Island and 3 at MCRD San Diego—a total of 11,121 male and female Marines who started their service and journeys together. At present, each MCRD company consists of five male platoons and one female platoon (5+1 model), although there are times when a four male platoon plus two female platoon model (4+2 model) has been employed to accommodate increased female recruit throughput.

AFGHANISTAN

In August of last year, our collective mission in Afghanistan ended. During nearly 20 years of operations, 115,992 Marines served in Afghanistan; 5,101 Marines were wounded in action; an untold number sustained invisible and permanent emotional wounds; and 478 families became Gold Star Families after the loss of their Marine. We have a moral obligation to each of our Marines and their families to resist the temptation to push Afghanistan into our distant memory, and instead bring our experiences there into sharp focus in order to learn. Thousands of Marines, Sailors, Soldiers, and Airmen answered the call to serve in Afghanistan, and while the outcome there was not what any of them expected, their service was honorable and their courage real. We owe them a hard look at how the war was executed—what we got right and what we got wrong. To that end, I fully endorse the nonpartisan Afghanistan War Commission and its aims to help us more completely understand the full scope of the conflict.

When reflecting on our experience in Afghanistan, we also cannot forget the significant contributions of our allies and partners. The U.S. military was fortunate to operate alongside patriots from dozens of allied and partner nations, and we will never forget the service and sacrifices of these brothers and sisters in arms.

JOINT CHIEF PERSPECTIVE

Trust and Confidence in the Military. I remain concerned with continued reports of the public's declining trust and confidence in the uniformed leadership of the armed services. I am old enough to remember when military service was not perceived in the positive light that it is today. I entered service within a decade after the collapse of the U.S. position in Southeast Asia and a year after the failed rescue attempt known as Desert One. Within 2 years of my commissioning, faith in the uniformed and civilian leadership of the military was further rocked by the tragedy of the suicide-bombing of the Marine Barracks in Beirut.

We must address negative perceptions of the military without hesitation. We must also remain mindful that the deeper we dig into the decisions of the past, particularly related to our campaigns in Afghanistan that such negative perceptions may grow. The long-term health of the Marine Corps, naval services, and entire joint force is dependent upon the cultivation and sustainment of a special bond of trust and confidence between the military and the public. We must ensure that Americans who wish to serve, and the families who support them in their service, trust their military and pursue their service “without any mental reservation.” To that end, we must all make a concerted effort to speak with precision, encourage transparency, and welcome any and all oversight that would restore the public's confidence in the military.

Finally, I am increasingly concerned that in our shared desire to eliminate discrimination, harassment, sexual assault, extremism, and every other destructive act within the joint force that is contrary to the core values of all the services, we are

unintentionally creating a harmful mental model and stereotype of the services as places where these are the norm vice the exception. The vast majority of young men and women across the joint force serve honorably, and are incredible representatives of their individual families and communities across the entire country. We must never allow the public to think for a moment that military service is anything other than the most honorable service one can provide to their fellow citizens. The success of our all-volunteer force requires the special trust and confidence of the public. As you hold me and the other senior leaders accountable for all we do or fail to do, and rightfully seek to eliminate persistent behaviors inconsistent with our values, please continue to help me spread the word that military service is honorable service, and that you remain incredibly proud of the young men and women in uniform.

Wargaming and Transparency. In September 1964, the Chairman of the Joint Chiefs of Staff sponsored a wargame on Vietnam for uniformed and civilian leaders from the Department of Defense (DoD), Central Intelligence Agency (CIA), and Department of State (DoS). The wargame was intended to provide senior policy makers with an opportunity to re-examine our national strategic objectives and the strategy required to attain those objectives. For those passionate about wargaming, SIGMA II 64 is “Exhibit A” in the case for its importance. Once declassified, the wargame report provided clear evidence that senior uniformed and civilian leaders understood the situation in Vietnam much better than historians previously assumed.

The story of SIGMA II 64 illustrates the potential of wargames to increase the breadth and depth of our understanding, but more, it illustrates the damage that can result from a lack of transparency. The SIGMA II 64 wargame results were classified and tightly controlled, not shared widely or with those who maintain oversight responsibilities, like Congress. While it is impossible to know if our national leaders would have pursued a different course in Vietnam had the SIGMA II 64 results been more widely shared, it is certain that the debate would have been better informed.

As a joint force, we should make every effort to increase the frequency, sophistication, and scope of our wargames. In particular, we should look to expand the participation of our allies, partners, interagency teammates, and industry, whose collective insights are essential to a strategy which aims at integrated deterrence. At the same time, we must seek greater transparency. I encourage Congress and staff to participate in wargames, continue asking tough questions, and challenge us to be as transparent as possible.

CONCLUSION

As HASC Chairman Smith recently noted, “The Pentagon tends to reward conformity. As long as you check all the boxes and go up through the 15 layers of decisionmaking, we’re all good, instead of you saw a problem and solved it.” This has to change, is changing, and can continue to change with your oversight and assistance. For some, the daily feed of images and intelligence from Ukraine has persuaded them that a change in our availability-based model of readiness and our warfighting investments are required. I agree with these individuals. For others, the case for change has long since been made on 21st century battlefields with little if anything in common. I agree with those individuals as well. However, this does not mean that everything requires change, and that our forces are not ready today, to create advantage today, and to succeed today in whatever challenge confronts them. While the need to train and equip our Marines and Sailors with modern capabilities and equipment that create advantage is beyond dispute, what is also beyond dispute is that those individuals—the individual Marine and Sailor—are a source of competitive advantage for the service and for the larger joint force, and will always be the most important resource. Your Marines are ready today, just as they have always been. What they need is your continued support for resourcing, your continued policy oversight, and your continued faith and confidence. With those things, they will never fail.

Senator TESTER. Thank you, General. And we all feel the same way about the great Senator from Alabama. We are going to miss him, and we are going to celebrate him while he is here, too. So, look, we appreciate all your testimonies very, very much. I am going to start with you, General Berger.

You went over Force Design 2030 pretty well in your opening statement. I guess my question would be, are there opportunities that you are evaluating in coordination and collaboration with the

other services, Army and others, all of them, to develop capabilities to address China specifically, but others also?

And when you are doing that, if you are doing that, which I anticipate you are, are there any—how do you avoid duplication?

General BERGER. Sir, thanks. I would offer you perhaps three examples. First, with the Army long range precision fires. Here, I would say we know where there is a degree of overlap. That is good. But the ranges and the size of the weapons that we are both developing are complementary, not overly duplicative. They have much longer range, long range precision fires that are ground based.

We need them for the Marine Corps. They are lighter, more mobile, more expeditionary on the back of like a joint light tactical vehicle. We need both. So in that respect, we are working together to make sure that we can stitch together the whole fires chain.

Future vertical lift, also with the Army. We have MV-22s right now and helicopters, and together for the past 2 years, we are developing the future of vertical lift, what that might look like.

Lastly, I would say—not lastly, but third, I would say sensing. We are doubling, perhaps tripling, the volume, the quantity, the capacity of ISR in the Marine Corps, organic.

And the way to do that at speed and efficiently was to—with the help of the Congress, 10 MQ-9s that the Air Force was going to buy, we are now going to procure. So it speeds them going in the direction they need it to go, it gets us what we need at cost. So in those three areas and other, sir, we are absolutely coordinating across the services.

Senator TESTER. Thank you. And I appreciate your leadership. I think it is important and it is valued, so thank you. The China threat requires our military to modernize with an emphasis on nimble and distributed operations.

Most of the other services are choosing to adapt to proliferated agile approaches to solve these problems. However, the Navy's shipbuilding plan continues to include fewer, more exquisite platforms to meet the Chinese maritime threat. So, Admiral, why does the Navy's current modernization plan offer the best capability to meet the challenges in the Indo-Pacific?

Admiral GILDAY. Sir, in terms of modernizing the fleet that we have. So we are beginning within this budget cycle to begin DDG (guided missile destroyers) modernization. So our front line greyhound ships will undergo advancements with respect to the radar and sensing systems, as well as new missiles that we are investing in. That would include hypersonics, it would include the SM-6.

We are trying to actually maximize the domestic production lines for all of our weapons with range and speed, so that the ships that we do have out at sea are highly capable. With respect to the ships that we are building, if we think about the submarine force, the force under the sea with Virginia Block IVs and Block Vs, within this budget cycle, mid-decade you will have a strong force of Block IVs and Block Vs with increased magazine capacity will be entering the fleet.

The third Block 5 Virginia class will have a hypersonics capability in 2028. The Navy SEALs have pivoted from a primary focus on counterterrorism back to their frogman roots. So we are working

very closely with the submarine community in highly classified operations to give us a leg up against the adversary, not only today, but in the future. Also, the unmanned work we are doing under the sea, as with respect to a mining capability, is showing really solid progress.

With respect to the surface force, the new frigates that we are building up in Wisconsin are going to be a game changer for us. The destroyers, our Flight III destroyers that are now delivering out of both Pascagoula, Mississippi and Bath, Maine, game changers for us.

And actually the bridge to DDG-X in the early 2030s, putting hypersonics on the Zumwalt Class destroyers is another modernization leap ahead for us. With respect to the Air Wing of the future, right now we are integrating fourth and fifth generation aircraft together in our air wings. By mid-decade, half of our air wings will be integrated with F-35s and F/A-18s.

Our F/A-18s are undergoing upgrades right now to give them increased flying hours to take them from 6,000 to 10,000, as well as an advanced combat system. For the weapons that those aircraft will carry, again, we are maximizing domestic production lines so the magazines in those carriers are filled with the best weapons that we have.

And as you are aware, sir, we are integrating MQ-25 unmanned into the fleet on our carriers right now. We will go IOC (Initial Operational Capability) in 2025. That will take the refueling role away from a strike fighter, enabling us to keep more strike fighters in the air, extend the range of the wing while they are in the air with longer range weapons.

And that MQ-25 is absolutely the trailblazer for us into the next generation of unmanned that we are working very closely with the Air Force on. Sir, apologize for the bit of a long answer to your statement, but this budget proposes some significant enhancements for us in terms of modernizing the force.

Senator TESTER. I appreciate your leadership. I appreciate your obvious knowledge of the situation, so I want to thank you for that. Secretary Del Toro, I will catch you in the next round. Senator Shelby.

Senator SHELBY. Thank you. Thank you, Mr. Chairman. Thank you, all of you for your nice comments, you now, earlier. The Guam defense system. This committee has strongly supported the Department's shift in focus to near-peer competition, which places an emphasis on the Pacific Theater.

And I will direct my question to General Berger here. With the relocation of U.S. Marines to Guam and the committed U.S. investment in Guam, can you provide your perspective, if you can here in this open hearing, on the importance of providing air defense against current and future missile threats in that area?

General BERGER. The points you highlighted about the growing significance of Guam and the role it plays for National Security, I think from Admiral Aquilino to all the Service Chiefs, we would agree 100 percent. It is going to become a major hub. I think that is—there is no question. And that is why Admiral Aquilino is prioritizing the air defense picture on top of Guam and Hawaii, be-

cause the range of weapon systems, as you are alluding to, is growing.

Both from missile defense and air defense, we are going to have to ensure that Guam is protected, not just point defense from Guam, but forward as well. And here, I think this is probably lesser known to most, but well known to you, members of this committee, this is where the forward Marine Corps and Navy, you know, forces that are all the way forward, they contribute to that defense in depth. You don't want to just engage them at the last minute right before Guam. So having the Navy and Marine Corps far forward, where we can pick that up, where we can sense it, where we can target their shooters that is where you want to be.

Senator SHELBY. Thank you. Hypersonic weapons, we talk about them. It is very important to all of us. This committee recognizes that the U.S. commitment to the deterrence is aimed at both preventing war and avoiding escalation of a conflict should war begin, all of it. Deterrence requires spending our limited resources on both offensive and defensive weapons.

Admiral Gilday, as much as you can in an open hearing, would you provide an update on the Navy's conventional prompt strike weapon, as well as the context on the need for hypersonic missiles on both submarines and surface ships, and why meeting your current timelines are strategically important to us?

Admiral GILDAY. Yes, sir. In terms of offensive capability, they will be a game changer not only for the Navy, but for the Nation. As you know, sir, for way too long, the Navy has invested in defensive systems. And so the past few years, with the help of this subcommittee, we made a significant transition to offensive capabilities, hypersonics leading the way.

That effort—and I have been down in Huntsville with the Army leadership to see the work ongoing there. Our hypersonics program in conjunction with the Army has met every benchmark and milestone, sir. You were a significant supporter for our doubling our budget in 2022 from \$0.7 billion to \$1.4 billion investment to keep us on track so that the Army could field that capability in 2023 on a mobile system, and the Navy to field that same capability on a destroyer in 2025.

So, sir, to—I guess to get to the point, it has been our primary R&D effort in terms of delivering this capability on time, not without a significant amount of work from scientists across the country. And so, it remains a priority for us, sir, as we work closely with the Army to deliver this in 2023.

Senator SHELBY. Admiral, the 2022 budget included funds for the development of a nuclear armed sea launch cruise missile. To the extent you can, we know this is open hearing, can you provide an update on the investments that China and Russia are making in their tactical nuclear weapons arsenal and how your budget seeks to meet that challenge?

Admiral GILDAY. Yes, sir. The unclassified——

Senator SHELBY. And how important is that?

Admiral GILDAY. Yes, sir. At the unclassified level, I would say that Chinese and Russian investments in those tactical systems are a significant concern. The Nuclear Posture Review speaks to those concerns. As the committee is well aware, as you are well aware,

sir, the Navy has made investments in low yield nuclear weapons capability based on the previous Nuke Posture Review in 2018. That program remains on track, and we are fielding that capability at this time. But again, the Chinese and Russian, the path that they are on right now is concerning in terms of——

Senator SHELBY. But that is a battle we cannot lose, isn't it?

Admiral GILDAY. Sir, we need to be able to deter that capability, absolutely.

Senator SHELBY. Mr. Secretary, my last question to you has to do with the budget, overall budget. A lot of people, including this Senator, believe that the request is not enough considering the problems in the world. And we understand that you are part of this Administration. Inflation is eroding, even today, eroding what you are asking for. We will have to make that determination working with the House before the year is out.

But we have got to get our arms, one, around the inflation first, and then try to boost our defense capabilities in a dangerous world. I know you have to be restrained by some things in the Administration, but we don't, you know, here and we are going to continue to try to make you funded and not underfunded in defense. Thank you, Mr. Chairman.

Senator TESTER. Senator Baldwin.

Senator BALDWIN. Thank you. Mr. Secretary, in response to President Biden's January 2021 Executive Order, the Navy is working towards a 75 percent domestic content standard for all Navy ships. As you know, the frigate is going to exceed that minimum and will be 100 percent domestic content because Congress required it and the Navy and industry really stepped up. Provided with similar timelines and flexibilities and necessary waivers, would you support getting all Navy ships closer to 100 percent domestic content?

Secretary DEL TORO. Well, first, Senator, thank you for your support of our Marine Corps team and thank you for your support of this issue of Buy America. And as you know, the Department of the Navy does support Buy America. In fact on our first frigate, we are close to 100 percent on the HM&E (Hull, Mechanical, & Electrical) side of the house, for example, and about 96 percent on the rest of the ship. So we are committed to continuing to Buy America as much as possible.

Senator BALDWIN. Thank you. This year, I am requesting additional funding for developing the frigate industrial base and workforce to help ensure a stable and robust foundation as this program ramps up. This is envisioned as being similar to what we have done in other programs. Would you be supportive of this additional funding, and do you agree that such an investment would greatly benefit the program?

Secretary DEL TORO. Senator, I often say that it takes a team to build a ship or any capability in the Department of Defense, and it takes close cooperation among industry, among the Navy, among the American people to bring it to fruition. In similar fashion to the DDG program and Columbia and others, proper investments in the frigate industrial base will be important to the successful completion of that ship.

At the same time, it is also important to hold the shipyards accountable for delivering these ships and platforms on time, on cost, on schedule as well.

Senator BALDWIN. Great. I support getting the frigate program up to three or maybe even four ships per year as a procurement plan, which would require a second yard to build the same design. However, do you agree that we need to get through certain first in class production issues before adding a second yard?

Secretary DEL TORO. I think that is correct, Senator. I mean, I would be all in favor of adding a second shipyard at the right moment in time.

But I think before we make that decision, it is very important to ensure that the technologies that we put on the frigate and our investment of this committee, for example, to the LBES, or the land based engineering support structure, in Philadelphia, is critically important to the success of that ship. And so we have to make sure that that ship stays on schedule, on cost, on time, and those investments should be—come first before we actually consider a second shipyard for that.

Senator BALDWIN. And do you also agree that at only two ships per year, there is simply not enough demand to introduce a second yard?

Secretary DEL TORO. That is likely the case, Senator.

Senator BALDWIN. Okay. And General Berger, you have testified that 31 is the minimum number of large amphibious ships you need to execute your missions. However, all signs point to decommissioning more amphibs and bringing that number down to 24. I know more funding for the LPDs (Landing Platform Docks) is your top unfunded request, which I support. But can you please share any concerns you have about what a reduction will mean to the shipbuilding supplier base?

General BERGER. To make sure I understand, the impact to the shipbuilding industrial base. I would say two parts there, ma'am, and you are going to know these with your background. First would be the shipbuilding, the shipyard itself, certainly.

When you reduce the centers or extend the centers on shipbuilding, the labor force, really difficult to keep them on site because they need work, the families need incomes. And you go beyond a certain center, and it is just they can't stay. They got to go find work somewhere else.

So the impact to the quality of the workforce in HII (Huntington Ingalls Industries) or anywhere else is absolutely key. The second part, which you mentioned, the whole supply chain. Here, this is where the education of the CNO for me over the past few years has paid off because what I have learned on it, like an LPD (Landing Platform, Dock), the components for that ship are made in 39 different States.

So the supply lines, the supply chain for ship construction and ship maintenance is deep in this country. If you, as the CNO says, if you don't give industry the head lights that they need, then their supply chains become very fragile. We can't—this Nation can't afford for that to happen.

Senator BALDWIN. Thank you.

Senator TESTER. Senator Moran.

Senator MORAN. Chairman Tester, thank you very much. Mr. Secretary, pleased to get acquainted with you, and I thank you for your service, and I look forward to working with you as we care for the needs of the Navy and the Marine Corps as we take care of our Nation's defense requirements.

I have discussed with your predecessor the talent that exists in Kansas, at our universities to conduct cutting edge research on Department of Navy programs. We also have, as you would know, have a vibrant defense industrial base that supports both the Navy and Marine Corps requirements.

I appreciate the conversation I had with Admiral Gilday before the meeting started, in which he was complimentary of things going on at a couple of our universities in our State. How does the Department of Navy, under your leadership, see using partnerships with academia and industry to stay ahead of our adversaries and in the development of new technologies?

Secretary DEL TORO. Senator, I think the partnership with academia is critical to our success. And I have had numerous sessions now with the Office of Naval Research, as well as the Naval Sea Systems Command, and my Assistant Secretary of the Navy for RD&A, across the entire department in fact, about building stronger ties to academia.

It is so critically important. And you may mention the University at Wichita, for example, is a program institute for aviation that you have there, is critical to the research that we do on our aircraft across the Department of the Navy. So we are looking for opportunities to actually increase that.

One thing that Secretary Austin, Deputy Secretary of Defense Hicks are committed to is larger investments in research, development, and engineering, and the partnership with academia is just critical to that relationship. And there have been actually quite significant increases in this Presidential budget that I think would enforce that.

Senator MORAN. Mr. Secretary, if you or your team—opportunities, if you can provide me with suggestions of places for cooperation, I would be glad to try to join the two together.

Secretary DEL TORO. Absolutely.

Senator MORAN. I appreciate that. General Berger, it is my understanding that the CH-53 King Stallion is one of the best heavy lift helicopters in the world, and it provides incredible capacity capabilities for our Marines.

But I also understand that the programs like this, there is always cost concerns, and this program is no exception since the cost of one King Stallion has been above—at or above the level of the F-35, for example, for the last fiscal year.

How do you anticipate the cost of the 53-K changing in the coming years, and what is the Marine Corps doing to ensure sustainment of costs for this aircraft are controlled?

General BERGER. I have had the fortune to fly on that aircraft. And I would never correct a Senator, but I would tell you, having flown on that thing, it is not one of the best, there is no other heavy lift aircraft like that in the world.

Senator MORAN. I was just giving you the opportunity—

General BERGER. I know, sir. And I am going to take it. I mean, speed, and lift, capacity. As an example, there was an H-60 that crashed in the mountains of California a month or two ago. To recover there was no—we didn't have anything in the commercial or private sector that can lift an H-60 out of a 12,000 feet altitude mountain, nothing, except for that aircraft.

They went up to 12,000 feet, picked up a 14,000 pound H-60 crashed helicopter and lifted it down to sea level. There is nothing in the world that can do that. Translate that into warfighting, in other words.

To your question on cost, IOC, initial operating capability for us is for aircraft, the crews, trained, maintainers. That is where we are right now. And we are in the very early stages of procurement and the cost per aircraft is going down. It will continue to go down, just like the F-35 and every other major program. The more they build, the more they learn, cost will go down.

Add to that, FMS (Foreign Military Sales) sales to overseas customers that is going to drive the unit cost down too. All that said, sir, just like the CNO and the Secretary alluded to, in both the manufacturing and the long term sustainment costs, we have to work with the manufacturer to make sure that it is affordable, and we are doing that.

Senator MORAN. Thank you for your answer. Mr. Chairman, I have other questions, and I don't know what the intention is of the Chair in regard to a second round.

Senator TESTER. We are going to do a second round, especially if you are willing to stick around, so it is good. Secretary Del Toro, we have talked about the threats that are being posed, China in the Indo-Pacific theater. You have got a shipbuilding plan. Is it achievable, that shipbuilding plan?

Secretary DEL TORO. I believe the shipbuilding plan is very achievable, Senator, Mr. Chairman. The shipbuilding plan actually provide stability over the next 10 years. When you look at the FY DP (Future Years Defense Program) and then you look at the 5 years beyond that, and you look at the three ranges that we have provided in the shipbuilding plan, there is consistency over the course of the next 10 years.

And I think that is the consistency that the industrial base needs to be able to project its workload and its planning ahead of time. Beyond that, it becomes really difficult to predict exactly the nature of the threat and what the threat may actually be.

And so there are three ranges that allows future National Security leaders to take a look at that and determine exactly which path they need to proceed on, also impacted by the fiscal realities of what is going on at that moment in time and inflation and all the other factors that weigh into investments in our National Security program.

Senator TESTER. Appreciate that. Senator Graham.

Senator GRAHAM. Thank you. You made a comment about you are okay with the next 10 years in terms of funding for the Navy. Well, I am not. So what percentage of GDP are we spending in this budget?

Secretary DEL TORO. I would have to get back to you on the exact—

Senator GRAHAM. Well, no, you shouldn't have to get back to me. You should know that. It is 3.1 percent of GDP. The last time we spent 3 percent below was in 1940, 1998, 1999, and 2000. In the next 5 years, according to the budget proposals of this Administration, how many ships will there be in the Navy?

Secretary DEL TORO. There will be 52 ships that get built over the next FY DP.

Senator GRAHAM. How many will there be in the Navy?

Secretary DEL TORO. In the Navy, there will be approximately 280 ships.

Senator GRAHAM. Okay. How many are there now?

Secretary DEL TORO. There are 300—approximately 300.

Senator GRAHAM. So we are going to go down in terms of ships over the next 5 years. How many will there be in China?

Secretary DEL TORO. That is correct, sir. Over the last 20 years, there was also a reduction of 20 ships. And in China, there will be a greater number of those. But what I would argue, it is just not the number of ships that matter, it is the modernization of the ships and the—

Senator GRAHAM. Here is what I would argue to. In the next 5 years, our defense spending, particularly for the Navy, will be below 3 percent GDP, the lowest in modern history.

So tell me why the world as it is would justify in the next 5 years reducing the number of ships and having the lowest percentage of GDP spent on defense in modern history. Start with you, General. Does that make sense to you, Berger?

General BERGER. Sir, I can't answer the second question about percentage of GDP, but I can answer the first part. Absolutely, we have to be able to do three things. We have got to deter, got to be able to respond to a crisis, and if deterrence doesn't work, we got to be able to fight—

Senator GRAHAM. So how—are you okay with going to 280 ships in the Navy?

General BERGER. We have to have—I know the number of amphib ships we have to do the national defense strategy, and that is 31.

Senator GRAHAM. Okay. All I can say is, I am just astounded that China is going to be at 480 and we are going to be at 280. We are going backwards in terms of the size of the Navy. I just got back from Asia. Do you think we should have a bigger footprint west of the international dateline, Admiral?

Admiral GILDAY. Absolutely, sir. Navy, Marine Corps teams are your best deterrent forward.

Senator GRAHAM. I couldn't agree with you more. When it comes to Asia, it is the Navy, Marine Corps. The Air Force plays an important role, but—Mr. Chairman, this budget that is being proposed for this year and the next 5 years is incredibly dangerous. There is no way you will ever convince me that going to about 2.5 to 2.6 percent of GDP on defense makes sense given the threats we face. So you can say anything you want to about the magic ships of 280.

We need more—we need a bigger Navy, not a smaller Navy. We need a robust military that can deter war. And if we get in one, win it. So all I can say to our friends in the Navy and the Marine

Corps, this budget represents irresponsibility, in my view, in terms of what the threats are facing this Nation, and the ability of the Navy and Marine Corps over time to effectively manage these threats, deter, and win the war.

I just don't understand, what about this world in the next 5 years would justify going to the lowest percentage of GDP in modern history. Mr. Secretary, answer that question if you can.

Secretary DEL TORO. Senator, first and foremost, thank you for your support of our Navy, Marine Corps team. It really does mean a lot to us and on many different fronts.

Senator GRAHAM. And you all mean a lot to me.

Secretary DEL TORO. Yes, sir. Again, I go back to what capability—I believe that we need the right capacity, plus the right capability to deliver the right lethality to deter our threat—

Senator GRAHAM. Do we have enough ships west of the international dateline to deter China?

Secretary DEL TORO. I think we do have enough ships west of the international dateline today to deter China in the threat that—

Senator GRAHAM. I just literally got back and the footprint I saw was just unbelievably shallow compared to the threats we face. So you are okay with this 5 year plan to go to 280 ship Navy, you find that it is okay?

Secretary DEL TORO. I do support it, and actually our engagement, as I said in my opening statement, strengthening our partnerships with our allies and partners is increasingly important. So—

Senator GRAHAM. What other navies—are there going up, is the European's navies getting bigger? How many European ships do we have west of the international dateline?

Secretary DEL TORO. Last year we had four modern aircraft carriers operating together for the first time in history. China has never been able to do that ever.

Senator GRAHAM. So who were they?

Secretary DEL TORO. So—I am sorry, sir?

Senator GRAHAM. Who were the aircraft carriers?

Secretary DEL TORO. It was the Harriet—excuse me, it was the Carl Vinson, we had the Izumo from Japan, and we had the Queen Elizabeth as well too, and there was a second aircraft carrier—the Abraham Lincoln? Ronald Reagan.

Senator GRAHAM. What is the trajectory of the Chinese navy, Admiral?

Admiral GILDAY. Pretty steep, sir. So right now there are three—

Senator GRAHAM. Would you say they are doing more than they have ever done to build a blue water navy?

Admiral GILDAY. Absolutely.

Senator GRAHAM. Would you say they are all in in building a blue water navy?

Admiral GILDAY. Their aspirations is to go well beyond the region, yes, sir.

Senator GRAHAM. General, they are all in in trying to dominate Asia in terms of a military presence?

General BERGER. Concur. Absolutely.

Senator GRAHAM. Okay. Thank you. Well, we are not all in and we need to be. To those who serve, it is not your fight. I will wrap up here, Mr. Chairman. I just, the number one job of this Congress, every Congress is to defend the Nation, and these budgets are woefully inadequate to the task.

Our enemies are building up and we are going down and that is a formula for more war, not less. Thank you.

Senator TESTER. Senator Moran, if you are ready, you can go. Otherwise, I will continue. Your choice. Go ahead.

Senator MORAN. Thank you, Chairman. General, the Marine Corps' unfunded priority list in this year's budget includes the procurement of three UC-12 aircraft to complete the operational support aircraft program of record. Can you explain why the procurement of this aircraft has been important to the Marine Corps' modernization efforts?

General BERGER. We have been flying the UC-12, as have the other services, for a long time—earlier models. These are Whiskey models, UC-12Ws specifically. And that model that we are—to your point, these will be the last three in our program of record. These have self-defense systems on board that the previous versions did not. So why are they so important, to your question, Senator?

They are important because if you don't have enough of that type aircraft, you are going to use tactical aircraft to shuttle around people and parts and cargo. We don't want to do that. So we don't want to use the tactical aircraft, the KC-130s or tactical helicopters in place of UC-12s. UC-12s allow us to drive that down and use the tactical aircraft for tactical purposes.

Senator MORAN. I appreciate you answered my following question, what is the difference with them than without them? Thank you, General. Admiral, let me turn to you, one of the highlights and I was telling the Secretary this before the hearing began, one of the highlights of my tenure in the United States Senate was to attend a christening of a Navy ship, the USS Wichita.

And it was great to see the sailors. It was good to be there with the Secretary. It was great to see the community in Florida respond to a new ship. And it was great to have Kansans on the water celebrating that moment. My understanding is that that ship, littoral ship, is going to be decommissioned, or at least that is contemplated. And I also understand it applies to nine Freedom Class littoral combat ships, presumably due to mechanical issues.

I think the christening was just a few years ago, maybe three or so. So the fact that we christen a ship 1 year and a few years later we are decommissioning troubles me. Does the Navy plan to retire these nine ships and how, and is there a priority, order in which the ships would be decommissioned?

One of the nine Freedom Class littoral combat ships was involved in a joint exercises with the Dominican Republic Navy. And those exercises, as I understand and I have read, were successful. They interdicted drugs smugglers. Are there no other uses, if there is something missing from this class of ships, that we would avoid decommissioning?

Admiral GILDAY. Sir, given our top line, what we did was we prioritized or stratified our platforms under the sea, on the sea,

and in the air based on their war fighting value. So what they bring against a fight consistent—in a fight against China, consistent with the National Defense Strategy, given our—and a priority for us has been to have a Navy that we can sustain.

So in other words, we need a capable, lethal, ready Navy more than we need a larger Navy that is less capable, less lethal, and less ready. And so, unfortunately, the littoral combat ships that we have, while the mechanical issues were a factor, a bigger factor was the lack of sufficient war fighting capability against a peer competitor in China.

And a key factor in the determination was the anti-submarine warfare package that was being developed for those, for the Freedom Class hull that just were ineffective. And so we refused to put an additional dollar against that system that wouldn't match the Chinese undersea threat.

That was a primary driver, sir, in leading us to determine that those ships, relative to others, just didn't bring the warfighting value to the fight. Now, in terms of what are the options going forward with these ships, I would offer to the subcommittee that we should consider offering these ships to other countries that would be able to use them effectively.

There are countries in the Southern, in South America, as an example, as you pointed out that would be able to use these ships that have small crews. And so instead of just considering scrapping as a single option, I think there are others that we can look at, sir.

Senator MORAN. Admiral, I understand the importance of prioritizing. Let me ask, what were those ships doing that will not be done by the U.S. Navy?

Admiral GILDAY. So the new class of frigate that we are building will bring an enhanced anti-submarine warfare capability. The destroyers that we have right now have very capable anti-submarine warfare capability.

So while those were an additional capacity, if you will, in terms of anti-submarine warfare, we do have other capable systems in the fleet, not just on the sea, but also I mentioned the submarines, the quietest submarines in the world, most effective submarines in the world that we are fielding, as well as our P-8 aircraft for a large area, ASW surveillance.

Senator MORAN. Admiral, thank you. And if your team would be interested in having a conversation with me or my team about the suggestion that you made, please pursue.

Admiral GILDAY. Absolutely, yes, sir. Thank you.

Senator MORAN. Thank you.

Senator TESTER. Gentlemen, I want to talk about ship maintenance for a second here. Ship maintenance and the private shipyards is over cost and behind schedule. I will give you a couple of data points. The USS Columbus was \$333 million. To date, Congress has appropriated \$625 million and it is still not back into fleet. In fact, the projected return, two and a half later—two and a half years later than originally projected.

Another one is the USS Boise, a sub that has been idle since 2016. The original overhaul estimate was \$389 million. To date, Congress has appropriated \$1.1 billion. It is now over 7 years delayed. So, Admiral, I can't imagine that you find this acceptable at

all. You have stated that you are going to try to work with shipyards to get this fixed. I mean, we can talk about money, and it is always good to talk about money because there is a cost. But the truth is, if things aren't coming out on time and they are coming out over budget and it is repeated over and over again, that is not a good business model.

And so my question to you is, is have you had the conversation with the industry partners, the private sector folks, what has been their response? Have they made any commitment to clean up the over budget, over time experiences that we have been having, that you have been having?

Admiral GILDAY. Yes, sir. So we have had very pointed discussions with those vendors. We are not satisfied with either cost or schedule. Very dissatisfied, to be honest with you. We have reduced our delay days out of private shipyards from almost 8,000 in late 2019 to just over 3,000 today.

Not satisfied with where we are, but that is where we are trying to go, is to drive those delayed days down to zero, which will keep these ships on budget and within schedule. With respect to the submarine availability, maintenance availability that you mentioned specifically, it has been years since we have done that work in those two shipyards, one being Huntington Ingalls in Newport News and the other, Electric Boat up in Groton. So they are slowly restarting that capability.

We are not in a good place in terms—as you pointed out, sir, in terms of being on glide slope. In terms of what levers do we have to use against industry? One most effective one is withholding payments when they don't meet schedule. Another, if I could go back to the littoral combat ship.

When we had problems with the combining gear on that ship, we refused to accept delivery of any additional ships until it was fixed. So we are trying to do a better job up front and working in our contracts with levers to pull so that we can hold industry accountable.

Senator TESTER. The other thing I would add is if you need additional levers and we can help—

Admiral GILDAY. Yes, sir. Thanks. We would like to work with the committee on other options.

Senator TESTER. I mean, I think the bottom line is this is a team effort. Everybody has to work together. Congress has to be a part of that team to deliver a budget on time, too, I might add. But the bottom line is if anybody is not pulling their weight, it puts everything at risk. Thank you for your—

Admiral GILDAY. Sir, could I mention one thing the committee's done, among others, to help us. So they have actually given us the ability to use 3 year money for maintenance availabilities. We started a pilot in 2020 in the Pacific fleet. We have expanded that to the Atlantic fleet. We have done 55 availabilities now using this 3 year money. Why is that important?

Because it allows us to begin contracts across fiscal years. So the Navy has been in a cadence where we have been closing contracts within 30 days of repairs. Imagine trying to do that in your house when you can't get the right parts, you know, lumber, etcetera.

So our goal now is at least 120 days. We would like to stretch out to a year. Using that 3 year money to do that, gives those re-

pair yards the ability to get long lead parts in time. It gives them the ability to plan to have the right workforce at the right time to conduct that work.

So I think that is an example of how the committee has helped us, and I would appreciate that continue examination of that pilot with your staff so that we can further examine other options.

Senator TESTER. We will continue to exchange information on that, so thank you. Senator Hoeven.

Senator HOEVEN. Thanks, Mr. Chairman. General Berger, the Marine Corps is getting into the MQ-9 business for its, I guess what you would call medium altitude, long endurance, unmanned capabilities. Can you talk to me about what your plan is for MQ-9?

General BERGER. Sir, thanks. We have been flying the MQ-9 initially as a contractor owned, contractor operated, and learning phase for us for the last 2 years in the Middle East. Great learning from the Air Force. It sped up our learning curve and our training of our operators. The next phase for us will be to expand the number of squadrons that we are flying and the number of vehicles that we are buying, and the number of people that need to be trained.

First priority is push them out into the Pacific. So we need to establish an MQ-9 squadron in Hawaii that can then push that ISR coverage, that surveillance coverage more towards China.

And the way to get there at cost, which I mentioned earlier, is the coordination between us and the Air Force, and with the help of this committee to procure ten aircraft that the Air Force was going to procure, we are now going to purchase. So it is a win all around for us.

Senator HOEVEN. That is interesting. So Air Force is not procuring as many. You are moving more into them. How come the disparity there? What is your assessment of that?

General BERGER. Yes, sir. Different missions, different roles, different flight envelopes. Whereas you need a certain kind of capability to penetrate airspace in a very high threat environment, you need a different capability in a more medium threat environment, in a persistent day to day. That is what we need.

Senator HOEVEN. Yes. Mr. Secretary, status on Columbia Class submarine. Obviously, we are very committed to the nuclear triad. In my State, we have two legs, the bombers and the ICBMs (intercontinental ballistic missiles). And so, you know, we are very committed to it, but obviously the submarine is a very important part. What is the status on the Columbia?

Secretary DEL TORO. Yes, sure. Columbia is on track. It is our number one acquisition program. There have been additional expenses that we are assessing now. We have to ensure that it stays on track. To the Chairman's point, we have to make sure that the cost of completion and the schedule completion stays on track.

As a result of that, we are also looking at potential delays to the Ohio program in terms of life extension to make sure that there are no gaps between Ohio and Columbia as well. There are major investments that have been made at Electric Boat. We are working very, very closely with Electric Boat on that and also monitoring the impact that Columbia has on the construction of Virginia as well, too. So it is complicated. We are heavily engaged in that.

Senator HOEVEN. Do you know when Columbia will conduct its first patrol? Has that been——

Secretary DEL TORO. First patrol is around 2028——

Admiral GILDAY. Will deliver in 2028. First patrol in 2031.

Senator HOEVEN. So there will have to be some extensions on Ohio class then.

Secretary DEL TORO. We are looking at potential boat by boat to see what additional extensions are possible in order to provide, you know, the minimum risk to any gap between Ohio and Columbia.

Senator HOEVEN. Right. Admiral Gilday, back to the unmanned. What are your unmanned priorities—for unmanned technologies, what are—we do a lot in our State in unmanned, particularly with Air Force? But what are your priorities in the unmanned?

Admiral GILDAY. Sir, I would tell you that——

Senator HOEVEN. Not the submersible——

Admiral GILDAY. We are pursuing options in the air, on the sea, and under the sea. And so we did the largest unmanned exercise in the world 2 months ago in the Middle East. We had ten different countries, dozens of vendors from across the world, from across the United States, 100 different platforms integrated with AI and software vendors. We are doing a similar big exercise right now based out of Australia.

We are aggressively pursuing how we can put unmanned capabilities in the hands of sailors and Marines today in this 5 year FY DP. At the same time, examining longer term problems for larger unmanned platforms, let's say like missile trucks, large unmanned or minimally manned ships that carry a ton of missiles, right. And so we are looking at land based prototyping.

So we have a reliable engineering plan in those platforms. We have a significant effort ongoing with the other services, specifically the Marine Corps, in command and control infrastructure. So think about the infrastructure of things. We are now talking about the ocean of things and how we plug all that into a system of systems architecture that can actually handle it.

Senator HOEVEN. Well, you know, it is interesting in that you have unmanned in the aviation sphere, in the surface sphere, and in the underwater sphere. Unique in that regard.

Admiral GILDAY. Yes, sir.

Senator HOEVEN. So that is interesting. One of the programs we are working with, I will just mention briefly, is the Sky Range program. So then instead of lining up Navy ships to test hypersonics, we want to do that actually with some of the Global Hawks, Block 20s, and Block 30s. I don't know—have you interfaced with that at all?

Admiral GILDAY. We are doing a ton of work with the Army right now in terms of our first hypersonics weapons. And they will actually field one in 2023. We will field it in 2025, sir. But also, we are working closely with the Air Force as well on an air launch weapon, both in this budget and in my UPL (Unfunded Priorities List), or my UPL as a request for additional money for an air launch hypersonics capability that we can deliver in this FY DP.

Senator HOEVEN. Yes. Thanks to all three of you for all you do. Thanks, Mr. Chair.

Senator TESTER. You betcha. Last summer, there were five sailors that tragically died when their helicopter plunged off the side of the aircraft carrier USS Abraham Lincoln. Media reports indicate the cause of the crash was a damaged hose in the rotor head of the aircraft, which is about \$100,000 item. I think this committee wants to make sure we are providing our warfighters with the necessary funding to ensure that the equipment they are using is adequately maintained. It is pretty basic.

That means getting the necessary spare parts and safety equipment up front, not after something like this happens. For the Navy and the Marine Corps, both of your budgets have included spare parts in their unfunded requirements for fiscal year 2023.

Just curious, but why in the unfunded thing when this seems pretty basic, at least in my perspective, as to making sure that we are keeping folks safe and effective in the field.

Admiral GILDAY. Sir, I will tell you that with respect to those spares accounts, and there is a GAO (Government Accountability Office) report that actually lays out in a lot of detail, it was delivered within the last 6 months, the Navy has underinvested in our spares at sea in order to save money. And so, again, our first priority after Columbia is readiness.

Spare parts are part of that. And so that is why in both our budget, with the Secretary's help, and also in my unfunded list, we are trying to get back to where we need to be. You can't—sir, you can't fool the fleet. You can't fool sailors. They know when they don't have the stuff that they need.

And so in our trips out to the fleet, we have heard loud and clear that supply parts have been a problem. The GAO report confirmed that for us. And so we are trying to make things right with respect to spares.

Senator TESTER. So I am not going to beat you up because you guys got a tough job, but what you just said indicates to me that it shouldn't have been on the unfunded list.

Admiral GILDAY. Sir, it is a valid point.

Senator TESTER. Okay. General Berger, would you like to approach this from a Marine's perspective?

General BERGER. I think it would be—my approach would be to, some of the spares that are listed on our unfunded match the aircraft that are on the unfunded, so they are—part of buying the aircraft is buying the spares to go along with them.

The second part, I would say, is a clear recognition over the past year, year and a half of the fragility of our supply chain system. In other words, not that we can't get the parts today, but it is taking longer and longer, and the sources are getting fewer and fewer. So buying them ahead, as the CNO said, seems prudent going forward.

ADDITIONAL COMMITTEE QUESTIONS

Senator TESTER. Thank you all three for being here. I appreciate your testimony. I appreciate the job you guys do. I appreciate the leadership you provide. I appreciate the answers you give to the questions, too, by the way. Straight up, and I like that. Senators may submit additional questions.

We would ask if you get them, that you respond to them in a reasonable amount of time.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO HON. CARLOS DEL TORO

QUESTIONS SUBMITTED BY SENATOR PATRICK LEAHY

Partnerships with Academic Institutions

Question. During the hearing, you emphasized the importance of partnering with academic institutions to research and develop solutions for the problems faced by the United States Navy. You suggested that continuing to build and expand partnerships is important to naval research and development.

Currently, Norwich University in Northfield, Vermont, works with the National Security Agency as a cyber-institute to address the shortfall of cyber-security experts in the United States. I would welcome the expansion of partnerships between academic institutions in Vermont and the Department of Defense, and specifically the Department of the Navy.

What research and development topic areas is the Navy looking to create academic partnerships in?

How will you develop a diverse group of partners to ensure the Navy has innovative ideas from every corner of America?

Answer. For over 75 years, the Department of the Navy (DON), through the Office of Naval Research (ONR) has built a partnership model with academia to seed new scientific research, harvest new concepts, build new technology and deliver it to the fleet and force. The DON leverages the research, the diversity, the protection of intellectual property, and the open innovation environment that thrives here in the United States' academic community.

Naval research and development topic areas include artificial intelligence, quantum sciences, advanced computing, autonomy, cyber security, advanced networks, hypersonics, alternative fuels, high performance and novel materials, and energetics, to name a few. In addition to the Critical Technology Areas, the DON invests in a number of areas critically important to the Naval mission including ocean and atmospheric sciences, undersea warfare, future naval platform design (including digital engineering), and naval-unique experimentation, training, and readiness.

Naval Postgraduate School (NPS) leads two multi-institutional consortia. One, the Consortium for Additive Manufacturing Research and Education, is a Congressionally-defined organization funded by the Navy's ROT&E budget. External partner organizations include the United States Naval Academy, NAVSEA-05/-08, NAVAIR, the U.S. Marine Corps, the U.S. Coast Guard, and the Defense Innovation Unit. Future partners such as the Lawrence Livermore National Laboratory, the Oak Ridge National Laboratory, the National Aeronautics and Space Administration, the Pennsylvania State Applied Research Laboratory, and Purdue University are also anticipated. The second, the Consortium for Robotics and Unmanned Systems Education and Research, is an Assistant Secretary of the Navy for Research, Development, and Acquisitions-supported organization funded by ONR. Members include individuals from a variety of organizations, such as U.S. Naval Academy, University of Alabama Huntsville, Georgia Tech, Open Robotics, Saildrone, and many others. NPS also recently joined the University Consortium for Applied Hypersonics, led by Texas A&M University. This Consortium has over 100 university members, including Auburn University, Duke University, Georgia Institute of Technology, Howard University, Johns Hopkins, Tuskegee University, University of Florida, Notre Dame University, and many others. NPS currently has three active Educational Partnership Agreements (EPAs) with local institutions, and is in the process of initiating a fourth EPA with Stanford University.

Question. How will you develop a diverse group of partners to ensure the Navy has innovative ideas from every corner of America?

Answer. The Navy has a strategic partnership with universities all over the U.S. to develop technologies for our warfighters. At the University of Vermont, we support a Science, Technology, Engineering & Math (STEM) education effort in Communications, Control, Cybersecurity, and Electromagnetic Sensing Research for Navy Reserve Officer Training Corps. Other areas of research with universities include artificial intelligence, cyber, ocean sciences—including meteorology and acoustics—and materials development. The Navy is continuing to grow partnerships with

Historically Black Colleges and Universities and Minority Serving Institutions (HBCU/MSI) and continuing to establish STEM consortia to foster the next generation of scientists to continue development of technologies for our fleet and force.

Naval Postgraduate School (NPS) recently established a graduate STEM Scholarship for Service program for HBCU/MSI graduates through support from the Office of the Under Secretary of Defense, Director of Defense Research and Engineering, Science and Technology. The initial pilot program is being coordinated with NAVWAR and will commence in July 2023. This will provide a pathway for HBCU/MSI graduates into the Department of the Navy and Department of Defense STEM workforce through early immersion into Defense-related problems while simultaneously developing relationships with operationally experienced NPS warrior-scholars. During their time at NPS, these young academics will have fleet engagement opportunities while also bringing their own diverse perspectives into the national security discussions.

QUESTIONS SUBMITTED BY SENATOR DIANNE FEINSTEIN

Question. The National Defense Strategy prioritizes deterring, and if necessary prevailing in, a conflict in the Pacific. A sustained conflict there would require the Navy to dramatically increase ship repair and construction. However, our shipyards do not have capacity to spare. If the Navy simply builds more dry-docks for use during peacetime, then it will displace industry investment and capacity and result in no additional surge capacity. How are you preparing to meet wartime requirements for ship repair and construction without undermining industry's incentives to invest in its own infrastructure?

Answer. The Navy closely monitors and manages the health of the maintenance industrial base as a vital asset to the readiness of our surface fleet and national security. The principal mechanisms of monitoring include assessment of publicly and privately shared financial information, tracking of contract awards, and analysis of shipyard workload data. This data will be instrumental in continued monitoring of the health of our national ship repair industrial base through the implementation of Navy-owned dry docks for use in the execution of CNO maintenance availabilities. In aggregate, the availability of Navy-owned dry docks for use by the private sector increases maintenance capacity within the respective surface homeports. Since 2018, the Navy has certified two private sector dry docks in support of the maintenance and repair of the surface fleet. Currently there are three additional dry docks in procurement or re-certification and one in planning. These future dry docks represent a combination of private sector, Navy, and joint investments to meet the needs of the surface fleet, providing required peacetime and wartime capacity and capability.

QUESTIONS SUBMITTED BY SENATOR BRIAN SCHATZ

Red Hill

Question. The Navy waived its right to contest the most recent Hawaii's DOH-issued emergency order on the defueling and closure of the Red Hill storage facility. The DOH emergency order requires the Navy to provide a plan to defuel by June 30th and a plan for closure by November 1st.

How does the Navy plan to comply with the emergency order without an appropriate cost estimate? What steps are you taking to ensure the Navy successfully completes this process on schedule?

Answer. The defueling plan that the Department of Defense (DoD) delivered to the State of Hawaii Department of Health (DOH) on June 30, 2022, expressly acknowledges the iterative nature of the planning process. The Department of the Navy (DON) will support the DoD's efforts to refine the universe of actions required to enable defueling (phase two of the plan) through the end of August, incorporating the results of ongoing assessments, including the Naval Facilities Engineering Systems Command's assessment of piping infrastructure at the Red Hill Bulk Fuel Storage Facility. The DoD will be in a better position to estimate the cost of defueling when we have identified the full scope of the repair effort.

Closure planning is in the early stages. Costs associated with closure are largely, and necessarily, undefined.

The DoD and the DON are engaged in a sustained effort to ensure that defueling and closure proceed as expeditiously as possible, consistent with the objectives of safety and protection of the environment. Since the "meet and confer" session with DOH on May 20, 2022, representatives of the DoD, DON and DOH have had regular

discussions regarding defueling. In the defueling plan, the DoD announced its intent to establish a Joint Task Force Red Hill, under the leadership of a commander who will report to the Secretary of Defense through the Commander, U.S. Indo-Pacific Command, to ensure strong command and control that will facilitate successful planning and implementation of defueling.

Question. How does Secretary Austin's assessment on the redistribution of the Red Hill fuel reserve best support the Warfighter and do you agree with his assessment?

Answer. The realignment of fuel reserves for Department of Defense (DoD) operations in the Pacific theater supports the warfighter while protecting the people of Hawaii, our military families, the environment, and the security of the nation. Redistributing the DoD's fuel reserve across the Indo-Pacific will better position the United States to meet future challenges in the region and will support the National Defense Strategy objective to build a resilient Joint Force and defense ecosystem.

Question. It has been brought to my staff's attention that 8–10 percent of the \$1 billion President's Budget Request for Red Hill will supposedly be going to RDT&E. Which DoD directorate will serve as the lead to manage this account?

Answer. The \$1 billion was requested in a Department of Defense budget line, so I must defer to the Office of the Secretary of Defense to provide those details.

Defense Community Resilience

Question. Most of the 4,000 military installations nationwide are surrounded by communities that are tightly linked to their military neighbors. These "defense communities" are home to Service Members, DoD civilians, and their families, but we have paid less attention to potential critical infrastructure failures in these communities—whether from manmade or natural disasters—and their impact on national security. The Navy recently released its new climate action strategy and directly calls out the need to work with community stakeholders in infrastructure resiliency.

Can you explain how the Navy plans to engage with State, local, Tribal, territorial, Federal community leaders and why the Navy believes this the best approach to build infrastructure resiliency?

Answer. The Readiness and Environmental Protection Integration (REPI) Program assists in preserving military missions by limiting or alleviating encroachment threats that could adversely affect Department of Defense (DoD) installations, to include incompatible development, endangered species restrictions, and habitat loss. Additionally, climate change and extreme weather events ranging from severe flooding to catastrophic wildfire are an increasing threat to DoD training lands, infrastructure, and public safety. To reduce risks to installation and range operations from changes in environmental conditions, the REPI program is now able to fund off-base natural infrastructure projects, known as REPI Resilience Projects, in addition to more traditional REPI projects that typically occur within Navy property boundaries. The Navy has taken advantage of this new authority and has initiated several resilience projects. Examples include:

- Naval Weapons Station (NWS) Earle, in coordination with Monmouth County, is purchasing conservation easements that preserve critical nearby wetlands and secure the base's sensitive drinking water supply from over-withdrawal and saltwater intrusion;
- NWS Yorktown is constructing 2,000 linear feet of shoreline protection structures to help prevent erosion and support oyster restoration efforts, building resiliency to hurricanes and other high water events;
- Naval Submarine Base Kings Bay is acquiring restrictive-use easements on over 16,000 acres of land and carrying out wildfire management and restoration activities to prevent incompatible development, conserve and restore habitat, and improve wildfire resilience; and
- Naval Air Station Oceana has initiated deliberate outreach activities to local municipalities to explore shared planning interests as Oceana works to enhance and refine its base design.

We coordinate with service providers when planning and conducting various exercises—to include complete, base-wide power failures—in order to identify and prioritize issues requiring mitigations and develop prioritized restoral plans and prioritized refueling plans for emergency power systems. This requires coordination with local communities as they would also be attempting to restore services, refuel emergency power systems, provide emergency response and transport, and respond to their constituents' needs.

Intergovernmental Support Agreements enable us to work with communities to build and maintain resiliency in shared infrastructure.

Question. How could failures in critical infrastructure within these defense communities negatively impact readiness?

Answer. Installations rely on the long-term support provided by commercial/public utility organization located off-installation. The Navy increases mission resiliency by building in redundancy for critical systems, but none of this is intended for long-term use. Requirements for items such as power, water, sewage, and fuel are routinely sourced from the local community, and if these services suddenly become unavailable, the effects on mission accomplishment/recovery can be devastating after just a few days. Roads, railways, and communications pathways are all utilized to enable mission success and could impact mission readiness should they be lost.

Question. Would it benefit national security to: (1) assess these risks; and (2) work more closely with State, Tribal, and local officials so defense community leaders can make more informed resilience planning decisions?

Answer. Yes, and much of this work is on-going today. The Navy conducts mission assurance assessments, capturing capability gaps and system failure points, which provide a starting point for cooperative analysis and mitigation identification and resolution with the local providers. Installation representatives meet with service providers to discuss how they can work together in achieving mission resilience. We then work with the provider, within authorized limits, to ensure mitigations are put in place and mission resiliency is achieved.

Pacific Deterrence Initiative (PDI)

Question. Expanding our presence in the Indo-Pacific heavily relies on investments made in infrastructure, responsiveness, and resilience throughout the region.

What additional logistical capabilities does the Navy need to effectively respond to crises—both defense and humanitarian—in the Indo-Pacific?

As China is the “pacing threat,” and given the vast expanse of the Indo-Pacific, can you explain how the Navy’s budget request addresses the challenge of contested logistics?

Answer. The Navy is seeking to improve logistical capabilities in the following areas:

- Distributed Maritime Logistics Capability and Capacity.
- Naval Logistics Enterprise (NLE) Command and Control (C2).
- Strategic Sealift Readiness.
- Platform Command, Control, Communications, Computers, and Intelligence (C4I)/Cyber Readiness and Resilience.
- Battle Damage Recovery, Repair, and Revive Capability and Capacity.
- Expeditionary Infrastructure and Logistics Posture.
- Afloat Logistics Force Survivability.
- Rapid Delivery of Scalable Medical Capabilities.
- Intra-theater Air and Surface Distribution Platforms, including Consolidation Cargo (CONSOL) Certified Tanking.
- Afloat Warehousing and At-Sea Trans-Loading.

Additional details can be provided in a classified forum.

Question. As China is the “pacing threat,” and given the vast expanse of the Indo-Pacific, can you explain how the Navy’s budget request addresses the challenge of contested logistics?

Answer. The Navy’s PB23 budget request seeks to improve readiness and warfighting capabilities, including contested logistics requirements. Through detailed analysis, the Navy identified resources needed to address recognized gaps in our capability and capacity. The PB23 budget requests resources to continue to make investments to address those challenges, such as:

- Funding for executing a vigorous analytic campaign, including wargames, studies, and experiments to collect data and lessons learned in support of future contested logistics capabilities.
- Research, Development, Testing and Evaluation (RDT&E) funding to continue efforts on the fielded operational prototype for a Seabased Petroleum Distribution System, as well as continued procurement of mobile consolidated cargo (CONSOL) adapter kits (MCAK) for rapid installation aboard commercial oil tankers as an alternative means of pumping fuel to combat logistics force (CLF) ships supporting replenishment at sea.
- Continued procurement of the Navy’s Fleet Oiler, T-AO 205-class ship, which has improved cargo fuel and freeze/chill stowage capacities over the T-AO 187-class ships being replaced. This increased capacity improves CLF support to distributed forces.
- Continued RDT&E funding for the Next Generation Logistics Ship (NGLS) concept which provides a flexible, responsive platform to move fuel, equipment, and supplies between ships, advanced bases, ports, and dispersed nodes of the sea base.

- Continued RDT&E funds for the Light Amphibious Warship (LAW) concept which enables distributed maneuver and logistics to fill the gap in capability between the Navy’s large, multipurpose amphibious warfare “L” class ships and smaller landing craft.
- Continued funding for the development of the Improved Modular Cargo Distribution Station (IMCDS) will enable commercial freighter vessels to conduct underway replenishment of palletized cargo, providing options to increase the capacity and flexibility of intra-theater distribution networks.
- Funding to support the repair, resupply, and rearm capability of Pacific Fleet submarines with the recapitalization of two EMORY S. LAND class submarine tenders, with the procurement of two hulls in the Future Years Defense Program (FYDP).

USMC Energy Resiliency

Question. Marine installations are transitioning to an electric vehicle fleet and the use of smart grids as a power source.

When can Marine installations in Hawaii expect functioning electric vehicle chargers and photovoltaic panels?

Answer. Marine Corps Base Hawaii (MCBH) currently has functioning electric vehicle chargers for fleet vehicles, including two Beam Electric Vehicle (EV) Arc stations, which are rapidly deployable, transportable, solar, off-grid, and resilient EV supply equipment charging capability. MCBH currently has functioning photovoltaic panels, including Marine Corps-owned and third-party owned rooftop and carport systems, totaling over 2.8 megawatts. MCBH ordered an additional two Beam EV station this year to support additional vehicles. The planned General Services Administration lease of four EV trucks in fiscal year (FY) 2022 was canceled due to manufacturer supply chain delays, so the procurement of those vehicles is planned for fiscal year 2023. MCBH is also requesting approval for ten additional EVs to replace current gas-powered vehicles.

Question. How do both services conduct energy resilience readiness exercises?

Answer. The Marine Corps Energy Resilience Readiness Exercise (ERRE) program provides a framework for Marine Corps installations to build the capacity to execute ERREs through an iterative learning approach incorporating table top, intermediate-level, and full-scale exercises in accordance with established guidance published by the Office of the Secretary of Defense. ERREs test mission continuity of operations plans, utility emergency response plans, infrastructure configuration, and equipment condition as well as an installation’s resilience to conduct critical and essential missions while disconnected from the commercial power grid. The Marine Corps ERRE program requires engagement between mission owners, installation leadership, public works, and other key stakeholders to identify and mitigate risks to future operations in the event of a prolonged outage, while balancing the demands of current operations.

Climate Change Resiliency

Question. It is clear that our defense strategy in the Indo-Pacific will require the U.S. to operate much further forward and in a dispersed fashion in what will be a theater of contested logistics, with requirements for additional logistic capability, including pre-positioned logistics further into the theater and enhanced collaboration with the COFA nations and other Pacific island states. The role of security cooperation in addressing the risks to allies and partners from climate change is unclear at best. The DoD Climate Risk Analysis (CRA) states that “DoD will integrate the security implications of climate change into key strategic documents, programs, and international partner engagements”, and lists “Security Cooperation Programs” as one of the “Partnered Activities” to address climate risks. But the security cooperation programs under chapter 16 of title 10, U.S. Code are not listed among the “specific tools, funds, and programs” for supporting allies and partners address climate risks listed in Appendix 2 of the CRA.

Do the provisions of chapter 16 of title 10, U.S. Code governing the DoD security cooperation enterprise include the authority to provide assistance to allies and partners on climate security and climate adaptation?

Answer. This question is best answered by the Office of the Secretary of Defense for Policy. However, it is my understanding that there is not an authority under Chapter 16 of Title 10 that specifically authorizes the Department of Defense (DoD) to provide assistance to allies and partners for climate security and/or climate adaptation. However, the DoD did request, in a fiscal year (FY) 2022 legislative proposal, an amendment to 10 U.S.C. 333 that would provide the DoD with additional authority to enhance the resilience and disaster preparedness of our allies and partners, including with respect to climate adaptation challenges.

In the absence of new authorities or additional resources, the DoD may be able to leverage Section 312, “Payment of personnel expenses necessary for Theater Security Cooperation,” to support climate-related conferences and events with certain countries. Section 321 may likewise enable the DoD to support certain training and exercise expenses with allies and partners related to climate change preparedness. However, the use of these authorities, as well as those relating to the State Partnership Program and/or DoD Regional Centers, comes with significant caveats, are subject to Department legal guidance, and are unlikely to be equal to the scale of the challenge that climate change poses to our allies, partners, and the wider international security environment.

Question. What authority, if any, in chapter 16 or otherwise, does DoD have to assist in and/or contribute to the cost of military construction necessary to ensure the climate resilience of the military installations, airports, and seaports of allies and partners that are now and will increasingly become more critical to dispersed operations and logistics in the Indo-Pacific and globally?

Answer. This question is best answered by the Office of the Secretary of Defense for Policy. However, it is my understanding that the Department of Defense (DoD) possesses only limited authorities to contribute to the cost of military construction necessary to ensure the climate resilience of allied and partner facilities and installations. The DoD has authorities to support small-scale construction projects for exercise-related construction and disaster risk reduction through the Overseas Humanitarian, Disaster, and Civic Aid program.

Question. Would ensuring that DoD has or is provided such authorities enhance the ability of DoD to work with allies and partners on shared climate security risks, and for DoD to remain the “partner of choice” among our allies and partners for such assistance?

Answer. The Department of the Navy will continue to support the Department of Defense in promoting a robust dialog on the authorities needed to work with allies and partners to tackle shared climate security risks and increase partnerships.

Question. Climate change is a global issue. How are we prioritizing international climate cooperation with partners and allies?

Answer. The 2022 National Defense Strategy recognizes that global climate change is transforming the context in which the Department of Defense operates and that mutually-beneficial alliances and partnerships are an enduring strength for the United States.

The Department of the Navy is working with allies and international partners to integrate climate into security cooperation and affirmatively build climate resilience in areas of the world that are most susceptible to climate-induced conflicts, humanitarian disasters, or acute climate impacts such as water and food insecurity or migration pressures. The newly-released Department of the Navy’s Climate Action 2030 has a dedicated line of effort to “Enhance mitigation and adaptation through collaboration,” which includes security cooperation activities.

Climate Strategy and Defense Communities

Question. The “Climate Action 2030” document calls for extensive collaboration with others in the public and private sectors on actions both on and off Department of the Navy installations to advance climate resilience of both those installations and key supporting civilian infrastructure and defense communities, and also to leverage natural infrastructure for carbon sequestration. That document also highlighted that “the DON has prioritized climate investments in the budget review and approval process, including a team dedicated to assessing and prioritizing additional climate change investments. The DON is working with the Office of the Secretary of Defense to refine and standardize this analysis and guidance for climate investments in future budget submissions.”

What specifically in the fiscal year 2023 PBR for DON at the program and line item detail level addresses DON funding for planning, projects, staff and other resources related to:

- Collaboration with non-DoD public and private entities for these purposes under the Readiness and Environmental Protection Integration (REPI) program;
- Military installation resilience programs administered by the Office of Local Defense Community Cooperation;
- “Off installation” resilience projects under 10 USC 2815, as amended by the fiscal year 2021 NDAA;
- Actions under the Defense Access Roads authority in 23 USC 210, as amended in the fiscal year 2019 and 2020 NDAAs, to enhance the climate resilience of key access roads to DON installations;
- Actions on and outside DON installations to manage storm water, under 10 USC 2815a, as added by the fiscal year 2022 NDAA;

- Actions to include the “military installation resilience component” to installation master plans for DON installations, and to ensure that these also address actions “outside the fence line”; and
- Supporting INDO-PACOM in its engagement with allies and partners in the Indo-Pacific AOR on climate resilience.

Answer. The Department of the Navy (DON) is committed to advancing the climate resilience of our installations and supporting civilian infrastructure in defense communities. We are continuing to examine authorities, funding and partnerships that can be leveraged to build a climate ready force and working to best account for climate-related efforts in future budget submissions.

Details on the fiscal year (FY) 2023 President’s Budget Request (PBR) for planning, projects, staff, and other resources related to specific authorities and programs/initiatives are:

- Collaboration with non-Department of Defense (DoD) public and private entities for these purposes under the Readiness and Environmental Protection Integration (REPI) program;

The Readiness and Environmental Protection and Integration program is administered by the DoD. The DON works internally and externally with non-DoD public and private entities to develop projects for submittal and evaluation by DoD for REPI funding. The DON does not track the specific funds used for the planning and staff that support the DON’s participation in the REPI program; that funding is embedded in the BSS1 line item.

- Military installation resilience programs administered by the Office of Local Defense Community Cooperation (OLDCC);

The OLDCC administers the Military Installation Sustainability Program (MIS) on behalf of the Department of Defense. The MIS is designed to provide technical and financial assistance to states and local governments to analyze and implement actions necessary to foster, protect, and enhance military installation sustainability. The DON does not track the specific funds used for the staff time to provide technical support to states and local governments by providing input on their compatible use or military installation review plan; that funding is embedded in the BSS1 line item.

- “Off installation” resilience projects under 10 United States Code (USC) 2815, as amended by the fiscal year 2021 National Defense Authorization Act (NDAA);

The fiscal year 2023 PBR does not currently include any specific funding for resilience actions funded under this existing authority. The DON continues to evaluate resiliency requirements for use and execution under this authority.

- Actions under the Defense Access Roads authority in 23 USC 210, as amended in the fiscal year 2019 and 2020 NDAA, to enhance the climate resilience of key access roads to DON installations;

The fiscal year 2023 PBR does not include specific funding for actions under the Defense Access Road 23 USC 210. The DON continues to evaluate resiliency requirements for use under this authority.

- Actions on and outside DON installations to manage storm water, under 10 USC 2815a, as added by the fiscal year 2022 NDAA;

Due to the timing of the development of the fiscal year 2023 PBR relative to the signing of the fiscal year 2022 NDAA, the fiscal year 2023 PBR does not include specific funding for actions under this new authority. However, the Department is examining projects that could be funded utilizing authorities added under 10 USC 2815a during the year of execution.

- Actions to include the “military installation resilience component” to installation master plans for DON installations, and to ensure that these also address actions “outside the fence line”; and

The DON is incorporating a resilience component and addressing “outside the fence-line” actions as we update installation master plans; that funding is embedded in the BSS1 line item.

- Supporting INDO-PACOM in its engagement with allies and partners in the Indo-Pacific AOR on climate resilience.

The DON is incorporating climate resilience into infrastructure investments in the United States and across the world, including in the Indo-Pacific Area of Operations. However, the DON does not track the specific funds used for the planning, projects and staff associated with those efforts; that funding is embedded in the BSS1 line item.

DON Climate Resilience with Allies and Partners

Question. The Secretary of Defense has stated that the aim of the United States is to “be the partner of choice” for our allies and partners in the Indo-Pacific AOR

and globally. In a 2021 survey of the Association of Southeast Asian Nations members' greatest fears, the threat of climate change outranked the threat of military conflict in the region by almost 10 points. The DoD Climate Risk Analysis states that "In the Indo-Pacific, sea-level rise and more extreme weather events complicate the security environment, place key DoD warfighting infrastructure and surrounding communities at risk, and challenge local capacity to respond. For example, the United States has important defense assets located in Guam, the Marshall Islands, and Palau, all of which are vulnerable to these hazards. Additionally, competitors such as China may try to take advantage of climate change impacts to gain influence."

China is in fact increasingly seeking to displace the U.S. as the "partner of choice" in the Indo-Pacific and among the Pacific Island Nations, including in the context of providing assistance related to climate change. It is clear that our defense strategy in the Indo-Pacific will require the U.S. to operate much further forward and in a dispersed fashion in what will be a theater of contested logistics, with requirements for additional logistic capability, including pre-positioned logistics further into the theater and enhanced collaboration with the COFA nations and other Pacific Island States.

The DON is tasked with providing administrative support to INDOPACOM. In the fiscal year 2022 Defense Appropriations Act, DON was provided \$50.17 million in O&M funding for the INDOPACOM mission partner environment program, and an additional \$5 million to partner with USFS in support of international programs that support national security priorities related to the destabilizing effects of extreme weather conditions.

What specific funding, if any, is included in the fiscal year 2023 DON PBR for supporting the efforts of INDOPACOM to work with allies and partners in the INDOPACOM AOR on climate resilience?

Answer. Mission Partner Environment (MPE) is not related to climate change. MPE provides a common information infrastructure across the theater with critical data nodes that provides the standards and protocols for all United States', allies', and partners' needs in the region. The data/information-centric warfighting environment will expand application service center capacity by 33 percent, which includes 300 percent increase in compute and store, as well as 100 percent increase in system resilience, while expanding user base by 40 percent, and achieves the following:

- Increases/expands capacity and access of the application service centers to:
 - Conduct large scale operations
 - Joint/Coalition targeting and synchronized fires
 - Real time access to Command and Control (C2) information and nodes at the tactical edge
- Provides multi-domain delivery and access via single device for improved efficiency
- Provides path diversity for continuous C2 and information sharing in a denied, degraded, intermittent, and limited bandwidth environment.

In fiscal year (FY) 2022, USINDOPACOM did receive the \$5 million to partner with the United States Forest Service and is also allocating \$300,000 to climate change.

In fiscal year 2023, USINDOPACOM expects to execute \$600,000 to continue its work on climate change.

QUESTIONS SUBMITTED BY SENATOR SUSAN M. COLLINS

Trajectory of the U.S. Navy Fleet Size

Question. There has been a lot of discussion in your recent hearings about the trajectory of the U.S. Navy fleet size. It is a serious deficiency that the budget request would actually shrink our fleet to 280 ships by 2027. That is the very year that GEN Milley and others have identified as a critical window with respect to China likely obtaining the capability to invade Taiwan. Our fleet would be significantly smaller than China's, which will have 420 ships by 2025, and unlike China our Navy is heavily dispersed all around the world.

Even in the most ambitious shipbuilding scenario detailed in the 30-year shipbuilding plan, we wouldn't hit 355 ships until 2043. In the two other budget-constrained scenarios, we never get to 355 ships even out to 2052.

During this critical time-frame with regards to China's capabilities, why is the Navy accepting risk by requesting a fleet significantly smaller than the size called for in the multiple recent fleet assessments conducted across several administrations?

Answer. The new era of strategic competition requires a modernized, capable, global, forward, and multi-domain Navy. In the fiscal year (FY) 2023 budget, the Navy prioritized promising technologies that need to be fielded quickly and at scale to be operationally relevant in the coming years to ensure that the Navy meets Joint Force operational requirements and made difficult choices to divest of ships that do not meaningfully support warfighting requirements. The President's Budget Request 2023 only grows warfighting capacity at a rate supported by the fiscal guidance and our ability to sustain that capacity in the future. Consistent with the Defense Planning Guidance, this plan does not resource any capacity beyond what can be sustained with regards to manning, training, operations, and future modernization. Additionally, the Navy is limited by the capability of industry to produce the ships currently planned and on order in a timely manner. Within the Future Years Defense Plan, this careful prioritization in the near-term, in accordance with the Interim National Security Strategic Guidance and National Defense Strategy, will result in a Navy battle force that is more ready, sustainable, and lethal.

Dry Dock #1 at Portsmouth Naval Shipyard

Question. Dry Dock #1 at Portsmouth Naval Shipyard is an important part of the SIOP and the \$500 million requested in the budget for the next increment of funding is vital to ensuring our *Virginia-Class* submarine fleet can operate decades into the future.

Given the recent GAO report on the SIOP finding major issues with the Navy's cost estimates, what is the Navy doing to ensure important projects like the one at PNSY stay on track?

Answer. For new and on-going projects in construction, the Navy has and will continue to create dedicated construction offices on site headed by a senior Civil Engineering Corps Officer. These offices are fully staffed to leverage key performance indicators, formal partnering, shared construction management software, and a decision elevation matrix to identify and mitigate cost and schedule risks early on. These tools and trained leadership ensure the projects stay on track.

For projects in planning and design, the Navy is continuing to improve assurance of Shipyard Infrastructure Optimization Program (SIOP) costs and schedule targets by extrapolating data and methodology from ongoing projects to those in design and acquisition. The Navy is incorporating industry best practices for mega projects. This includes emphasis on developing designs earlier; greater awareness of means, methods, and constructability from early contractor involvement; third-party estimates for selected projects; real-time cost and schedule risk management; and early contract award of key critical path contract enablers.

In addition, the Navy is establishing an Acquisition Strategy (AS) and Acquisition Program Baseline (APB) documents for each shipyard. The AS and APBs will be the guiding documents for managing SIOP program execution, and the APBs will establish threshold and objective parameters for the overall cost, schedule, and performance of SIOP execution at each shipyard.

QUESTIONS SUBMITTED BY SENATOR LISA MURKOWSKI

Arctic Maritime Presence

Question. As warming increases in the Arctic region, sea ice coverage is decreasing. As such, waters are becoming more navigable, and maritime traffic is increasing, especially in the Bering Sea and North American Arctic. What was once a formidable and isolated region is rapidly populated with commercial and military traffic. As this traffic continues to steadily increase, the U.S. must have a strategy for increasing our Arctic maritime presence. In particular, the Bering Strait is a critical choke point for Arctic shipping and transport representing the only gateway from the Arctic to the Pacific. While it's narrow in size, it's big in importance and the U.S. must be prepared to and have the capabilities to ensure it remains free, open, and secure.

What are the requirements for the Navy to establish a persistent, year-round presence of the Navy in the U.S. Arctic region in order to deter aggression and protect our homeland?

Answer. The Navy routinely operates in the Arctic and High North in support of the Arctic Blueprint's objective of maintaining enhanced presence and in support of the National Defense Strategy's objectives of managing competition and deterring threats to the U.S. homeland. While the Navy does not currently have any requirements to establish a persistent, year-round presence in the U.S. Arctic region, the Navy does recognize the need to continue to assess our force posture requirements,

factoring in allied contributions, to meet the unique and evolving requirements of the Arctic Region.

Question. Based on current capabilities and mission requirements of the U.S. Navy, could the United States be denied access to or through the Bering Strait?

Answer. Specific discussions on countering potential threats to the Bering Strait must be held at a higher classification level.

Question. What actions would need to be taken by the Department of the Navy to prevent such scenarios from occurring and how would the Navy respond to such scenarios if they were to occur?

Answer. To defend the homeland, ensure the global commons remain free and open, and maintain a favorable balance of power, the Department of the Navy conducts various activities year-round in the High North and Arctic alongside the joint force, other agencies, and allies and partners. Specific discussions on countering potential threats to the Bering Strait must be held at a higher classification level.

Arctic Presence

Question. It is imperative we keep a watch over Russian and Chinese movement in and near the Arctic—especially near America’s Arctic. As a nation, we have grown increasingly concerned over ceding ground to Russia and China in the Arctic, as both countries are outpacing the United States in the construction of icebreakers. It is also imperative we have the ability to increase our presence in the Arctic region for if and when we need to be there, yet we lack much of the infrastructure required to operate there. For example, the runway at what was formerly Naval Air Facility Adak has been operating commercially since 1997 and could serve as a viable location for P8 Poseidon aircraft to base from. To do so however, improvements to the runway would likely need to be made. Previously, the Secretary of the Navy stated that the airstrip on Adak is in “great shape” and the Navy would only need to clean up one of the hangars in order to resume operations. Additionally, the Port of Nome received \$250 million as part of the recent bipartisan infrastructure bill and the port will soon begin to take shape. Various military services, to include the Department of the Navy have expressed interest in utilizing a port in America’s Arctic to conduct operations.

Is it possible to deploy P8 Poseidon to Adak, Alaska for emergency operations; to support episodic operations such as exercise support; to deploy seasonal rotations of aircraft, and/or permanent basing?

What is the Navy currently doing to ensure Adak is an operable location to base resources?

What infrastructure developments are needed to resume full time and part time naval air operations at Adak, Alaska to accommodate the use of the P8 Poseidon or other aircraft?

Has or will the Department of the Navy consult with the Chief of Engineers of the Army Corps of Engineers to ensure that the Port of Nome is usable for the implementation of the Arctic strategy of the Department of the Navy, as described in the strategic blueprint for the Arctic of the Department of the Navy entitled “A Blue Arctic?”

How does the Navy anticipate utilizing the Port of Nome on a full-time, part-time, and emergency basis? Please describes the requirements necessary to establish a persistent, year-round presence of the Navy at the Port of Nome. To the greatest extent possible, please provide an estimated cost of implementing the requirements at the Port Nome taking into account the establishment of onshore infrastructure required to support year-round maritime operations in the vicinity of the Bering Sea and the Arctic region.

Answer. The Navy has established an Arctic Alignment and Integration Working Group, and one of the items assessed is infrastructure. The analysis conducted by the working group has not identified any resourcing or infrastructure requirements in Alaska.

While it is possible to deploy P8 Poseidon aircraft to Adak, with significant investments in support and infrastructure, there are no current plans for the U.S. Navy to reopen the base at Adak.

The U.S. Navy has evaluated costs for a port at Nome, however, there are currently no plans to pursue U.S. Navy-led infrastructure projects at Nome, consistent with the draft Office of the Secretary of Defense report to Congress on the subject.

ICEX Storage Space/Plans

Question. The Navy conducts its Ice Exercise (ICEX) every other year in Arctic Alaska. In past years, the Navy has used non-government facilities to forward deploy and preposition equipment to support the exercise. With increased traffic in the

region comes a greater demand for infrastructure. As such, much of the space used by the Navy to store equipment is being taken up far in advance.

What is the Navy's long-term plan to secure storage space to support its ICEX operation?

Does the Navy plan to build any structures to support its exercises and operations in Alaska?

Answer. The Navy has established an Arctic Alignment and Integration Working Group, and one of the items assessed is infrastructure. The analysis conducted by this group has not identified any resourcing or infrastructure requirements in Alaska.

QUESTIONS SUBMITTED TO ADMIRAL MICHAEL GILDAY

QUESTIONS SUBMITTED BY SENATOR PATRICK LEAHY

Aviator Physiological Response to Flight

Question. The strains of flying high-performance aircrafts are universal for service members in all branches of the military. Physiological events while flying are some of the most dangerous to crew and aircraft, and stresses experienced by the body in flight can have long lasting effects on individuals.

In Vermont, our Air National Guard pilots prepare for the strains of flight in an F-35A through a program called the Optimizing Human Weapon System (OHWS). The OHWS programs prepare pilots for the physical demands of flying and treats injuries resulting from flying to reduce the occurrences, longevity, and severity of flight-related injuries among their pilots.

How do you prepare Naval Aviators for flight and treat injuries resulting from flight?

Answer. "How do you prepare Naval Aviators for flight . . . "

The training and preparation that all Naval Aviators participate in is comprehensive. It is required prior to flight events in flight school and is repeated and reinforced throughout their careers. Naval Aviators are required to complete the Naval Aviation Survival Training Program (NASTP) prior to entering a flight status and every 4 years thereafter. This training includes aviation physiology, acceleration physiology, aviation life support systems, water survival training, ejection seat training, and centrifuge flight environment training as needed.

CNAF Level A Annual Aeromedical Training is completed prior to entering a flight status and annually thereafter. This includes ejection seat training, egress training, sensory physiology/situational awareness, laser eye protection, high performance high altitude physiology, gravity tolerance improvement program, aviation life support systems, and survival radios.

Further training includes CNAF Level B Deployment briefs to include first aid/self-aid/buddy aid, stress and human performance, environmental stressors, Combat Survival Evader Locator (CSEL), and chemical, biological, radiological (CBR) defense.

The training curriculum for U.S. Navy (USN) and U.S. Marine Corps (USMC) student pilots is identical throughout flight school, varying only between type aircraft (i.e. rotary wing, jet, multi-engine, etc.) in the different phases of flight training, and not by service. After students successfully complete flight school, they are designated "Naval Aviators" and are selected to fly a specific Type, Model, Series (T/M/S) aircraft in either the USN or USMC inventory. At that time, USN and USMC Naval Aviators report to service and T/M/S specific training squadrons to learn the fundamentals particular to that aircraft's mission areas.

Question. How do you . . . treat injuries resulting from flight?

Answer. Both the U.S. Navy and Marine Corps utilize the same resources to treat and address injuries resulting from flight and flight-related MISHAPs. Naval Aviators have medical resources and personnel available to them within their units, on-board aviation ships (e.g. CVN, LHD/A), Naval Air Stations, and higher headquarters. United States Naval Flight Surgeons and Corpsmen as well as Aerospace Physiologists are available to all aircrew and are trained in diagnosing and treating injuries related to flight duties and/or performing aforementioned training. Navy Aerospace Medicine is capable of treating flight related illnesses and returning aviators to full duty. This is accomplished by leveraging additional Navy Medicine assets through the Bureau of Medicine (BUMED) and the Defense Health Agency (DHA) when required. Both USN and USMC also leverage the same Safety Management Systems to mitigate, report, and learn from injuries resulting from flight and flight-related MISHAPs.

Question. How does the Navy monitor the physiology of aviators in flight?

Answer. The Navy and Marine Corps do not currently have a program of record to monitor the physiology of Naval Aviators in flight. However, USN and USMC efforts are underway, spearheaded by the Department of the Navy's aviation life support systems program office, to field a product to monitor the physiology of aviator's in flight.

A Cooperative Research and Development Agreement (CRADA) has resulted in a partnership with private industry to develop an "in-mask" sensor to collect in-flight physiological data from aviators. Thirty (30) "in-mask" devices will be fielded to the T-45 community beginning the week of 25Jul22. Data collection will continue for eight (8) weeks and be conducted at both NAS Kingsville and NAS Meridian. Data analysis and trend identification will continue through fiscal year 23-1 and will inform future helmet, mask, and regulator program requirements.

Question. What procedures could be improved to better share across the branches of the military best practices for preparation and treatment for the demands of flight?

Answer. The U.S. Navy and Marine Corps will continue to work together making improvements to our current Safety Management Systems. Specifically, we will continue to document training, investigate MISHAPs, report causal factors, and share lessons learned. These efforts will be shared across services via the web-enabled Risk Management Information (RMI) reporting and analysis system.

The services will continue to target emergent issues related to physiological episodes in flight by sharing expertise, lessons learned, and product developments generated from teams such as the U.S. Air Force's 711th Human Performance Wing, the Naval Safety Command's Physiological Episode Action Team (PEAT), and the Navy's Human Systems Engineering Department (HSED).

Continue to develop and implement the Naval Aircrew Conditioning Program to leverage best practices and lessons learned from the U.S. Air Force's OHWS and USA Holistic Health & Fitness (HHF) programs. These programs utilize state of the art industry practices and focus on injury prevention, rehabilitation therapies, and increasing aircrew physiologic margin.

QUESTIONS SUBMITTED BY SENATOR BRIAN SCHATZ

Fuel Redistribution and National Security Interests

Question. Secretary Austin recently testified that the centrally located bulk fuel storage at Red Hill did not make sense to support today's Indo-Pacific operations.

Do you agree with Secretary Austin's statement that having a centrally-located fuel storage facility at Red Hill "doesn't necessarily support the way that we operate today," as we are "much further forward and operate in a dispersed fashion"?

Answer. As the Secretary of Defense stated when he announced the defueling and closure of Red Hill, the distributed and dynamic nature of our force posture in the Indo-Pacific, the sophisticated threats we face, and the technology available to us demand an equally advanced and resilient fueling capability. To a large degree, the Department of Defense already uses dispersed fueling at sea and ashore, permanent and rotational. We will now expand and accelerate that strategic distribution.

Question. Given the evolving challenges in the region—including increased threats from China, North Korea, climate change, and extreme weather events—how should we think about how we locate strategic reserves throughout the Indo-Pacific?

Answer. Decisions made regarding the location of the strategic bulk fuel reserves throughout the Indo-Pacific must align with the National Defense Strategy objective to build a resilient Joint Force and defense ecosystem. The placement of our strategic fuel reserves is based on several considerations. When we think about how we locate strategic fuel reserves in the Indo-Pacific region, consideration is given to current threats and the impacts of climate change. The primary consideration for location placement is the proximity of need for our operational forces that support contingency plans. Those operational requirements narrow the locations down to possible areas that are able to support the respective volume of fuel in terms of infrastructure, accessibility, and security. Additionally, any placement of fuel on foreign soil must abide by the local policies and laws specified in our national agreements.

Pacific Deterrence Initiative (PDI)

Question. Expanding our presence in the Indo-Pacific heavily relies on investments made in infrastructure, responsiveness, and resilience throughout the region.

How is the Navy factoring in climate change and environmental risk mitigation as it develops the PDI?

Answer. We recognize the reality of global climate change and the need to prepare for its short and long term effects on operational capability, as well as our responsi-

bility to mitigate our environmental impact. The Department of Navy is incorporating climate change and environmental risk mitigation into all our infrastructure projects, to include those projects that meet the Department of Defense's criteria for the Pacific Deterrence Initiative. We leverage Department of Defense Unified Facilities Criteria, the Department of Defense Overseas Environmental Baseline Guidance Document, the DoD Regional Sea Level (DRSL) database, the DoD Climate Assessment Tool (DCAT), and the Naval Facilities Engineering Systems Command Climate Change Planning Handbook. In addition, Climate Action 2030, the Department of the Navy's climate strategy prioritizes climate readiness as mission readiness; this is especially true in the Indo-Pacific AOR. We recently conducted a table top exercise to validate the components of our strategy and further explore how we can continue to factor climate change and environmental risk mitigation into our decisionmaking.

Defense of Hawaii

Question. The threat of ballistic, hypersonic, and cruise missiles is increasing, as potential adversaries are ever more capable delivering conventional and nuclear payloads—and in some cases, farther, faster, and with greater accuracy.

What capabilities does DoD have now, and in the near future, that will be able to defend Hawaii from evolving missile threats?

Answer. The Navy in partnership with the Missile Defense Agency (MDA) remains a key aspect to the Joint mission of fielding a robust and credible Ballistic Missile Defense (BMD) capability. The ballistic and hypersonic missile threats continue to evolve and threaten the sea base, and regional and theater land assets in multiple areas of responsibility (AOR). Integrated Air and Missile Defense (IAMD) capability is being delivered to the Fleet through the Aegis Modernization (AMOD) program and new construction Aegis Destroyer program utilizing the most advanced Aegis Baselines 9 combat system, which leverages proven Aegis Anti-Air Warfare (AAW) capability in a BMD environment. Future capability with the Air and Missile Defense Radar (AMDR)/SPY-6(V)1 with Aegis BL 10 (BMD 6.0) provide next generation IAMD capabilities to USS JACK H. LUCAS (DDG 125), the first FLT III Aegis destroyer. This capability will be delivered in Aegis BMD, providing regional BMD against short, medium, and intermediate range ballistic missile threats utilizing the SM-3 missile and sensor cueing to the Nation's Missile Defense System (MDS) for regional defense and homeland defense from at-sea and a land-based component.

QUESTIONS SUBMITTED BY SENATOR SUSAN M. COLLINS

Question. I recently visited Kyiv as part of a small Senate delegation that met with President Zelensky and his senior advisors. In our meeting with President Zelensky, he cited the need for additional anti-ship missiles like the one they used to strike Russia's Black Sea capital ship in April as a top priority. This capability is important for Ukraine to break the Russian blockade of the port city of Odessa, which is creating the threat of famine and food shortages by blocking Ukrainian grain shipments.

Earlier this week, Secretary Austin announced that Denmark will provide Ukraine with a Harpoon launcher and missiles. I encourage the Navy and the administration to continue supporting those efforts, either through direct donations of U.S. stocks or by further encouraging our allies to supply similar systems.

How might Ukraine's continued successful use of these types of anti-ship weapons affect Russia's ability to operate near the coast of Ukraine in the Black Sea?

Answer:

—The MOSKVA was in a position off the coast of Ukraine where they should have been concerned about coastal defense cruise missiles, but were not. The successful engagement has forced Russia to operate further away from the coast and has impacted their ability to protect operational interests. Anti-ship weapons are anticipated to further stress Russia's ability to maneuver as they would like against Ukraine—forcing risk-based decisions in response to Ukraine's success.

Question. What lessons is the Navy taking away from the challenges Russia has faced from Ukraine's asymmetric capabilities, such as its successful anti-ship missile strike?

Answer:

—The Ukrainians' sinking of the Russian Cruiser MOSKVA is a reminder that naval commanders must understand the environment in which they operate. Commanders have to understand the capabilities of their adversary—including asymmetric capabilities—and their own vulnerabilities.

—The Russian Navy has shown it puts a premium on capacity over readiness and capabilities, seemingly sacrificing readiness and modernization of their current force. For the U.S. Navy, we are committed to balancing readiness, capability and then capacity, understanding that 70 percent of our current force will still be in service a decade from now.

—In order to make our fleet as ready, capable, and lethal as possible at its current size, the USN Research and Development budget is focused on technologies like hypersonics, quantum computing, directed energy and high-power microwave capabilities to defend the fleet. Modernized technologies such as these will help the Navy counter a wide range of conventional and asymmetric threats as we work with Congress on the longer term efforts of growing the Fleet.

Question. Have Russia's challenges affected how you think about Chinese missile threats against U.S. ships or how Taiwan might defend itself from a potential Chinese invasion?

Answer:

—Russia's full-scale invasion of Ukraine emphasizes the need for the Navy to be a combat capable force that is postured forward. The Navy also understands the urgency for supporting the Department of Defense to meet the requirements of the Taiwan Relations Act to provide Taiwan the defensive articles and services it needs.

Question. I recently visited Sweden and Finland on the eve of their decision to formally apply for admission to NATO, which is something I strongly support. Swedish officials have reportedly requested a larger U.S. naval presence in the Baltic Sea as part of an effort to continue to deter Russian aggression and demonstrate our support for the Nordic countries' joint-security.

Many have been pushing for an increased fleet presence in Europe for years, including basing two additional DDGs at Rota, Spain. Gen. Wolters, the head of European Command, has called destroyers the "workhouses of deterrence" in Europe against Russia.

How do you see our Naval presence in Europe changing in the coming months and years?

Answer. As the president has recently announced, we will indeed be basing two additional DDGs at Rota, bringing the total number of forward deployed DDGs in the European theater to six. We plan to have the first of these additional ships deploy in fiscal year 2024, and the second in fiscal year 2026. Additionally, we are optimistic that we will be able to meet the requirement of a 1.0 Carrier Strike Group (CSG) allocation to NAVFAC. This is a requirement that we, until recently, have been unable to meet, due to competing requirements in other theaters. We see this trending now back towards a year round rotational presence of the CSG in the European theater. Importantly, the CSG also includes its own complement of cruisers and destroyers, which are in addition to those permanently assigned in Rota.

Question. What are the plans for increased exercises with our NATO and aspiring NATO allies?

Answer. The annual list of maritime exercises scheduled by NATO and individual NATO member states is lengthy. Additional DDGs, along with increased rotational forces will give the Naval Component Commander added flexibility to not only participate in more exercises but also increase our participation in exercises in which we were already signed up to take part. We conduct more than 75 exercises each year from the Arctic Ocean, to the Black Sea and down to the Gulf of Guinea, and in many cases these extra forces will add complexity in maritime exercises and in others allow us to be involved when we were not able to in previous years. For example, next year we plan to participate in Exercise AURORA (Sweden) and Exercise FREEZING WINDS (Finland), exercises we have not had much play in, in previous years.

Question. The Navy's future years defense plan calls for the procurement of two destroyers per year through fiscal year 2027, though the request for the multiyear is for nine guaranteed ships and a single option ship. You have also spoken about your desire to get BIW to a 1.5 ships per year build rate, which points to the need for three ships per year rather than two. It is important for the multiyear contract to allow for up to those 15 ships, similar to the current multiyear.

As I know you understand, it is important to send the right demand signals to industry. First, the Flight III DDGs will be the most capable warship in the world once they are in the fleet, and they are ships we need right away for the potential China fight that could occur by 2027. But we also need to ensure the industrial base is firing on all cylinders once we start building DDG(X) at the end of the decade. A lack of predictability adds to the workforce and supply chain challenges.

Can you talk about the importance of the multiyear contract for ensuring stability and predictability in the industrial base?

Answer. Multi-year Procurement (MYP) contracts, when compared to annual contracts, reduce acquisition costs by virtue of advance planning and bulk-purchasing. For new ship construction, a five-year MYP provides shipyards with the long-term stability that enables competitive bidding and internal investment. Under MYP contracts, the Navy is permitted to make bulk purchases and timely procurements of long-lead time items. This practice allows vendors and shipyards alike to utilize production economies of scale, reducing construction times and cost.

Question. It seems inconsistent to push for a ramp up to 1.5 ships per year at the shipyards while the budget only calls for two ships per year, and the proposed multiyear only calls for nine guaranteed ships. How can we send a clearer signal to industry?

Answer. The President's fiscal year (FY) 2023 budget Future Year Defense Plan requests the procurement of 10 ships from fiscal year 2023 to fiscal year 2027 at a rate of two DDG 51s per year. The contract is planned to have the flexibility to procure up to 15 total ships. The additional options in the fiscal year 2023–2027 MYP contract and the existing workload at the shipbuilders allows both shipyards to execute up to 1.5 ships per year.

QUESTIONS SUBMITTED TO GENERAL DAVID H. BERGER

QUESTIONS SUBMITTED BY SENATOR PATRICK LEAHY

Question. The strains of flying high-performance aircrafts are universal for service members in all branches of the military. Physiological events while flying are some of the most dangerous to crew and aircraft, and stresses experienced by the body in flight can have long lasting effects on individuals.

In Vermont, our Air National Guard pilots prepare for the strains of flight in an F-35A through a program called the Optimizing Human Weapon System (OHWS). The OHWS programs prepare pilots for the physical demands of flying and treats injuries resulting from flying to reduce the occurrences, longevity, and severity of flight-related injuries among their pilots.

How do you prepare Marine Naval Aviators for flight and treat injuries resulting from flight?

Answer. Marine and Navy Aviators are required to complete the Naval Aviation Survival Training Program (NASTP) prior to entering a flight status and every 4 years thereafter. This training includes aviation physiology, human performance enhancement, sensory physiology/situational awareness, acceleration physiology, aviation life support systems, survival first aid, water survival training (underwater egress, parachute training, life rafts and sea survival, rescue devices/helicopter hoist, underwater emergency egress breathing device, dynamic hypoxia training with adjunctive training using a reduced oxygen breathing device), ejection seat training, and centrifuge flight environment training as needed.

While in their training pipeline, all class one aviators (Ejection Seat Aircraft) are required to attend centrifuge training in order to experience Gravitational (G) forces similar to those in flight and learn how to properly execute the Anti-G Straining Maneuver. This was previously done at Aviation Survival Training Center (ASTC) Lemoore, but that centrifuge is no longer operational. Currently, centrifuge training is either done at Air Force facilities or via contractors.

Commander, Naval Air Forces (CNAF) Level A Annual Aeromedical Training is completed prior to entering a flight status and annually thereafter. This includes ejection seat training, egress training, sensory physiology/situational awareness, laser eye protection, high performance high altitude physiology, gravity tolerance improvement program, aviation life support systems, survival radios.

Further training includes CNAF Level B Deployment briefs to include first aid/self-aid/buddy aid, stress and human performance, environmental stressors, Combat Survival Evader Locator (CSEL), and chemical, biological, radiological (CBR) defense. Additionally, aviators complete Night Imaging and Threat Evaluation (NITE) Lab Training Marine Aviation Weapons and Tactics Squadron 1 (MAWTS-1) curriculum (intro to Night Vision Goggles (NVG) tactical employment, the night environment, Night Vision Device (NVD) design considerations, NVG components and preflight procedures, aeromedical aspects of NVG aided flight, NVG misperceptions and illusions, NVG eye lane demonstration, night scene simulation, NVG related mishap lessons learned).

Throughout their service, Marine and Navy Aviators have medical personal available to them within their units and higher headquarters. United States Naval Flight Surgeons and Corpsmen are available to all aircrew that are trained in diag-

nosing and treating injuries related to flight duties. Naval Medicine is capable of treating flight related illnesses and returning aviators to full duty.

Question. How does the Marine Corps monitor the physiology of aviators in flight?

Answer. In-flight physiological monitoring is being investigated presently, but has proven extremely challenging. A monitor that appropriately measures metrics, will announce appropriately, can survive the aviation environment, is ejection safe, and will function under multiple-G stress has yet to be discovered. Consideration has included devices such as Garmin watches and more, and engineering teams are investigating the feasibility and effectiveness of installing a physiological monitor in the oxygen mask.

Annual short form flight physicals and quinquennial long form flight physicals are used to qualify and monitor pilots and aircrew for flight. These physicals are utilized to determine physical qualification and aeronautical adaptability of aviators and aircrew. Long form physicals and any medical waivers also go through Naval Aerospace Medicine Institute for their specialist recommendations of flight status.

Whenever a physiological event occurs, a full investigation is launched to determine the cause.

Question. What procedures could be improved to better share across the branches of the military best practices for preparation and treatment for the demands of flight?

Answer. The services must continue ensuring that each event is documented, that practices for documentation and investigation are uniform, and that results are shared. This coordination could be specifically facilitated by an aeromedical working group that meets periodically to discuss aeromedical and aviation physiological concerns.

Navy and Marine Corps units can further enhance sharing by ensuring that all physiological episodes are reported. This can best be achieved by fostering command climates that promote self-reporting of episodes. Selecting the right individuals to serve as Commanding Officers is critical to creating this environment.

QUESTIONS SUBMITTED BY SENATOR BRIAN SCHATZ

USMC Energy Resiliency

Question. Marine installations are transitioning to an electric vehicle fleet and the use of smart grids as a power source.

When can Marine installations in Hawaii expect functioning electric vehicle chargers and photovoltaic panels?

Answer. Although there is currently no in-ground Electric Vehicle (EV) supply equipment installed aboard Marine Corps Base Hawaii, two Beam EV ARCs are deployed and operational aboard the installation to support EV recharge requirements.

Question. How does the USMC conduct energy resilience readiness exercises?

Answer. The Marine Corps' Energy Resilience Readiness Exercise (ERRE) program includes table top, intermediate-level, and black-start exercises to test mission continuity of operations plans, utility emergency response plans, infrastructure configuration, and equipment conditions. These "pull the plug" exercises test the installation's resilience to conduct critical and essential missions while disconnected from the commercial power grid. ERREs are performed per Office of the Secretary of Defense guidance published in August 2020 and are designed to meet the following objectives as presented in 10 USC 2920:

- Determine the ability of the backup systems to start independently, transfer the load, and carry the load until energy from off the installation is restored;
- Align organizations with critical missions to coordinate in meeting critical mission requirements;
- Validate mission operation plans, such as continuity of operations plans;
- Identify infrastructure interdependencies; and
- Verify backup electric power system performance.

USMC logistical and amphibious requirements

Question. Expanding our presence in the Indo-Pacific heavily relies on investments made in infrastructure, responsiveness, and resilience throughout the region.

How is the Marine Corps positioned to effectively respond to crises—both defense and humanitarian—in the Indo-Pacific?

Answer. The Marine Corps, as part of the forward deployed naval force, makes up the inside force within the Indo-Pacific area of operations. Marine Corps units in the First Island Chain are stand-in forces that provide a range of options for crisis response and demonstrate the U.S. commitment to maintaining a free and open Indo-Pacific. In addition to having forces postured on bases and stations throughout

the Pacific, the Marine Corps continues to maintain a presence on amphibious ships with the deployment of Marine Expeditionary Units west of the International Date Line. This naval team, conducting exercises with our partners and allies, further increases a deep understanding and appreciation for the places and people throughout the Indo-Pacific, while increasing readiness and providing assurance in both steady state and crisis. This combination of readiness, assurance and understanding of the area enables the Marines to rapidly respond to crisis and contingencies, while providing deterrence in steady state.

Question. What logistical shortcomings or gaps in the region that could be of potential concern to the Marine Corps?

Answer. The tyranny of distance across the Indo-Pacific make current and future operations across the range of conflict ever more complex. Supply chain interruptions from COVID highlight the challenges of logistics and supply throughout the theater. To deploy responsive and resilient Marine forces across the ocean and into the littorals, the naval team will need to invest in increased lift and non-traditional logistical capabilities, to include prepositioning of resources, to project and sustain the inside force. Increased intra-theater lift and operational-to-tactical logistical sustainment is required to ensure operational viability and maintain the deterrence effect of the force. Resilient and redundant airfields and ports would enable rapid response to humanitarian crises and dispersal in case of conflict.

Question. As China is the “pacing threat,” and given the vast expanse of the Indo-Pacific, can you explain how the Navy’s budget request addresses the challenge of contested logistics?

Answer. The fiscal year (FY) 2023 budget request strongly supports solutions to the challenges of contested logistics in the Indo-Pacific. The budget includes investments in L-Class ships, the Light Amphibious Warship and the Next Generation Logistics Ship, all of which are indispensable elements of the Marine Corps’ and Navy’s ability to address mobility and sustainment in a contested context. The budget also invests in new construction, industrial capability, and infrastructure to improve maintenance, logistics responsiveness, and capacity. It also supports efforts in prepositioning and coordination with key allies and partners, both of which are key parts of mitigating the tyranny of distance in the region. Finally, the budget continues to fund Force Design 2030 and its associated campaign of learning, supporting innovation, experimentation, and analysis to ensure the Marine Corps is positioned to sustain operations across the spectrum of competition.

Climate Change Resiliency

Question. U.S. military bases are regularly plagued by extensive damage to infrastructure due to flooding by sea-level rise, extreme storm surges, and lack of clean drinking water due to saltwater intrusion into the groundwater aquifer. This particularly affects bases on low-lying Pacific atolls. Damage to our critical infrastructure caused by extreme weather will no doubt cost billions in replacements and repairs and will acutely shape the way DoD conducts global operations.

It is reported that the Marine Corps is considering moving bases in response to the growing effects of climate change on installations. Can you explain how the impacts of rising sea-levels, temperatures, and storms negatively impact our national security readiness and what led to your consideration to relocate bases?

Answer. The impacts of rising sea-levels, temperatures, and destructive storms increase, instability and demands on the Marine Corps while simultaneously impacting the ability to respond to those demands. Rising sea levels test the ability of coastal Marine Corps installations to support missions. As temperatures continue to rise, oceans will get warmer, creating more destructive storms requiring the Marine Corps forces to increase operational tempo to respond. The Marine Corps is using a variety of tools to ensure it has resilient installations capable of continuous operations, including building new construction outside of known flood plains, ensuring compliance with updated construction codes, and developing the ability to operate independent from local electrical grids. As the Marine Corps assesses risk to its installations, it has also considered relocation as an option. However, at this time, there are no plans to relocate any Marine Corps installations, and any future plans will be developed in close collaboration with Congress.

Question. How are the Marines Corps mitigating climate change risks?

Answer. In conjunction with the Department of the Navy, the Marine Corps will build climate resilience by ensuring that its forces, systems, and facilities can continue to operate effectively to achieve the mission in the face of changing climate conditions and worsening climate impacts. The Marine Corps is also participating in the Department’s efforts to reduce greenhouse emissions.

Question. Can you update me on the progress that has been made in infusing both implications of, and efforts to combat, climate change in organizational structures and exercises?

Answer. Characteristics of the future operating environment, to include the effects of changes in the environment and weather planning, are considered during future planning to ensure installations are resilient and that exercises can be conducted effectively.

SUBCOMMITTEE RECESS

Senator TESTER. This defense subcommittee will reconvene on Tuesday, June 7th, at 10 a.m. for a hearing with the National Guard and Reserve components. As of now, we stand in recess.

[Whereupon, at 11:10 a.m., Thursday, May 26, the subcommittee was recessed, to reconvene at 10 a.m., Tuesday, June 7.]