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# THE CURRENT READINESS OF THE JOINT FORCE

## HEARING

BEFORE THE

## SUBCOMMITTEE ON READINESS AND MANAGEMENT SUPPORT

OF THE

## COMMITTEE ON ARMED SERVICES UNITED STATES SENATE

ONE HUNDRED EIGHTEENTH CONGRESS

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MARCH 22, 2023

# THE CURRENT READINESS OF THE JOINT FORCE

**TUESDAY, MAY 2, 2023**

UNITED STATES SENATE,
SUBCOMMITTEE ON READINESS AND
MANAGEMENT SUPPORT,
COMMITTEE ON ARMED SERVICES,
*Washington, DC.*

The Subcommittee met, pursuant to notice, at 3 p.m., in room 232A, Russell Senate Office Building, Senator Mazie Hirono (Chairwoman of the Subcommittee) presiding.

Subcommittee Members present: Senators Hirono, Shaheen, Blumenthal, Kaine, Duckworth, Kelly, Sullivan, Fischer, and Tuberville.

## OPENING STATEMENT OF SENATOR MAZIE HIRONO

Senator HIRONO. [Technical problems]—that is distinguished both by their depth of knowledge and experience. I thank each of you for your service to our country and for taking the time to speak with us today.

I want to begin by acknowledging the Apache helicopter training accident that occurred late last week and resulted in the tragic loss of three soldiers in Alaska. It was just a month ago that another nine soldiers were killed when two Black Hawk helicopters collided in Kentucky on a training mission.

These tragedies have led to the Army Chief of Staff ordering an aviation safety stand down to review the risk approval process, training, standardization, and flight planning process. It is imperative that we thoroughly investigate the root causes of these and other training accidents, and not just from a mechanical malfunction standpoint.

The Department must ensure that it is evaluating every training and readiness implementation of these—implications of these accidents so that we can prevent them going forward. The demands and operational pace for our servicemembers remains high.

In your prepared statements, each of you laid out the challenges and obstacles you face. They include difficulties with retention and the desire to appropriately fill out force structure, outside factors like low unemployment, and just a fraction of the U.S. population being able to serve.

The reality that an even smaller number of Americans are willing to serve. Beyond retention, the Department still struggles to maintain and sustain its equipment on schedule to support mission readiness.

In the rush to modernize and procure more ships, it is equally critical that the Navy finishes its maintenance availabilities on the ships and submarines that we already have. On time and without cost overruns, and that is, I know, an issue for us. We have an extremely capable fleet today, but a State of readiness needs to be improved in a variety of ways.

Equally important to readiness is the access to and quality of our training ranges across all domains. This issue is top of mind in Hawaii, and I am interested in hearing from the Army in particular about how you will ensure land lease remains—renewals that are coming up in some major places, such as Pohakuloa on the Big Island in just a few years, are handled with dignity and respect for the people of Hawaii, while balancing the requirements to train in the Pacific.

In addition to the President's Budget request, this Committee has aggressively funded almost every unfunded priority listed over the last few years, and I know that this year we have quite a lot of unfunded priorities.

So measured in both the operation and maintenance accounts, and the military construction program, the demand and pace of munitions support and equipment sent to Ukraine has diminished the amount of ammunition on hand for training and contingencies.

Yet, given all the resources you have, I want to hear more about the timeliness and conditions for improvements in readiness recovery. Each of your statements touch upon how important our people are, and I certainly agree.

That is why I am concerned about the Department's unaccompanied barracks problems, on top of the well-documented concerns about privatized housing on base. The quality of servicemembers housing has a direct connection to unit readiness and their desire to keep serving, and if we are not serving them well where they live, they will leave. It is not just a matter of building new barracks, though that is imperative.

We need to ensure that they have access to healthy food at all hours and we need to ensure that habitability standards meet the simple standard of what we want our family to live in these conditions. Ms. Maurer and the GAO [Government Accountability Office] have highlighted many of these readiness challenges in the GAO's comprehensive work.

I thank you and your team for the great work that you have done, and caution your success means that you will likely see more work in the future. I want to also highlight the impact that Senator Tuberville's continued hold on all general flag officer promotions has on readiness.

Being blunt, this political stunt not only impacts general officers but the chain of promotions behind them. Senator Tuberville's actions are compromising officers' ability to move to keep billets required for growth and promotion and is wreaking havoc on military families. His holds completely disrupt children moving schools, families securing housing in a challenging housing market, and spouses moving jobs.

I have spoken openly about all this issue from a policy perspective, but it is equally important to discuss the impact that this has

on our readiness and the lives of our servicemembers and their families.

These holds are, in my view, reckless, and I hope my colleagues will join me in calling on Senator Tuberville to lift his hold immediately. This is not the way to force the DOD [Department of Defense] to change a policy with which he does not agree. Senator Sullivan.

**STATEMENT OF SENATOR DAN SULLIVAN**

Senator SULLIVAN. Thank you, Madam Chair, for holding this important hearing on the readiness of our military. I look forward to working with you constructively and respectfully on these and other important issues impacting U.S. military readiness.

I appreciate you mentioning the recent loss of life in Alaska. General, our hearts go out to the families in my State, but it is a reminder of the risks that all of our military takes on a daily basis, even when not deployed. In terms of readiness, I think across a number of critical realms, the U.S. military is already in a readiness crisis.

The Chairman of the Joint Chiefs and Secretary of Defense have come before the full committee in the past 2 years telling us that we are in one of the most dangerous periods at any time since World War II, and yet 3 years in a row, the Biden administration puts forward Defense Department cuts that are inflation adjusted cuts to the defense budget.

This Committee will almost certainly reject the latest Biden budget and significantly increase support for our military's readiness, modernization, and troops above the President's top line, as we have done in the past 2 years.

Today, I will focus a good part of my opening statement on the Department of the Navy and the challenges it is facing. I want to begin with Marine Corps Force Design 2030, a bold and important initiative that I have complimented the Commandant of the Marine Corps on.

I led the charge in the Congress on the 31 amphibious ship requirement last year, and on pushing back against the Navy and Office of the Secretary of Defense when they were tempted to pocket the billions of dollars of Marine Corps divestments in order to apply these funds to non-Marine Corps programs.

I have also spent dozens of hours studying and asking questions about Marine Corps Force Design of current and former Marine Corps leaders. But more from the Congress needs to be done on an initiative of this consequence and magnitude. Tough, probing questions are required from this Committee.

No plan is perfect, especially military plans, and no general is infallible. Force Design needs rigorous oversight, not out of disrespect for the Marine Corps, but out of an abiding respect for this exceptional and unique American institution and the critical role it has played and will continue to play in our Nation's defense.

My questions about Force Design fall into three broad categories. First, the divest to invest strategy shed in a rapid amount of time a very significant amount of proven Marine Corps combat capability.

Some examples in the past few years include, close to 10,000 Active Duty marines and 6,000 Reservists, a reduction of 21 percent of Active Duty infantry marines, and 16 percent of Reserve infantry marines, 67 percent of canon artillery, 33 percent of AAVs [Amphibious Assault Vehicles], 100 percent of tanks, 100 percent of bridging along with breech and clearing and proofing equipment, 100 percent of law enforcement.

The numbers on divestments in terms of Marine Corps aviation are confusing. Some have stated over 200 aircraft. Others are saying there are no divestments. As part of Force Design, the Marine Corps has brought on, or will be bringing on, three additional UAV [Unmanned Aerial Vehicle] squadrons, an additional C–130 squadron, new loitering and anti-tank munitions, and three new air defense battalions.

These are significant combat divestments and the focus on enhancing lethality around maritime choke points, particularly against the PLA [People's Liberation Army] navy, have raised questions about whether the Marine Corps is designing a niche light infantry, missile heavy force focused on one AOR [area of responsibility] at the expense of the Marine Corps' traditional role as a lethal, robust combined arms force ready to rapidly respond to any global crisis, anywhere in the world.

One hallmark of the Marine Corps Air Ground Task Force, the MAGTF, is its ability to kick in the door anywhere in the world and sustain itself for weeks in heavy combat before follow on forces arrive. Is Force Design 2030 degrading the Marine Corps' ability to be the Nation's 911 force?

Much of Force Design doctrine focuses on littoral and amphibious operations, but what if the next fight is not in the littorals? What if we are back in the desert? What if it is an urban terrain? What if the marines need to cross a river?

These are important questions. Second, Force Design 2030 clearly shows the Marine Corps' commitment to support naval operations. Indeed, that is one of the main reasons for this initiative. But the Navy is not reciprocating.

Last year, I wrote an Op-Ed warning that Force Design 2030 would fail without the Navy's support. In my view, that is happening now. The Fiscal Year 2023 National Defense Authorization Act (NDAA) created a legal requirement, which I authored, for the Navy to maintain 31 amphibious ships, identical to the legal requirement to maintain 11 carriers.

In a stunning display of disdain for Congress, the Navy, who is now ignoring the law completely, as this chart shows—the 30-year shipbuilding plan submitted to this body does not once hit 31 amphibious. That is required by the law.

The Secretary of the Navy committed to appearing before this Committee to explain how the Navy is going to comply with the law. He needs to do that soon. The real-world impact of the Navy's lack of investment in the amphib fleet is already occurring. In the past few days, several articles have been published detailing how the 31st MEU [Marine Expeditionary Units] based out of Japan, has few Navy assets to deploy on.

The insufficient numbers of ships is compounded by their poor maintenance. In March of this year, the commandant said that am-

phibious ship readiness is 32 percent, and has been well below 50 percent for over a decade. If amphibs can't leave port, our MEUs can't deploy.

If our MEUs can't deploy, the U.S. cannot provide a timely response to crises around the world. Third, and finally, what if the capabilities of the Marine Corps that is designing and developing as part of Force Design don't work as intended?

The Center for Strategic and International Studies (CSIS) recently undertook a comprehensive war game centered on a conflict in the Taiwan Strait, exactly the kind of conflict Marine Corps Force Design was designed for, and they were unimpressed with the Marine littoral regiments, LMRs—or MLRs.

CSIS raised questions about the MLR's ability to sustain itself, how quickly it would expand all its anti-ship missiles, and how it would get to the fight, be it on Taiwan or elsewhere. Does the Marine Corps have the sealift and airlift to execute its stand in forces concept using MLRs? The Navy isn't helping.

It will only require six landing ship mediums, LSMs, over the next 5 years, despite the Marine Corps saying it will need 35 LSMs to provide intra-theater lift, and in terms of airlift, it appears the Marine Corps is divesting more assets than it is acquiring as part of Force Design. Given these challenges, CSIS asks whether other services are better equipped to conduct sea denial operations against the PLA Navy.

CSIS concluded that could be the case, stating, "a squadron of bombers armed with long range cruise missiles has greater volume of fire than an entire MLR, but without the challenges of transportation and logistics."

Finally, let me touch on the other services. Recruiting, recruiting, recruiting. The challenges are threatening our All-Volunteer Force. I would like to hear from the witnesses today how the Space Force and the Marine Corps continue to meet their recruiting goals, but how the Army and Air Force are significantly missing those goals.

We want to all work together to make sure that we can fulfill our Constitutional obligation to raise armies, provide for the National Security that is so important to this Committee.

The last thing I want to say is to our GAO witness, Ms. Maurer, we thank you for your work and your team have done on behalf of this Committee. Please do not pull any punches today. I don't anticipate you will.

Senator HIRONO. Thank you, Senator Sullivan. I do share your concerns about the fact that our amphib ship readiness is well below the standards that we want.

Today's hearing is focused on the current readiness of the Joint Forces, and I will just go through the people on the panel today, starting from my left, where you have General Randy George, Vice Chief of Staff of the Army, Admiral Lisa Franchetti, Vice Chief of Naval Operations, General Eric Smith, Assistant Commandant of the Marine Corps, General David Alen—Allvin, I am sorry, Vice Chief of Staff of the Air Force, General David Thompson, Vice Chief of Space Operations, and Ms. Diana Maurer, Director of Defense Capabilities and Management at the GAO. We will start with you, General George.

**STATEMENT OF GENERAL RANDY A. GEORGE, USA, VICE CHIEF OF STAFF OF THE ARMY, DEPARTMENT OF THE ARMY**

General GEORGE. Chair Hirono. Ranking Member Sullivan, distinguished Members of the Subcommittee, thank you for the opportunity to discuss readiness posture of our Army. First, I want to thank you for your condolences on the Apache incident that we had last week.

We are taking care of the families and we appreciate the thoughts and prayers and will continue to support our 11th Airborne Division teammates. Our Army is focused on war fighting and training for battle in which all domains are contested.

All the while, we are supporting combatant commands with ready formations around the world. Got approximately 137,000 soldiers right now deployed in 140 countries. We are strengthening our partnership with defense industry, and we are rapidly modernizing our organic industrial base to increase productivity and ensure that we have the stocks to fight when called upon.

We are deterring the pacing challenge China by exercising and campaigning across the Indo-Pacific theater and holding the line in the European theater alongside of our North Atlantic Treaty Organization (NATO) partners, all the while adapting in real time to lessons learned from the war in Ukraine, testing the lethality of our equipment, and rapidly incorporating new tactics into our doctrine and training. But readiness for today is not enough.

Our Army is also transforming. We don't have an option. Warfare is changing and we must change because of it to ensure that we stay ahead of our potential adversaries. So, among many things, we are modernizing long range precision fires, air and missile defense, ground combat capabilities, and developing counter Unmanned Aircraft System (UAS) capabilities and doctrine to name a few.

Finally, we are building the team. This includes providing commanders with the resources they need to support soldiers' mental and physical well-being, to maintain healthy command climates, and to build cohesive teams.

It means investing in the quality of life of our soldiers and families, ensuring that they have safe housing and barracks, adequate childcare, and spouse employment opportunities.

I will end with recruitment, a critical readiness priority for us right now. We are challenged by the fact that a small number of young Americans, 23 percent, are qualified to serve. Fewer still are interested in serving, and we are working hard to change both of those. Our Army remains a great place to be, and I think our high retention rates speak to that.

So, while military service to some Americans seems like a life setback, in reality, it is a life accelerator. That has certainly been my experience since I enlisted as a private, straight out of high school. It is a great team with an important mission and an ample opportunity to learn, grow, and make an impact, and we have got to get that story out.

We appreciate Congress's assistance in amplifying our call to service. Thank you, and I look forward to your questions.

[The prepared statement of General George follows:]

## PREPARED STATEMENT BY GENERAL RANDY A. GEORGE

### INTRODUCTION

Chairperson Hirono, Ranking Member Sullivan, and distinguished members of the Subcommittee, thank you for the opportunity to appear before you today to discuss the readiness posture of the United States Army. On behalf of the Secretary of the Army, Hon. Christine Wormuth, the Chief of Staff of the Army, General James McConville, and our soldiers and their families serving around the world, we appreciate your continued partnership in ensuring that our Army remains ready to deter adversaries and, when called upon, fight, and win our Nation's wars.

Just over a year ago Russia further invaded Ukraine, unjustly and without provocation. The Ukrainian people unified in self-defense and continue, almost 15 months later, to inspire the world with their intrepidity and unflappable sense of duty. But their impressive successes against Putin's forces and the strong and strengthening posture of NATO today are also rooted in American strength and investments. Since 2015 the Army has trained Ukrainian troops, and we've seen the impacts of that training and partnership on the battlefield. Within days of the full-scale invasion, American soldiers were deployed to NATO's eastern flank, drawing from pre-positioned stocks, and standing ready to meet and deter any threat to our Allies. And today, 42,000 soldiers are serving in Europe—17,000 of which are part of rotational formations. They are working to support the transit of materiel to Ukraine, to train Ukrainian Armed Forces, and to stand shoulder-to-shoulder with Allies.

And of course, the Army is not just serving or investing in Europe. Our formations in the Indo-Pacific are focused on deterring America's pacing challenge—China. Through multinational exercises, exchanges and engagements, as well as actions to set the Theater, the Army campaigns and competes in the Indo-Pacific and plays a critical role in integrated deterrence. Land power is Joint power and we aim to have Army forces in the region 7 to 8 months out of the year, in addition to Army forces stationed in Hawaii, Japan and South Korea. In sum, this past year has demonstrated returns on our earlier investments and planning, America's commitment to her allies and partners, and the strength and responsiveness of our Army.

From Europe to the Middle East and Africa, Latin America to the Indo-Pacific, our Army is focused on meeting the many challenges of today while simultaneously investing and transforming rapidly to confront the challenges of tomorrow. In essence, despite well-known difficulties with recruiting, which I will address, our Army continues to work to maintain the trust and confidence of the American people and serve its interests across the globe.

### CURRENT STATE OF ARMY READINESS

Warfighting is the Army's business, and our Army is focused on just that. We remain the premier ground force in the world, and our soldiers remain ready to respond when the Nation calls. Leaders and soldiers in our formations, alongside Allies and Partners, continue to train for large scale contingency operations and maintain the competencies required to combat terrorism and win in asymmetric conflict. They are also honing their ability to fight and win in any climate—from the jungle to the arctic.

Our Army is demonstrating readiness around the globe daily through exercises and training informed by observing operations in Ukraine. In Warfighter exercises and at training center rotations, soldiers are preparing for multidomain conflicts in which all domains—land, air, sea, space and cyberspace—are contested. And the new Joint Pacific Multinational Readiness Center (JPMRC), with locations in Alaska and Hawaii, affords our troops the opportunity to navigate both jungle and cold weather climates, likely environments for future conflict.

Additionally, our formations are experimenting with new systems and tactics to confront emerging battlefield dynamics to ensure we maintain our competitive advantage over potential adversaries. Over the course of the last year, we have witnessed rapidly evolving capabilities such as air and maritime unmanned systems and modern missile technologies. Most recently, we have witnessed Russians and Ukrainians employ a combination of one-way-attack unmanned systems and cruise missiles to destroy critical infrastructure and disrupt Ukrainian command and control. Joint and multinational experiments like Project Convergence allow the Army to identify trends and changing dynamics, and rapidly incorporate promising technology into the force. Meanwhile, our Army continues to lead the Joint Force in developing and deploying counter-unmanned aerial systems (c-UAS) and doctrine.

On the support side, the Army is incorporating lessons learned in Ukraine to develop and rehearse concepts for conducting effective logistics in contested environments. From prepositioning equipment, coordinating supply distribution with host

nations, conducting telemaintenance, and additive manufacturing, the Army is optimizing logistics processes and incorporating contested logistics concepts into exercise and contingency planning, particularly in the Indo-Pacific Theater.

Finally, our Army continues to synchronize with its sister services and build relationships with Allies and Partners across the globe, so that we can provide credible, interoperable and forward forces to Component Commanders. As an example, this past March the Army and Joint Force team, along with servicemembers from 29 other Nations, convened in Thailand to participate in the largest Cobra Gold exercise in a decade. After years of diminished activities due to the pandemic, we have resumed and expanded our multinational exercise programs.

In sum, our Army continues to maintain a high State of readiness, despite facing dispersed and significant threats. This reflects a close and committed partnership with Congress, and is enhanced by consistent, reliable, and timely funding.

## BUILDING READINESS FOR TOMORROW

Even as we engage emerging challenges, our Army is keeping its eye on the horizon. While the nature of war doesn't change, the character of war does, and if we don't adapt to that changing character, then we will lose our edge. Warfare today is evolving rapidly. America faces formidable adversaries with the capability to compete with us in all domains. The battlefield is constantly expanding with advances in long range precision fires that can challenge our most capable air defense systems. Unmanned systems and artificial intelligence combine to form 'swarm-like' capabilities that will change the calculus on the battlefield, and our adversaries' highly capable sensing and targeting systems require us to exercise deception and camouflage, manage signatures, and plan for periods of degraded networks.

In answer to this, and with Congress' trust and partnership, the Army is undergoing the most significant transformation of the last 40 years. For starters, we are modernizing our capability to support the long-range Joint fight. By 2028 the Army will expand its three existing Multi-Domain Task Force (MDTF) formations, grow two additional MDTFs, and procure three long-range hypersonic batteries and five mid-range capable batteries. These formations will provide critical fire support, as well as space, electronic warfare and cyber support, to the Joint team across the globe.

At the same time, while many think that the future fight will be brief and entirely over-the-horizon, history admonishes that war almost always lasts longer than we expect and ultimately comes down to a close fight. So, our Army trains and campaigns for conflict on the ground as well, and will be ready to take the battle to the enemy in competition, crisis or protracted conflict when required.

We are modernizing the network to achieve data centricity and interoperability with the Joint team and our allies and partners. For decades, we have enjoyed an information advantage in battle—our network was ubiquitous, always on, and secure. Today, this can no longer be taken for granted. In competition and in conflict we must be prepared to continue our mission even through periods of degraded communications. The data, more than the network platforms, must be secure, accessible, and interoperable, and our Army must stay flexible to deliver the right information to the right leaders at the pace of battle on the smallest platform possible. We are transforming to embrace that framework and coordinating closely with the Office of the Secretary of Defense and sister services as we continue to develop Joint All-Domain Command & Control (JADC2).

And we are modernizing across other functional areas as well, and plan to deliver a variety of new systems into the hands of soldiers this fiscal year. These will include fielding the new Integrated Air and Missile Defense, which will integrate current and future sensors and weapons, improve target identification, provide greater flexibility to the Joint Force, and enhance the survivability of our force; fielding improved unmanned aerial systems, which provides greater reconnaissance and targeting capabilities to commanders; and issuing prototypes of the Next Generation Squad Weapon to enhance soldier lethality.

But the Army of 2030 can't just be technologically lethal, it must also be resilient—across both systems and installations. We are improving onsite energy generation and storage on installations to keep critical systems online even when local utilities are compromised. This winter I visited Installation of the Future initiatives at Ft. Carson, Colorado, including the site of a new flow battery system, which will reduce energy requirements during peak hours, leverage photovoltaic power generation systems, and provide a feasible means for long-duration energy storage to support critical assets. On the tactical side, we are working to reduce energy usage in existing vehicles and electrify future fleet vehicles. Hybrid-electric vehicles will reduce logistics tails, help us manage signatures, and improve survivability in heavily

contested environments. Enhanced resiliency is enhanced readiness, and we look forward to continuing our partnership with Congress on these goals.

SUSTAINING READINESS AS WE BUILD THE ARMY OF 2030

*Our* Army must balance the requirements to be ready now with the need to prepare for tomorrow's fight. It is a challenge, but through deliberate evolution and by capitalizing on natural momentum, we can effectively do both. Over the last 15 months and with significant support from Congress, the Army has provided critical support—equipment, munitions, and personnel—to Europe. We have taken advantage of that effort to learn and transform, replace legacy systems and munitions with the latest technology, and launch ourselves into the future. And in the meantime, we have mapped a progression path for other modernization efforts.

First, we are leveraging supplemental replenishment appropriations from Congress for support provided to Ukraine to replace legacy systems with more modern ones. For example, the Army is sending our existing M113 Armored Personnel Carriers to Ukraine to support the ground fight today, but also backfilling our force this year with the new Armored Multipurpose Vehicle—a more survivable general-purpose vehicle. Meanwhile, while we have invested significant munitions in the Ukrainian war effort, our plants and depots—like the Iowa Army Ammunition Plant, which I visited in January—are ramping up capacity, and are poised to modernize existing lines, build new more automated lines, and increase production with the supplemental funding provided by Congress.

And as we continue to move toward the future, we are not canceling or slowing training, but scheduling modernization activities to synchronize with training, mission, and refit requirements. Our combat readiness centers continue to support twenty-two unit rotations each year, with our mission command training center leading four major exercises a year for our divisions and corps. As our regionally aligned modernization model reaches full operating capacity in fiscal year 2024, we are able to forecast and plan delivery of new systems to ensure that we deconflict with training and mission requirements and remain ready while still building capability.

Finally, though there is a lot going on in the Army, we continue to emphasize safety. If measured in total soldier losses, fiscal year 2022 was the safest year in Army history, even as we ramped up training and exercises post-pandemic. In particular, we are improving our safety data collection and analysis processes to keep leaders better informed and ensure that commanders can effectively assess risk at every echelon.

OUR ARMY IS PEOPLE.

Any army is people. Our Army is comprised entirely of Americans who, for 50 years, have all freely volunteered to serve. That is part of what makes us great—we are the most professional, best trained, and most lethal Army in the world because of the quality and commitment of our soldiers and leaders. They chose to join a team of teams.

Today our Army faces significant recruiting challenges. Yet, it remains a great place to serve. We continue to achieve over 100 percent of our retention goals, which positively reflects the teammates, sense of community and mission that the Army offers our soldiers and their families. And Army senior leaders are committed to maintaining and improving quality of life for our Army; our soldiers and families deserve safe and comfortable barracks and housing, available and quality childcare, and opportunity to thrive within the military community. We appreciate Congress' support in this area, demonstrated by the fiscal year 2023 Appropriations Bill, which committed $1.55 billion in Army Military Construction funding to military housing, barracks and Child Development Centers.

Yet despite positive retention trends, we are in a war for talent when it comes to recruiting. Young men and women are, in large numbers, either unqualified or not interested in serving. Today, only 23 percent of Americans aged 17–24 are qualified to serve without a waiver. Meanwhile, our Army is committed to maintaining its standards because we require and rely on high quality teammates. Recognizing that a great number of Americans want to serve but need help meeting our standards, we established a Future Soldier Prep Course (FSPC) in July 2022, designed to prepare young people who are willing and eager to serve their Nation for the rigors of Army training. The program has been a great success. As of March 31, 2023, 5,614 FSPC recruits have moved on to Basic Combat Training—a 97 percent rate.

However, the problem is not just finding qualified recruits. Propensity to serve among young men and women is also the lowest in recent history at 9 percent. Unfortunately, many young people—along with their parents, counselors, coaches, and

teachers—do not know their Army and hold misconceptions about Army culture. Only 21 percent of youth from Generation Z believe that Army culture is consistent with their values and beliefs, and 56 percent report that their impressions of the Army (mostly negative) are driven by non-Army media.

But we are an Army of the people. Along with other service professions in our Nation, we rely on the willingness of young people to fill our ranks. We ask for Congress' help amplifying the call to service and de-sensationalizing the negative narratives that abound in the media surrounding military service. Our Army is the greatest ground force in the world—strong, professional, and ready to defend its fellow citizens.

In the meantime, Army leaders continue to work on building strong command climates at scale, particularly through talent management. On that front, the Army's Battalion Command and Colonel's Command Assessment Programs have significantly improved how we select leaders by providing a holistic assessment of officers identified as having potential for command and key assignments. We have recently added Brigade-level Command Sergeants Major, medical commanders, and acquisition leaders as part of this assessment program. Additionally, in the fall of 2022, we released an update to Field Manual 6–22 *Developing Leaders,* to provide our commanders with up-to-date guidance on cultivating the rising generation of leaders.

Finally, there is abundant research demonstrating that cohesive teams are lethal teams. Soldiers who trust and respect each other are more likely to succeed on the battlefield and collaborate on solutions to the wicked problems posed by peer and near-peer conflict. We are working at every echelon to build cohesive teams and support a safe, respectful and effective warfighting culture. The Sergeant Major of the Army has dedicated countless hours on this front and hosted Monthly Solutions Summits to evaluate ways to prevent harmful behaviors—like sexual harassment and assault, racism and extremism, and domestic violence—in our formations. This year I began hosting Building Cohesive Team Forums in order to approve and resource the working group's initiatives. We are a strong team, but imperfect, and we must strive to improve our culture. There is no place for disrespect and harmful behaviors in a formation of warfighters.

## INDUSTRY—OUR LIFEBLOOD

If people are our backbone, industry is our lifeblood. Our Army sustains its cutting edge because of the ingenuity, energy, and expertise of our industry. We must cultivate that support.

So, we are moving out on a 15-year plan to modernize our Organic Industrial Base to increase capacity, capability, and throughput, and improve safety and resiliency. Using biannual wargames we assess and validate all of the scheduled plans to ensure that we are effectively and efficiently moving forward. Congress has been highly supportive on this front; the supplemental funding provided over the last year has helped move projects ahead of schedule.

Additionally, we appreciate Congress' effort to provide a material exclusion for carryover; this has helped us execute long-term programs and maintain critical workforces through fiscal year transition. For example, artillery tubes take about 14 months to make and require the input of artisans and engineers across the country. With the material exclusion, we can continue executing funding for the tubes beyond the fiscal year and keep producing essential warfighting equipment without interruption. Moreover, we can offer stability to the workforce required for the tubes. The men and women in our OIB plants and depots often come from generations of expertise and allegiance. Unfortunately, other carryover limitations—for instance on foreign military sales and support to other services—often require the Army to walk away from designated modernization dollars because the timeline to execute them is too brief. We continue to work through this challenge, but always appreciate congressional funding that is dedicated early on in the fiscal year, as it provides us maximum time to execute it.

In addition to the OIB, the Army seeks to maintain and grow our relationship with private industry. This partnership is essential as we problem solve emerging threats and find ways to maintain the Army as a formidable fighting force. Again, Congress has provided indispensable support to this relationship. For instance, multi-year procurement has enabled us to make long-term commitments to industry. This year, we utilized multi-year procurement contracts for artillery round production, and we plan to explore their potential use in fiscal year 2024 for Guided Multiple Launch Rocket System production. Meanwhile, we will continue to maintain transparency with both Congress and industry to ensure that we stay sharp and state-of-the-art.

CONCLUSION

Our Army remains the best in the world—ready for the fight today and transforming rapidly for the fight tomorrow. We appreciate Congress' continued guidance and partnership as we meet these demands. Your support has helped us maintain readiness while supporting Allies and Partners in Europe, improve quality of life for our soldiers and their families, and enhance industrial strength.

We also acknowledge the challenges on the horizon—especially with recruiting talented and qualified young men and women to our ranks. We ask that Congress help us amplify the call for service with America's youth. Joining the Army team means opening doors, finding community and being all you can be.

Thank you and I look forward to engaging with you further.

Senator HIRONO. Thank you, General George. Admiral Franchetti.

## STATEMENT OF ADMIRAL LISA M. FRANCHETTI, USN, VICE CHIEF OF NAVAL OPERATIONS, DEPARTMENT OF THE NAVY

Admiral FRANCHETTI. Chair Hirono, Ranking Member Sullivan, and distinguished Members of the Subcommittee, good afternoon, and thank you for the opportunity to discuss Navy readiness with you today.

The United States is a maritime nation. Our security and prosperity depend on the seas. For the past 247 years, your Navy has stood the watch. We are America's away team, operating forward to deter war, protect our economic interests, uphold international law, and respond to crises and natural disasters.

Over the past year, we have safely executed 22,000 steaming days and nearly 1 million flight hours, providing our Nation's leaders with decision space and options, always ready to fight and win if called to do so. As I speak, our sailors and Marine Corps teammates are deployed on more than 100 ships and submarines all around the world, ready to meet the security needs of our Nation.

The Navy is inherently flexible in the maritime domain. With operations spanning the globe, we have supported the allied response to Russia's illegal and unprovoked invasion of Ukraine, while conducting freedom of navigation operations in the South China Sea.

Our ships are assisting in the evacuation of Americans from Sudan, while we are conducting operations in the Pacific to deter potential adversaries and reassure our allies. Just last week, the Makin Island ARG MEU [Amphibious Ready Group and Marine Expeditionary Unit] completed our largest ever annual Balikatan exercise with our ally the Philippines, with over 12,000 sailors and marines participating.

Our fiscal year 2024 budget request is consistent with Chief Naval Officer's (CNO's) priorities of readiness and sailors, then capability, then capacity, with the *Columbia* SSBN program as our number 1 procurement priority.

We continue to prioritize readiness to sustain our forces through better maintenance performance, more training, improved parts availability, and increased weapons inventories. Navy readiness begins with our people, the sailors, civilians, and families who are the foundation of our warfighting advantage.

We are committed to improving their quality of service by investing in initiatives such as quality housing and childcare, access to mental health, an environment free of sexual harassment and sexual assault. In this 50th anniversary of the All-Volunteer Force, we

continue to focus on recruiting, retention, and reducing gaps in our billets at sea. Navy readiness is also centered on the readiness of our platforms.

Using data analytics, improving our planning processes, and procuring long lead time materials, we have decreased maintenance delays in public and private shipyards, but there is more work to do.

Our budget request fully funds public and private ship maintenance, aviation depot maintenance, increases parts and spares, and continues to grow our highly skilled public shipyard workforce.

Finally, Navy readiness is also driven by our shore infrastructure. We continue to fully fund the recapitalization of our four public shipyards through Shipyard Infrastructure Optimization Program (SIOP) program, and our budget request supports increased sustainment of our shore infrastructure, while prioritizing restoration and modernization for water, electrical, and safety systems.

Sustained readiness investments in today's Navy are a down payment on America's future security. I thank the Committee for your leadership and partnership in keeping the world's greatest maritime force ready to fight at sea, and I look forward to your questions.

[The prepared statement of Admiral Franchetti follows:]

PREPARED STATEMENT BY ADMIRAL LISA M. FRANCHETTI

INTRODUCTION

Chair Hirono, Ranking Member Sullivan, and distinguished Members of the Senate Armed Services Subcommittee on Readiness, thank you for the opportunity to appear before you to discuss the State of Navy readiness. On behalf of the Secretary of the Navy, the Chief of Naval Operations, and our sailors, civilians, and families deployed and stationed around the world, we appreciate your continued support and partnership in assuring that our Navy remains ready for prompt and sustained combat, as well as supporting the peacetime promotion of the national security interests and prosperity of the United States.

NAVY'S CONTRIBUTION TO NATIONAL SECURITY

The U.S. Navy, the premier maritime force in the world, remains deployed forward, supporting our national interests while being ready to respond in crisis and conflict. The current and future security environment demands ready ships, aircraft, submarines, expeditionary forces, information forces, and special operations forces that are combat-credible. These forces deter our potential adversaries and are prepared to fight and win in any domain.

The Navy delivers significant warfighting advantage to the Joint Force at the front lines of Strategic Competition, through our survivable strategic deterrent and combat-credible forces deployed forward across all domains. Our adversaries seek to challenge this warfighting advantage through military buildup and coercive behavior, undermining the existing international rules-based order. This is the case with America's pacing challenge—the People's Republic of China (PRC)—over the past year. The Navy's consistent presence in the Indo-Pacific, which comprises of 60 percent of our surface force and 58 percent of our subsurface force, deters and complicates the PRC's decision-calculus and regional plans while reassuring our Allies and partners. In 2022, the Navy deployed 95 ships, 28 submarines, and 75 aviation squadrons to the Western Pacific, maintained continuous strategic deterrence patrols by our SSBN fleet, and conducted numerous Freedom of Navigation Operations challenging excessive maritime claims in the South China Sea to uphold the rights, freedom, and lawful uses of the sea recognized in international law. We also conducted regular transits of the Taiwan Strait. In response to Russia's illegal, unprovoked, and irresponsible invasion of Ukraine over the past year, we deployed 27 ships, 14 submarines, and 31 aviation squadrons to the European theater to deter Russia and reassure our NATO Allies and partners that we are committed to

their security. When our adversaries act, your Navy is ready, and provides options to our decisionmakers.

In 2022, the Navy-Marine Corps team generated combat power with global impact—unmatched by any other naval force—flying nearly 1 million hours, sailing over 22,000 days, and participating in almost 100 exercises. These efforts deter strategic attack, support and assure our Allies, protect freedom of the seas, and project naval power across all domains. The President's Budget Request for fiscal year 2024 (PB–24) reflects the reality that readiness is the key enabler for naval superiority and that ship operations are the Navy's core capability and the foundation of maritime dominance. The budget supports a target deployment length of 7 months for rotational surface forces as defined in the Optimized Fleet Response Plan, allowing for 58 days underway per quarter while deployed and 24 days underway per quarter while non-deployed to sustain proficiency. It also funds the flying hour program to operate and maintain Navy aircraft and train the pilots needed to enable carrier strike group power projection. The Navy's active and reserve fiscal year 2024 flying hour program budget of $7.4 billion for the Navy provides flying hours for global operations, greater operational availability, and recovery of strike fighter pilot production. Along with sustained funding for ship and air depot maintenance, these core readiness investments ensure sailors are trained, and ships, submarines, and aircraft are maintained.

The Navy's Navigation Plan highlights the importance of generating effects that strengthen our Nation's deterrence, campaign through forward presence, and build enduring warfighting advantages. Generating these effects is not just about flying hours and steaming days, but also ensuring our ships and aircraft are capable of sustained operations. The Navy recognizes the importance and impact of maritime, aviation, and weapon spares on readiness and has made funding for spares a top priority in this budget. Consistent and executable spares funding is required to maintain adequate levels of aviation, shipboard, and weapons spare parts to support Fleet training and deployed operations. With the help of Congress, we are systematically recovering from years of underfunding these critical accounts and increasing spares funding, ensuring it is executable based on what the industrial base can produce. We are working closely with our critical supply and industry partners to optimize the flow of spares and repair parts. Relative to last year's budget request, this year's request for aviation and maritime spares has increased by $330 million, totaling $2.3 billion in 2024. This is a clear indication of the importance the Navy places on spares and will ensure our Fleet is self-sufficient and ready for sustained operations.

A safe, secure, and effective nuclear deterrent undergirds and is foundational to every priority in the National Defense Strategy and is central to integrated deterrence. Our Navy operates and maintains the most survivable leg of the Nation's nuclear triad, representing approximately 70 percent of America's treaty-accountable, nuclear arsenal. Navy's fiscal year 2024 budget requests the resources to replace the 14 *Ohio*-class submarines with the more capable *Columbia*-class and continue development of the second life extension of the TRIDENT II D5 missile, as well as refresh supporting infrastructure and modernize our nuclear command, control, and communications systems. Our *Ohio*-class submarines have been patrolling the oceans on deterrent missions for 42 years. This once-in-a-generation overhaul of our ballistic missile submarine force comes with a massive price tag, but it is a must-pay bill for the Nation so that we maintain America's assured second-strike capability.

The budget request reflects CNO's priorities of *Columbia,* Readiness, Capabilities, and Capacity, all underpinned by our great sailors.

## STATE OF READINESS

One of the keys to generating available forces is to ensure our ships and aircraft get in and out of maintenance on time, and on budget. We are pursuing a data-driven approach to improve the effectiveness of surface ship and submarine maintenance. In both the private and the public shipyards, we are seeing trends in a positive direction, because data and advanced analytics now inform the plan for each maintenance period and yield improved processes for better-scoped work. Since fiscal year 2019, days of maintenance delay on major CNO surface ship availabilities in private shipyards have been reduced by 39 percent, and on-time completion steadily increased from 34 percent in fisal year 2019 to 41 percent in fiscal year 2022 for all availabilities, despite the additional impacts associated with the COVID pandemic. Public shipyards also have seen improvements over the last several years, with maintenance delays on submarine and aircraft carrier availabilities reduced by 40 percent since fiscal year 2019, and on-time completion steadily increas-

ing from 29 percent in fiscal year 2019 to 33 percent in fiscal year 2022 for all availabilities.

Throughout this effort, our focal point is to ensure ships and aircraft are ready to support the training and certification of our crews for their deployments and operations. We remain committed to only deploying fully trained and certified crews. Our commitment is reflected in our policy to stringently review and control unit certifications at the 4-star fleet commander level prior to employment of our forces. We also are reviewing organizational changes to make us more effective in the generation of ready ships. In December 2021, the Navy reconstituted a submarine squadron to oversee submarines while they were being repaired and overhauled at Portsmouth Naval Shipyard. Submarine Squadron 2 provides administrative, manning, logistical, operational planning, and readiness support for attack submarines and crews during their time in Portsmouth. The Navy also is re-establishing surface ship readiness squadrons that are focused on providing oversight and expertise for ships in the maintenance phase and the basic level training phase. Surface ship readiness squadrons provide a dedicated command, directly aligned to the type commander and systems commander, to manage, execute, and support ships in complex maintenance periods. This initiative provides focused oversight during this critical period, and allows our operational commanders to concentrate on warfighting. We anticipate the first pilot of the surface ship readiness squadron will stand up this year, with fleet-wide introduction completed within the next 3 years.

SURFACE SHIP MAINTENANCE

The Navy is committed to working closely with private shipyard partners to improve maintenance and modernization outcomes. In particular, Performance to Plan (P2P)-driven improvements—such as the goal of awarding contracts 120 days before the start of a maintenance availability (A–120), level loading ports through better prediction of workload, better availability planning, and improved long-lead-time material acquisition—have provided effective solutions for readiness and reduced maintenance delays. A–120 has allowed the Navy to have long lead time material on time, develop integrated production schedules, and contract for services that improve on-time completion of ship availabilities. Additionally, the Navy continues to see positive performance improvements from the Other Procurement, Navy (OPN) pilot across both Fleets for private-sector maintenance. The OPN pilot has helped significantly in this area, providing the Navy cross-fiscal year flexibility for contract awards and material procurements, enabling the Navy to maintain positive momentum and ensure ships deliver back to the Fleet on time, with work completed in full, and without the need for additional funding in successive fiscal years. PB–24 includes the Navy's request to continue to utilize the OPN pilot and its authorities to allow continued progress and performance improvements in surface ship availability outcomes. In fiscal year 2024, 28 of 57 surface ship availabilities are funded in the OPN pilot.

Another way we aim to reduce shipyard delays is to ensure our ships are receiving the required level of maintenance and modernization at regular intervals throughout their lives. As a result of decisions decades ago to keep ships at sea and on mission, our Navy accepted risk in ship maintenance. As these ships come to the end of their service lives, we know that their material condition is poor and have seen direct impacts in their ability to support mission requirements. This small number of ships is also having an outsized impact on the days of maintenance delay. About half of all maintenance delays over the last several years are due to a few ships that recently completed or are currently going through major modernization periods. When these ships were inducted, we discovered 'worse-than-planned' conditions that created a large amount of unplanned new and growth work. These ships are years behind schedule, well over-budget, and without a clear path to completion, and their crews are missing critical at-sea experiences. Continuing to fund costly modernizations for ships with limited remaining service life and low warfighting utility risks pulling resources away from higher priority readiness needs. In addition, this growth work presents real cost progression and further reduces shipyard capacity that detracts from maintaining more capable ships.

The Navy is committed to conducting a hull-by-hull assessment of each and every ship, regardless of service life, to determine what warfighting value each ship can contribute based on what the National Defense Strategy requires of the Navy. We owe it to our sailors to ensure their ships are materially ready to support the mission requirements we place upon them. Older ships with poor material condition not only increase risk to mission success, but also may increase risk to the sailors that serve in them. Thanks to congressional support, we were able to divest some of our older ships that were in poor material condition. One of these ships was the USS

*Vella Gulf*. During the ship's planned 7-month deployment with the *Eisenhower* Strike Group in 2021, the ship experienced a material failure of an internal fuel tank that caused a significant fuel leak in the main machinery space. This casualty ultimately reduced the availability of this ship to three of 7 months on mission due to emergent repairs. Not only did this failure impact mission readiness, the presence of fuel leaking into a main machinery space also increased the risk to the sailors on the ship. This recent example is why we ask for your continued support to allow us to remove ships that have an unrealistic and cost-prohibitive path to returning to the level of operational standards that are required for our combat forces.

Although there may be concern with a reduction of available work for the ship repair industrial base if older ships are removed from inventory, the President's Budget 2024 funds a total of 75 availabilities for conventional and nuclear forces. The Navy is committed to providing a steady and stable demand signal to enable our industrial base partners to secure a workforce and invest and modernize facilities to meet fleet demand. To achieve this, Navy publicly posts workload forecasts for each port quarterly that include 3-year workload projections, allowing industry to understand current and future planned work. We know that there is more than enough work to be done and, with our industry partners, will continue to leverage all of our capacity to ensure ships enter and exit their maintenance periods on time.

SUBMARINE MAINTENANCE

Since assuming the role of VCNO, I have made it one of my top priorities to improve submarine maintenance, with a weather eye on Navy's stated need for up to 66 fast attack submarines. I have personally visited the Navy's public shipyards in Portsmouth, Pearl Harbor, and Bremerton. Improving our public shipyard performance and getting submarines in and out of maintenance on time is critical to this goal. Today, we are projecting about 700 days of maintenance delays in the public yards for both submarines and aircraft carriers, which is an improvement from over 1500 days of delay in 2019. We aim to drive this number down to the only acceptable number—zero. In this effort, we have identified that one of the key drivers of these delays is late or unavailable material. PB–24 includes $541 million to establish and support a rotatable pool of submarine parts aimed to reduced maintenance delays while waiting for parts refurbishment or overhaul. In addition, President's Budget 2024 commits to sustaining a public shipyard workforce of 37,234, a 40-percent increase over the last decade, to develop a strong, sustainable experience base in our tradesmen and shipyard artisans. They are as important in this "decisive decade" as the submarines we are building and maintaining.

AVIATION MAINTENANCE

The Navy remains committed to continuing improvements in aviation maintenance. President's Budget 2024 increases funding for aviation depot maintenance and increases funding for spare parts. In fiscal year 2022, Navy executed 100 percent of allocated funds, which resulted in zero unfunded backlog of airframes, engines, and modules. The increased funding meets 91 percent of the requirement and allows for the induction of an additional 200 aircraft. Through our strategy of using data analytics to remove barriers to performance, the Navy continues to track Mission Capable Aircraft Required (MCAR) delta which measures the difference between the respective aircraft MCAR Standard (varies by aircraft) and the actual Mission Capable aircraft available. Currently, the MCAR deltas were all within a range of –8 to +18 aircraft for F/A–18 E/F, F–35C, EA–18G, E–2D, MH–60R/S, P–8A, and MH–53 aircraft.

These analytics inform all Navy investments sparing, improved accountability, and readiness process changes. As a result, we are making good progress on getting airplanes in and out of maintenance on time, ready for the "flight-line." In addition, we are working with our industrial base partner to improve the performance of our Service Life Extension/Modification (SLM) Program for F/A–18s, which both increases the service life and aircraft capabilities in high-end warfighting. Recently, we stood-up capabilities to conduct this SLM at Fleet Readiness Center Southwest to increase throughput of SLMs. There are currently 136 planned SLM inductions across the FYDP, with a ramp-up to 35 inductions per year by fiscal year 2028, and a target turnaround time of 12 months. SLM will cost less than one-third the price of new aircraft with comparable capabilities, a cost savings that outweighs the tradeoff in remaining flight hours.

The Naval Aviation Enterprise Future Readiness Team (FRT) continues into its twelfth year. Charged with finding, vetting, and funding innovative maintenance and reliability improvement processes, it continues to increase readiness at reduced

cost. In fiscal year 2022, the FRT tracked 59 initiatives that contributed $248.4 million in savings.

SAFETY

The Navy remains committed to preventing future mishaps that result in the loss of ships, submarines, aircraft and the lives of sailors and marines. We established Naval Safety Command on February 4, 2022, charged with continuous organizational learning across the enterprise to understand actions and behaviors that directly contribute to mishaps and prevent their future occurrence. The Fleet Safety Management System, which was released in December 2022, aims to increase awareness and refocus the importance of safety protocols used to identify, control, and mitigate risk. The Safety Management System reinforces risk-management, problem-solving, and critical thinking at all levels of the Navy; ensures that accountability for risk is held at the appropriate level; and verifies that assurance and regulatory requirements are met. Naval Safety Command's assessment process will determine whether a command has effectively instilled behaviors of self-awareness, self-assessment, self-correction, and continual learning to enable a defense-in-depth that ensures the command is Safe-to-Operate and Operating Safely through proper risk identification, communication, and accountability at the appropriate level. As part of their efforts, Naval Safety Command's mandate includes unannounced visits to 18 major fleet concentration areas annually to assess risk management behavior and compliance with established policy. The end goal is to ensure unit-level commands have proper risk identification measures, good communication, and appropriate risk accountability at the appropriate level within the chain of command. Between fiscal year 2022 and fiscal year 2023, we are on pace to reduce Class A mishaps across the aviation and afloat enterprises.

LEARNING TO ACTION BOARD (L2AB)

The Learning to Action Board (L2AB) addresses Navy-wide systemic problems, risk of organizational drift, and failures to learn which have led to catastrophic incidents and negative trends in performance. The primary lines of effort for the L2AB include continued focus on correctional efforts related to the USS *Bonhomme Richard* fire, the Red Hill fuel spill, and a review of the actions taken after the USS *McCain* and USS *Fitzgerald* at-sea collisions in 2017. L2AB efforts have led to the establishment of Naval Safety Command, the re-prioritization of $260 million for fire prevention and response related funding, identification and assignment of 104 action items to improve shore-based fueling operations, and improving Navy Command and Control structure to better align the force and remove unnecessary and previously unidentified risk. Future efforts for L2AB include assessing the investigations into recent suicides, examining fleet infrastructure, and streamlining the Navy's assessment process. These efforts are undertaken with the goal of addressing unmitigated risk, driving accountability, bringing tangible solutions to long-standing deckplate issues, and increasing fleet readiness.

MAINTENANCE INFRASTRUCTURE OPTIMIZATION

The Navy remains committed to the long-term strategic goals in our Shipyard Infrastructure Optimization Program (SIOP), and we are grateful for the Committee's strong support for SIOP. Today, the average age of U.S. naval shipyard facilities and related infrastructure is 62 years. Our four public shipyards are each more than a century old and rapidly degrading, requiring major upgrades and reconfiguration. SIOP provides a strategic roadmap for necessary investments, and when fully executed, will enable three overarching achievements: (1) deliver required dry dock repairs and upgrades to support current and planned future classes of nuclear-powered aircraft carriers and submarines, namely the *Ford*-class and *Virginia*-class with the *Virginia*-class Payload Module (VPM); (2) optimize workflow within the shipyards through significant changes to their physical layout; and (3) recapitalize industrial plant equipment at all four public shipyards with modern technology that will substantially increase productivity and safety. The Navy remains committed to working with the Congress, Department of Defense leadership, shipyard workforce, impacted communities, regulators, and industry leaders to determine the best path forward for modernization efforts at each shipyard. President's Budget 2024 requests $2.7 billion for SIOP efforts, while we intend to program approximately $10 billion across the next 5 years of SIOP activities. In line with maintenance initiatives, planning for placement of facilities and work process is informed by process analysis through Area Development Plans (ADP).

The Navy has made good progress in SIOP execution. At Portsmouth Naval Shipyard, we have completed construction of the super flood basin and commenced con-

struction on two new dry docks. At Norfolk Naval Shipyard, we have completed construction of the Production Training Facility and awarded the contract for repair to berths 40 and 41. At Pearl Harbor Naval Shipyard, we have just recently awarded the contract for the Dry Dock 3 replacement.

Closely related, the Fleet Readiness Center (FRC) Infrastructure Optimization Plan (FIOP) aims to reduce risk associated with aging FRC infrastructure. The Navy is transforming WWII-era organic aviation depots into modernized Maintenance, Repair, and Overhaul repair centers. We are achieving this by streamlining production workflows, upgrading aged equipment and facilities, and implementing digital technologies to increase readiness at a reduced cost. Enterprise master planning is expected to be complete in fiscal year 2025 and will result in a detailed strategic investment plan that optimizes work flow, increases productivity, and balances investment decisions.

The Navy has made good headway in Fleet Readiness Center Infrastructure Optimization Plan execution as well. At FRC Southeast, we completed renovation of an aircraft hangar in support of 5th generation weapon systems and funded the F–135 engine test cell modification. At FRC Southwest, we funded the CMV–22 aircraft maintenance hangar. Across the enterprise, we completed digital modeling of current production workflows at three aviation depots, and we began optimizing capability and capacity throughout the aviation depots by establishing initial centers of excellence and implementing site-specific workloads.

SHORE INFRASTRUCTURE

President's Budget 2024 supports continued sustainment of our shore facilities and prioritizes restoration and modernization of key infrastructure. Shore facilities are critical enablers supporting our operational forces and their families, and many of these facilities are beyond their expected service lives and require recapitalization. We commissioned a Navy utilities system assessment at Joint Base Pearl Harbor-Hickam (JBPHH) and received preliminary results. We also commissioned a 5-year recapitalization plan for JBPHH to be completed by November 2023. More broadly, the Navy is developing a 30-year, multi-FYDP, Navy-wide infrastructure plan that anticipates and plans for the needs, requirements, sustainment, and future for shore infrastructure.

CYBER READINESS

Although the readiness of the force has historically been viewed through the lens of the readiness of our people and equipment, the nature of warfare is changing, and we must recognize the importance of cyber readiness in our forces. The Navy's cyberspace superiority vision identified three main pillars that guide the service: secure, survive, and strike. The "secure" pillar is foundational to the vision and requires constant investment in cybersecurity defenses as adversaries develop new vulnerability exploits. The Navy envisions that it consistently fields best-in-class cybersecurity safeguards, retains its excellent cyber talent and cultivates a professional cybersecurity and cyber-warfighting culture. The "survive" pillar requires training the Navy workforce to respond to cyber-attacks that will inevitably occur. Not only must our people be ready to respond to cyber-attacks, our infrastructure and platforms must be resilient and survivable. Last, the "strike" pillar requires the Navy to develop and field capabilities that allow us to operate in cyberspace with lethal effects when authorized. The Navy's President's Budget 2024 budget request increases investments in cyber security, cyber resiliency, and cyberspace operations capabilities while adding funds to improve and standardize Cyber Mission Force readiness. We also are creating dedicated cyber-designators and ratings for our officer and enlisted personnel that work in this critical warfare field. Just like the sailors that man our ships and operate our aircraft, we must cultivate, train, and retain a world-class cyber workforce, both military and civilians, to help us navigate the three pillars of our cybersecurity vision.

MUNITIONS

Our focus on holistic readiness also drives the need to increase our investments in munitions, particularly since this area has historically been a bill payer for other priorities. We continue to work with industry to identify manufacturing challenges and provide investment opportunities to streamline testing and increase production. The Wartime Acquisition and Sustainment Support Plan has helped organize and focus the efforts to overcome this long-term underinvestment, including conducting tabletop exercises with industry to understand barriers to increased munitions production. We are using multi-year procurement authorities for Standard Missile–6 Block 1A/1B (SM–6), Naval Strike Missile (NSM), Long Range Anti-Ship Missile

(LRASM), and Advanced Medium-Range Air-to-Air Missile (AMRAAM), and accelerating production and increasing resiliency across multiple weapon systems, including the Trident II life extension supporting nuclear deterrence, Land Attack Tomahawk, Maritime Strike Tomahawk, AMRAAM, and MK 48 Heavyweight Torpedo (HWT), while maximizing the industrial base by making investments to increase future production capacity on Tomahawk, Advanced Anti-Radiation Guided Missile-Extended Range (AARGM-ER), and SM–6.

MANNING

Faced with historic recruiting challenges, Navy has sharpened our enduring attention to retention efforts. We are implementing a range of mitigations to maximize retention, including: Special Duty Assignment Pay, Special Duty Incentive Pay, Assignment Incentive Pay, and Selective Reenlistment Bonuses. Overall, Navy retention remains healthy.

Similar to the other services, the Navy is experiencing a particularly arduous recruiting environment in fiscal year 2023 for both Active Duty and Reserve recruiting. We entered this fiscal year with a record low Delayed Entry Pool after exhausting all means to meet the recruiting goal in fiscal year 2022. In fiscal year 2023, we expect to miss our Active Duty recruiting goal 6,000 sailors short of our 37,700 goal. Additionally, we expect to finish approximately 3,000 sailors short of our 10,330 recruiting goal for the Navy Reserve. We are using all available levers in fiscal year 2023 to increase recruiting, while maintaining our standards, including: raising the age ceiling on enlistments to 41 years old for new accessions; allowing up to 20 percent of new enlisted recruits to be CAT IV recruits by pairing CAT IV individuals with appropriate opportunities in certain ratings; standing up Navy Recruiting Reserve Command to have a dedicated recruiting force for the Reserve component mission along with a Permanent Professional Recruiter designation; increasing the maximum Enlistment Bonus to $50,000; and implementing a Future Sailor Preparatory Course, modeled after the Army's Future Soldier Preparatory Course, to raise the readiness standards of potential recruits.

The Navy is committed to fully manning sea billets in support of the National Defense Strategy. This goal requires significant recruiting and retention efforts that will take time. The Navy has more than 143,000 sailors at sea; with a peak of 146,373 in April 2022. The number of sailors on operational sea duty is significantly higher than in 2017—an increase of 7,000 for all sea duty units. Yet while the overall number of sailors on operational sea duty continues to increase compared to previous years, thousands of sea billets remain unmanned. To mitigate these gaps at sea and maintain combat lethality, we continue to prioritize manning for deployed and next-to-deploy forces. This tiered approach is being further matured with the implementation of the Surface Manning Experience (SURFMEX) program to better understand each sailor's training, qualifications, and ship-class history. This program, based on the success of the Aviation Manning Experience (AMEX) program, enables us to fill billets with people who are the best fit for the job.

SAILOR AND FAMILY READINESS

We remain committed to improving sailors' quality of service, which includes both quality of life and quality of work. The Navy is significantly increasing investments for Unaccompanied Housing (UH) Restoration and Modernization. To focus our efforts, we initiated a QR Code program to simplify reporting of maintenance issues, resulting in a 24 percent improvement in reporting that facilitated more timely resolution of issues.

We are keenly aware of the unique challenges of those sailors working in the shipyards. President's Budget 2024 includes $258 million of investments in shipyard quality of service. This includes $11 million for CVN–79 off-ship housing, three parking garages for sailors and marines, two multi-use facilities supporting recreation, and building and modernizing berthing barges. We are also pursuing quality of service pilots, such as wider access to Wi-Fi during availabilities.

We remain committed to Navy families and the need to provide affordable, high-quality child-care options. President's Budget 2024 adds three new Child Development Centers (CDC) in Hampton Roads, Little Creek, and Guam, and funds continued planning for 12 additional CDCs across the FYDP. We are also increasing capacity within our existing childcare programs through increased fee assistance, increased entry-level salaries for direct-care workers with automatic pay raises at the 18-month mark, Child and Youth Program employee discounts for child care, and inclusion of retention bonuses. Additionally, by including it in our fiscal year 2024 budget, the implementation of the $15 per hour minimum pay rate requirements for

Federal employees, including Appropriated and Non-Appropriated Fund employees, continues to support and anticipate improvement in recruitment and retention.

We are increasing education opportunities for sailors across the Fleet. The U.S. Naval Community College provided educational opportunities for over 1,000 sailors enrolled in Associate Degree programs, with over 60 earning certificates to date. The U.S. Naval Community College is increasing student enrollment to 3,500 by the end of 2023. These are core elements of developing and educating our future warfighters and leaders.

The Navy is dedicated to creating a culture intolerant of sexual assault and sexual harassment. We are actively implementing the Department of Defense's Prevention Plan of Action 2.0. We continue to focus on: increasing reporting and decreasing prevalence of sexual assault through integrated primary prevention; refining response capabilities; treating victims with compassion; providing quality care; and addressing the emerging challenges associated with male reporting of sexual assault. Incorporating recommendations from the Independent Review Commission (IRC) on Sexual Assault in the Military, as approved by the Secretary of Defense, the Navy has implemented meaningful policy changes, including: (1) in formal sexual harassment cases, requiring the investigating officer to come from outside the command of the complainant and the subject; (2) ensuring that a victim who contacts a helping professional either must receive services from that office or get a "warm hand-off" to the appropriate service provider, known as the "No Wrong Door Policy"; and (3) hiring more than 225 full-time prevention personnel (fiscal year 2022-fiscal year 2025). We also implemented "Safe to Report," ensuring a victim who has reported sexual assault cannot be disciplined for minor collateral misconduct. Finally, the Navy has stood up the Office of Special Trial Counsel in preparation for changes to the military justice system enacted in NDAA 2022 that will transfer jurisdiction for sexual assault, domestic violence, and other covered offenses in 2023 and sexual harassment in 2025 to independent specialized prosecutors.

We continue to prioritize access to the full continuum of mental health resources for our sailors, aiming to utilize the right care, at the right level, at the right time. Our sailors receive mental health services in primary care, specialty clinics, and via virtual health platforms, and we continue to expand our virtual options. Valuing the importance of giving sailors access to mental health resources, over 36 percent of our Active Duty mental health providers are now assigned to sea-going commands. We are investing in efforts that will help sailors earlier, before there is a crisis when able, and certainly after they report an issue. To this end, we are providing training to improve resiliency and prevent suicide, while expanding Operational Virtual Mental Health, assigning more Chaplains to fleet units, enhancing mental health interventions, and embedding mental health experts where able. We also continue to improve coordination to ensure sailors are directed to the most appropriate service to meet their mental health needs. In February 2023, we published a comprehensive Mental Health Playbook designed to assist Navy leaders in preventing, mitigating, and addressing mental health issues across the Fleet.

## CONCLUSION

The Navy's warfighting advantage is built on the readiness of our platforms, our places, our partners, and, most importantly, our people—the sailors and civilians who stand ready to fight and win. In the face of adversaries that work every day to out-build and out-gun us, our sailors and civilians are able to out-think, out-work, and out-fight any adversary. The talent standing the watch is unmatched, by any metric. This All-Volunteer Force, the loyal Americans who raised their hands to support and defend our Constitution, reflects the Navy's core values of Honor, Courage, and Commitment, and the fighting spirit of our Nation.

Your Navy is tackling complex and multifaceted challenges, focusing on both the present and the future. It is essential that the positive momentum of the fiscal year 2023 budget continues, so that we can support the peacetime promotion our national security interests and remain ready for prompt and sustained combat.

I thank you for the opportunity to testify today, and look forward to working closely with you in the future.

Senator HIRONO. Thank you, Admiral. General Smith.

**STATEMENT OF GENERAL ERIC M. SMITH, USMC, ASSISTANT COMMANDANT OF THE MARINE CORPS, DEPARTMENT OF THE NAVY**

General SMITH. Chair Hirono, Ranking Member Sullivan, and distinguished Members of this Subcommittee, I am pleased to appear before you today to discuss Marine Corps readiness in the fiscal year 2024 budget. Your Marine Corps remains the Nation's expeditionary force in readiness.

We are ready to deploy to deter adversaries, and when that deterrence fails, ready to strike and enable others to strike. We also provide the crisis response forces that American citizens abroad and our allies have come to expect from their marines.

We provide these expeditionary combined arms forces utilizing the minimum 31 amphibious warships that the Congress has directed. Those ships provide the organic mobility required to bring all of our assets to bear at the critical time and place for our combatant commanders.

The most important asset that we bring to bear remains the individual marine. Our modernization efforts known as Force Design, ensure that we are manned, trained, and equipped to deter peer adversary, and to campaign into a position of advantage should deterrence fail, and lethal force be needed.

Our modernization efforts are required to fight and win on future battlefields, make no mistake. Our aviation readiness has increased more than 10 percent in the past few years thanks to the work of this Subcommittee to provide us with the operations and maintenance funding we need, and due to our aviation modernization and reorganization efforts.

When a Marine Expeditionary Unit deploys on a big deck L class amphib warship today, they provide the combatant commander with 66 percent more fifth generation aircraft than before we made our Force Design changes. Our efforts to modernize our training and education are bearing fruit as we produce an even more lethal marine.

From our basic rifleman training to our service level training exercises, we are becoming more lethal. Our new training integrates our joint and organic fires, improved communications, updated ISR [Intelligence, Surveillance, and Reconnaissance] to sense, make sense, track, and destroy targets at ranges and complexities never before seen by our Marine Corps.

Our individual marine remains the most lethal weapon on the battlefield. Our efforts to improve the quality of life of those warriors, and to retain them once we train them, are vitally important. Your continued support matters to them and their families, and I thank you for it. I look forward to your questions. Thank you for letting me appear before you today.

[The prepared statement of General Smith follows:]

PREPARED STATEMENT BY GENERAL ERIC M. SMITH

Chair Hirono, Ranking Member Sullivan, and distinguished Members of the Subcommittee, thank you for the opportunity to appear before you today to address the readiness of your Marine Corps.

The Marine Corps remains the Nation's expeditionary force-in-readiness—a forward postured naval force ready to deter adversaries, respond to crisis and conflict,

and contribute to Naval and Joint Force operations. Our identity as marines centers on being ready to deter, fight, and win. As individual marines, as units, and as a Corps, *everything we do is in support of warfighting advantage and being most ready when the Nation is least ready.* This is our obligation to the American people.

Readiness requires a combination of people, equipment, and training—all of which leaders must resource and sequence to meet both current and future challenges. In alignment with the 2018 and 2022 National Defense Strategies (NDS), we have identified the People's Republic of China (PRC) as our pacing challenge. The PRC is the competitor against which we must measure our ability to deter, fight, and win. Furthermore, Russia's unprovoked and illegal invasion of a sovereign nation has demonstrated their willingness to break the international rules-based order. We must consider our military readiness to deter Russian aggression in collaboration with our North Atlantic Treaty Organization (NATO) allies and partners. We must also remain ready to respond to persistent threats from North Korea, Iran, and violent extremist organizations.

Our fiscal year 2024 budget request will sustain key modernization investments from the preceding four budgetary cycles. We will focus on maintaining the tempo and capabilities brought to bear through our Force Design initiatives and investments. Through this deliberate effort we will ensure marines operating forward can respond to crisis, contribute to Joint and Naval campaigns, enable integrated deterrence, and conduct the day-to-day forward campaigning necessary to build advantages with our allies and partners. We are also enhancing our talent management and training and education efforts to make, train, and retain the marines that create our warfighting advantage.

While the focus of this modernization is to sustain a warfighting advantage against our pacing challenge, these changes are theater-agnostic and applicable against a range of competitors and adversaries around the globe. We are building a force capable of executing our emerging concepts, not a force exclusively tailored to them. In every possible future environment, Marines will be prepared for the harsh, violent realities that war brings. Force Design training and manpower enhancements will ensure we remain ready to fight in the most austere conditions imaginable, because at the core, our single greatest asset is the individual marine. These changes will ensure the marine Corps maintains its legacy of being ready to fight in every clime and place.

Inseparable from our ability to respond to emergent crises is the readiness and availability of the amphibious warship fleet. The 2023 National Defense Authorization Act codified the requirement for no less than 31 L-Class Amphibious Warfare Ships and made the Commandant of the Marine Corps responsible for developing the amphibious warfare ship requirements for the Department of the Navy. The amphibious warfare ship inventory must consist of no less than 10 LHA/LHDs, 21 LPDs, and an additional 35 Medium Landing Ships (LSM) to provide our Fleet Marine Force with the organic maritime mobility and maneuver platforms required to execute active campaigning as a function of integrated deterrence and the ability to maneuver forces in times of conflict.

We continue to develop, experiment with, and quickly implement concepts and capabilities that best prepare our marines for the challenges ahead. We will continue to remain good stewards of the taxpayer's dollars, prioritizing investments that provide the Joint Force with a warfighting advantage. Maintaining readiness is central to our efforts and we will continue to devote the funding necessary to ensure our forces remain capable and ready to respond to any crisis, anywhere on the globe, at any time. Every day or dollar lost means your marines shoulder more risk. The on-time budget passed by this Congress mitigates risk and funds the equipment, training, and personnel required to execute our mission. The work of this committee ensures that we can continue to achieve the readiness our Nation requires and that our marines and their families deserve. We thank you for your continued support and oversight of our modernization efforts, which ensures the lethality of the Marine Corps and allows us to remain "First to Fight."

## ENHANCING WARFIGHTING READINESS

Our competitors and adversaries are making advances in areas where the U.S. has historically maintained dominance. Weapons wielded by tactical units now have ranges of hundreds of nautical miles, coupled with tremendous precision. The ability to communicate, once uncontested on the battlefield, is now challenged from our home stations to our objective areas. Even our air and naval superiority is challenged by peers and near-peers using readily available technology. Additionally, China, Russia, and other actors are using maritime gray zone activities below the threshold of armed conflict that subvert international law, pressure our allies and

partners, and jeopardize U.S. national interests. The Marine Corps recognizes these challenges and is taking action to ensure we provide ready and credible forces to deter foes, respond to crisis, fight, and win against any adversary.

*Crisis Response*

The Marine Corps continues to be the Nation's crisis response force of choice. Over the past year alone, marines have supported humanitarian assistance operations for the people of the Pacific island of Kiribati, the people of the Caribbean island of Haiti, and the people of Turkiye.

The Marine Corps' ability to project and sustain Marine Expeditionary Units (MEUs) from Amphibious Ready Groups (ARGs) provides the Nation and Combatant Commanders with combat credible forces, capable of being launched from international waters on forward deployed amphibious warships without any need for access, basing, or overflight. The demand signal from Combatant Commanders for the MEU to maintain a forward maritime presence cannot be overstated. The MEU provides Combatant Commanders with the ability to campaign, fight, and build critical relationships with allies and partners through security cooperation and interoperability exercises. They also ensure American citizens and our allies can be safely evacuated from anywhere on the planet. The 31 amphibious warship fleet supports the forward presence of the MEUs for crisis response and enables marine forces to rapidly seize and defend key maritime terrain and sea lines of communication to preclude horizontal escalation in both crisis and conflict. Our MEUs, embarked on an absolute requirement of a 3-ship ARG, ensure that Americans and allies in distress are protected.

The recent deployment of the 22d MEU with the KEARSARGE ARG highlights the utility and importance of this capability. In May 2022, the 22d MEU, in concert with Task Force 61/2, participated in the NATO Exercise NEPTUNE SHIELD 22. This exercise integrated high-end maritime expeditionary strike capabilities and demonstrated the responsive employment of maritime ballistic missile defense capabilities in support of NATO priorities and objectives. The following month, the KEARSARGE ARG and the 22d MEU supported Exercise BALTOPS 22. This exercise provided a unique opportunity to strengthen the combined response capabilities critical to preserving freedom of navigation and security in the Baltic Sea. It also fostered critical relationships as marines from the 22d MEU conducted ground and air insertions and amphibious landings alongside Swedish and Finnish counterparts. The actions of this MEU while forward deployed contributed to integrated deterrence and strengthened vital relationships with allies and partners.

Key investments within our fiscal year 2024 budget request, such as the Amphibious Combat Vehicle (ACV), will enhance the readiness of our crisis response forces. This budget request continues procurement of the ACV, which provides significant improvements over the legacy Assault Amphibious Vehicle (AAV) in mobility, lethality, protection, and safety. ACVs enable crisis response forces ship-to-shore mobility from amphibious warfare ships, providing flexible response options for the Joint Force to maneuver to key locations without port facilities. Additionally, ACVs, combined with amphibious warfare ships and organic aircraft, provide the forcible entry capability required when the Marine Corps must seize or defend advanced naval bases in support of our statutory responsibilities. As with any new system, our ACV's have experienced some initial fielding challenges. We are working with our industry partners to address identified mechanical issues as we continue fielding and testing the new platform. We have also experienced training mishaps with four vehicles in the surf zone. After several months of dedicated efforts, and the institution of a Transition Training Unit in our Amphibious Assault School, we have a phased plan that will allow our ACV operators to employ the vehicle safely and effectively.

*Stand-in Forces*

Another significant Marine Corps contribution to the Naval and Joint fight is stand-in forces. Stand-in forces are units that are task-organized, trained, and equipped to disrupt an adversary's plans at every point on the competition continuum. These forces operate inside an adversary's weapons engagement zone, strategically placed in areas where they can expose malign behavior, gain and maintain custody of maritime targets, execute sea denial and support sea control operations with precision long-range fires, or canalize adversaries into areas where our Naval and Joint Forces can bring even more weapons to bear. They are the leading edge of the Joint Force. Adversaries are not able to simply ignore stand-in forces and accomplish their military goals. Stand-in forces impose costs on competitors and adversaries by causing them to expend their limited assets to attempt to locate them. This capability further enables Naval and Joint Force maneuver. Stand-in forces are

survivable, in that they can independently persist for short periods and can reposition using organic maritime mobility to avoid targeting. Their physical and electromagnetic signatures are not easily detected, and they possess the lethality to fight in cases when detected. Stand-in forces place as little sustainment burden as possible on a logistics system already in need of improvement. They require less support in austere environments than previous formations because they can produce some of their own water and power; use local food and fuel sources; and be resupplied by air, surface, and subsurface means. Finally, stand-in forces operate forward in partnership with other nations to support an integrated approach to competition. This includes conducting security cooperation, security force assistance, and exercises to strengthen relationships and develop maritime domain awareness. These capabilities enable stand-in forces to provide the credible deterrence and credible combat power that supports the NDS in both competition and conflict.

Our fiscal year 2024 budget request supports stand-in forces by investing in key Force Design programs, including ground-based anti-ship missile capability, sensors, and communication networks. The Marine Corps' anti-ship missile capability, Navy-Marine Expeditionary Ship Interdiction System (NMESIS), will provide stand-in forces a precise, lethal, and survivable ground-based anti-ship missile capability. We will field the first six operational launchers to the 3d Littoral Combat Team in the fourth quarter of fiscal year 2023. We will continue to field NMESIS from fiscal year 2024 through fiscal year 2030 prioritizing our units supporting Marine Littoral Regiment (MLR) and MEU deployments. Our continued procurement and fielding of the F–35 provides 5th generation tactical air (TACAIR) capabilities both ashore and afloat to enhance situational awareness and afford commanders freedom of maneuver in a highly contested environment. Uncrewed systems, including the MQ–9A Extended Range uncrewed aerial system (UAS), provide our Joint and Naval Forces with the sensing capabilities necessary to detect targets and pass targeting data to the Joint kill web. These advanced systems increase a stand-in force's situational awareness and extend its area of influence. The Marine Corps is investing in resilient communication networks to transmit and receive information from the Joint Force at the satellite, aerial, and terrestrial levels. This ability will ensure the Marine Corps can provide necessary sensor and reconnaissance capabilities to the Joint Force while simultaneously being supported by the Joint Force when we conduct our own strikes.

In March 2022, we activated the 3d MLR, which now has an established littoral combat team, combat logistics battalion, and littoral anti-air battalion. The MLR recently deployed to execute the first Service-level MLR training exercise. This exercise focused on sensing and making sense of the battlefield enabling the MLR's ability to rapidly close kill webs. The Marine Corps will activate the 12th MLR in Japan in fiscal year 2025. This MLR, operating inside of the first island chain, will be equipped with advanced intelligence, surveillance, and reconnaissance (ISR) as well as long range strike and anti-ship capabilities to maintain continuous maritime domain awareness and provide decision space for the Joint Force Commander. These units will enhance our ability to deter our peer competitors, reassure our allies and partners, and contribute a unique capability to the maritime fight.

*Organic Naval Mobility*

One of the most valuable characteristics of our naval expeditionary forces is their ability to use organic Naval mobility. The ability to position and reposition throughout a battlespace without relying on strategic lift, host nation permission, or deepwater ports is critical to our survivability, resiliency, and lethality and significantly reduces the stress on US TRANSPORTATION COMMAND. Amphibious warfare ships and the agility they provide the Joint Force are a national strategic capability. No other platform, when properly matched with the Navy and Marine Corps team, provides more flexibility and capability to the Combatant Commanders. To ensure our readiness in the future, we must ensure Marine crisis response and stand-in forces have the organic maritime and littoral mobility platforms they require. To sustain a forward presence of two ARG/MEUs, to have the capacity to surge up to five ARG/MEUs if directed, and to execute the missions the Nation requires, the Marine Corps requires no less than 31 L-Class amphibious warfare ships and 35 LSMs.

Amphibious warfare ships and LSMs are complementary, but not interchangeable. Amphibious warfare ships enable MEUs to conduct global crisis response, project and sustain forces in a contested environment, and aggregate combat power for forcible entry. The 35 LSMs will provide the organic littoral mobility required to transport and sustain Marine Littoral Regiments throughout an adversary's weapons engagement zone. These LSMs will be affordable, beachable, and distributable. They will be capable of operating in support of campaigning activities and as necessary,

in a contested environment to support Naval Expeditionary Combat Forces. These 35 LSMs will provide task organized Marine units of up to 80 personnel the ability to quickly reposition throughout the littorals and land anywhere, causing adversaries to expend ISR to find them. Deterrence and the ability to rapidly respond to crisis or conflict requires the presence of combat credible forces. Amphibious warfare ships, combined with LSMs, make that possible. The Navy and Marine Corps recognize the necessity for a littoral maneuver bridging capability until the LSM becomes available. A littoral maneuver bridging solutions evaluation team will explore a wide range of existing platforms to inform future investments.

Support for amphibious investments in fiscal year 2024 and future years is crucial to our ability to provide the naval expeditionary force our Nation requires. It is also vital to our ability to effectively train for our missions. Without maintaining amphibious warfare ship readiness, Navy and Marine Corps proficiency standards are at risk. Over the past 5 years, the number of marines serving aboard naval shipping has decreased by 20 percent; in 2018, 16,000 marines performed sea-duty, but less than 13,000 did so in 2022. Lack of amphibious ship availability, not because of inventory but instead due to insufficient maintenance, caused this decline. The first time a marine conducts wet-well operations, or a pilot conducts a night landing on a pitching and rolling deck, cannot be on the way to the fight. It must happen now, on ready and maintained warships, to ensure that the Joint Force is consistently prepared for combat. We cannot build trust and interoperability with our allies and partners from a distance, nor can we contest malign activities without being present. Without the necessary number of well-maintained amphibious warfare ships, we may find that China is the first to arrive at a disaster or crisis, just as they did last year in the Pacific Island of Tonga. This cannot happen again.

*Aviation*

Marine aviation provides the vital organic mobility, lethality, protection, sustainment, and connectivity critical to Marine Corps combat readiness and Naval expeditionary warfare. Readiness rates for marine aviation continue to rise. The average mission capable rate in 2022 was 66 percent—an increase from 65 percent in fiscal year 2021 and 57 percent in fiscal year 2018. Notably, our deployed squadrons and MEUs are averaging a mission capable rate of more than 80 percent. This combined with our revised construct allows us to deploy 10 F–35Bs aboard our MEUs compared to the traditional six AV–8B contingent; offering the COCOMs a 66 percent increase in TACAIR—5th Generation aircraft—with our MEUs time now. Maintenance planning and process improvements at the organizational level have reduced Non-Mission Capable Maintenance rates from an average of nearly 23 percent in fiscal year 2018 to less than 16 percent in fiscal year 2022. Enterprise-level initiatives at the intermediate and depot-level promise to increase aircraft on the flightline and reduce the turn-around time for high-level maintenance and modernization evolutions. We owe these readiness gains to targeted funding for key readiness enabler accounts, success of various platform-specific readiness initiatives, and the day-in and day-out hard work of our marine maintainers.

Several aviation accomplishments over the past year demonstrate our readiness for current and future missions and deserve specific attention. The F–35 continues to provide the Navy and Marine Corps team a lethal and survivable strike and sensor platform for operations in a highly contested environment. In 2022, two F–35C squadrons, VFA–147 aboard the USS *Carl Vinson* and VMFA–314 aboard the USS *Abraham Lincoln,* trained, deployed, and operated together throughout the INDOPACOM theater demonstrating the unique contributions of this platform to integrated deterrence. The Marine Corps' newest heavy-lift helicopter, the CH–53K, continues to demonstrate impressive performance in terms of distance, airspeed, and gross weight lift capacity that no other rotary platform can match. This aircraft will provide the heavy organic lift and operational reach necessary to support distributed maritime operations across vast distances in the Pacific and elsewhere. The CH–53K achieved initial operating capability in April 2022, and our first CH–53K squadron will soon reach full operational capability. With the approval of full rate production for this program in December 2022, our budget request includes funding for 15 aircraft in fiscal year 2024.

Our KC–130J and MV–22 squadrons continue to be the workhorses of our aviation fleet. Combatant Commander demand for what these platforms bring to the fight remains high; our marines continue to fly and fix these aircraft at an impressive rate to support that demand. This past year, the Marine Corps activated Marine Aerial Refueler Transport Squadron 153 (VMGR–153) in Kaneohe Bay, Hawaii, and by 2026, VMGR–153 will bring 15 KC–130J aircraft to the Pacific, substantially increasing the reach and sustainment capabilities of marines throughout the theater. While increasing our reach with our KC–130J squadrons, we are working to

address our MV–22 readiness rates. This year, the Marine Corps identified the negative impacts of life limits on Input Quill Assemblies on our MV–22 fleet. We are prioritizing our squadrons forward deployed and afloat on MEUs for quill replacement to maintain a ready and capable crisis response force. The MV–22 remains one of our most capable platforms with more than 480,000 successful flight hours. Continued stable and predictable funding in support of Marine Aviation flight hour, sustainment, and aviation spares accounts will be critical to our ability to continue this level of performance and readiness.

*Contested Logistics*

Logistics is our pacing warfighting function; our ability to position and sustain our combat power sets the limit on what is operationally possible. In the most demanding operating environments, every action—regardless of the domain—may be monitored, tested, or disrupted by a competitor or adversary. To succeed, we will have to be lighter, more mobile, and more expeditionary than ever before. Therefore, we must focus on the capabilities, relationships, formations, and equipment that will enable us to meet these logistical challenges at every level. If we fail to do this, we will have the very best capabilities that we cannot sustain.

To meet the logistics challenges of our operating environment, the Marine Corps is working to increase our global logistics awareness, diversify our distribution methods, improve our sustainment ability, and make our installations ready for a contested environment. These lines of effort and initiatives will give flexibility to our marines by allowing them to produce their own support and reduce the need for support from outside units. In an effort to push repair parts availability as far forward as possible, we continue to increase our additive manufacturing capability. In the future, prestaging some of this equipment with our allies will increase our readiness and make us more lethal. We are also developing a family of uncrewed logistics systems tailored to littoral environments, which will increase our resupply flexibility and reduce risk to Marine forces. The Tactical Resupply UAS (TRUAS) will provide stand-in forces an autonomous and organic logistic capability to sustain distributed operations. These efforts, along with others, will provide the reliable and flexible logistics support our marines will need in the most challenging conditions.

Continued work and investment are required to build a logistics network that is resilient against peer and near-peer competitors. The Joint Logistics Enterprise underpins all of our logistics initiatives, enabling a global, dynamic, and modernized supply chain. Continued investment in logistics information technology systems enabled with artificial intelligence/machine learning capabilities will help ensure a low-signature logistics ecosystem that protects the identity and location of stand-in forces. This work will create the sensor-based, data-driven, and networked environment necessary for the sustainment of stand-in forces and crisis response forces in contested environments.

*Infrastructure*

Marine Corps installations are more than buildings, ranges, and airfields; they are warfighting platforms that provide vital support for every one of our missions, our marines, sailors, and their families. We must resource them as such and ensure they remain ready to support not only today's requirements but also future challenges.

The Marine Corps is focusing on a facilities investment optimization plan that will improve facilities' readiness over time, beginning with the highest-valued assets. More than 25,000 marines are currently forward-postured west of the International Date Line and positioned inside China's weapons engagement zone. Modern and resilient infrastructure in the Pacific will enable our ability to stand-in or respond to crisis. With the activation of Marine Corps Base Camp Blaz on Guam, Pacific infrastructure projects such as the consolidated Marine Expeditionary Brigade Headquarters, Artillery battery facilities, and the 9th Engineer Support Battalion's Training Complex will support marines being stationed on Guam. Additionally, fiscal year 2024 projects such as the Child Development Center, Recreation Center, and the Religious Ministry Services Facility will greatly enhance the quality of life that marines deployed to Guam need and deserve.

*Information Environment Modernization*

Information technology is a critical enabler for the command and control of marine forces, management and protection of information assets, and collaboration with mission partners. Network modernization is the foundation from which we sense, make sense, and act. We are modernizing our end user devices, improving our enterprise and tactical communication transport infrastructure; migrating to cloud computing; and investing in artificial intelligence and machine learning. Additionally, the Marine Corps has invested extensively in Zero Trust efforts to combat

against cyber exploits attempting to infiltrate our networks. Without the ability to secure, operate, and defend our networks in a degraded or denied communication environment, we will not capitalize on the capabilities of the Joint All Domain Command and Control framework. Our investments will provide seamless, agile, resilient, transparent, and secure infrastructure to support Joint Force information advantage.

## TRAINING AND EDUCATION

We are also transforming our training and education (T&E) enterprise to produce the most skilled and ready marines to meet the demands of the all-domain battlefield of the future operating environment. To achieve this end State, our T&E continuum must continue to evolve, guided by informed decisions through data driven analysis. We will focus on shaping marines into more cognitively agile, intuitive problem solvers, capable of making bold and consequential decisions in an uncertain environment.

One way we are modernizing our T&E continuum is transforming our learning methodology to an outcomes-based learning (OBL) approach. OBL orients learners on "how" to think about challenges in multi-disciplinary contexts, vice merely "what" to think with respect to procedures or processes. It requires the learner to be more engaged and adaptive and grow as a problem-solver who can confidently and reliably process information and comprehend key variables within a specific contextual environment.

We have launched a new Infantry Marine Course at our enlisted Schools of Infantry, which is incorporating the OBL approach. This course is a four-phase program of instruction that takes marines, as a unit, through increasingly complex practical application exercises, challenging their critical thinking and decisionmaking skills. The backbone of this course, the Sergeants of our instructor cadre, remain with their individual squads throughout the entire 14 weeks of training. The benefits of this new system are multifold: from the earliest stages of their training, marines build cohesion, learn how to fight as a team, and strengthen our Corps, as the instructors return to the Fleet Marine Force as more capable leaders.

We are also modernizing our training ranges with improved instrumentation, feedback, and safety tools. Additionally, we are developing a Live, Virtual, and Constructive (LVC) Training Environment across the entire training enterprise, which will provide the persistent and adaptive training needed to prepare marines to project and sustain our stand-in forces and leverage organic aviation and naval mobility capabilities. With our enhanced synthetic training capabilities, we will prepare our marines to operate within information degraded and contested logistics environments.

Since the beginning of 2021, we have been executing our integrated training model at both recruit depots, fulfilling the Fiscal Year 2020 NDAA requirement at Parris Island, and are on track to meet the requirement at San Diego as directed. Our current efforts allow both male and female recruits to receive positive examples of leadership from both genders to produce environments that foster respect and unit cohesion. Through these efforts, we will continue to shape the resilient, capable, and adaptive marines required to fight and win in the future operating environment.

## TAKING CARE OF OUR PEOPLE

Our single greatest asset remains the individual marine. By properly equipping the warfighter with the technology and armaments to be the most lethal on the battlefield, we ensure a physical advantage over our competitors. Modernizing our training and education programs will allow us to maximize the talents and skills of our marines, enabling an even more important psychological and mental advantage over those same competitors. We must still, however, remain equally focused on taking care of our individual marines. In line with these efforts, we have added $14 million to our childcare funding line in fiscal year 2022 to hire more childcare employees at higher wages. We have additionally submitted two military construction projects to build two new Child Development Centers to increase on-base capacity at our installations reporting the largest waitlists. We must invest in our people, ensure their safety, and protect them from stressors on and off of the battlefield so that when crises emerge, our marines remain resilient and ready to fight and win.

### *Talent Management*

The changes the Marine Corps is making to its capabilities and concepts will only be fully realized if we have parallel advancements and investments in our people. We are executing Talent Management 2030 (TM2030), our strategic plan for mod-

ernizing the way we recruit, develop, and retain marines. TM2030, and its subsequent annual update, describes a fundamental redesign of our personnel system, empowered by new statutory authorities provided by Congress. It details how the Marine Corps will implement new models for recruiting and retaining talent, modernize our assignments process consistent with our warfighting philosophy, introduce new measures to increase career flexibility, and optimize access to modern digital tools, processes, and analytics, consistent with industry standards. Our end State is to improve combat lethality and capability by better identifying and cultivating an individual Marine's talents through education, training, mentorship, and experience, and assigning them to positions where they can best contribute to the success of their unit and the Corps. Through these efforts and engaged leadership, the Marine Corps will be able to capitalize on the totality of America's talent.

The Marine Corps is already executing several initiatives to modernize and improve personnel management. To increase family stability while sustaining warfighting capability, we are increasing Permanent Change of Station (PCS) flexibility and efficiencies, such as reassigning marines locally when a career-enhancing billet is available or using distributed learning rather than issuing permanent change of station orders for additional education. We are also working to extend individual marine's tours, vice our legacy 3-year model, to better maintain unit cohesion, while minimizing stress on our marine families. We are in the process of implementing our 360-degree Leadership Review Program to improve leadership effectiveness by identifying blind spots and areas of improvement for personal growth. We have also implemented an opt-out option for promotion boards this year to increase career flexibility.

Our fiscal year 2024 budget request also includes vital investments in manpower information technology (IT) systems modernization—the digital backbone for our talent management efforts. Our goal is to consolidate the more than 70 disparate manpower applications and systems into a small number of applications on a single IT system, bringing our human resource practices in line with best practices in the private sector. These actions, along with other policy changes and investments will help us more fully harness the breadth and depth of talent within our force and the American people.

We are succeeding in our overall retention goals. However, the Marine Corps is experiencing some of the same recruiting challenges impacting the entire Department. Our fiscal year 2024 budget reflects these recruiting challenges by seeking an end strength of 172,300 Active Duty marines. For the Reserve Forces, our plan is to recruit and retain 33,600 marines in fiscal year 2024.

*Suicide Prevention*

As part of our larger human performance management efforts, we continue to examine our mental health programs and suicide prevention efforts. Every life lost to suicide is one too many. We continue to pursue all opportunities to reduce the incidence of suicide amongst our marines, sailors, and their family members. The Secretary of Defense recently released a report from the Suicide Prevention and Response Independent Review Committee (SPRIRC). We are reviewing the recommendations of this Committee and implementing those tasks that have been approved. Internally, the Service recently gathered a senior leader advisory group from across the Marine Corps operational force, installations, Chaplain Corps, and medical teams to address suicide prevention. In concert with recommendations from this advisory group, we are prioritizing integrated training and education, enhancing our prevention workforce, increasing access to information for our marines, sailors, and families, heightening our focus on spiritual fitness, and bolstering our new join process. We are committed to ensuring our marines, sailors, and their families are equipped and informed to navigate stressors both on and off duty in healthy and productive ways.

*Sexual Assault Prevention and Response*

As a Service, we will remain steadfast in ensuring commanders and their senior enlisted counterparts are responsible for the climate of our units, assisting victims with care and support, and appropriately holding perpetrators of sexual assault accountable. To combat sexual assaults, the Service continually strives to improve education and training to our marines. This past year, through updated Combined Commandership Course, First Sergeants' Course, and updated Sexual Assault Prevention and Response (SAPR) Annual Training for Non-Commissioned Officers, we have equipped commanders and leaders to address command climate and understand risk and protective factors from the individual to community levels. We are engaging in integrated prevention and leveraging trauma-informed leadership and staffs in prevention and response. We have also established the Office of Special

Trial Counsel in line with the 2022 NDAA military justice reform. In the coming year with funding enacted in our fiscal year 2023 request, the Marine Corps plans to hire 369 positions across the enterprise in support of the Secretary of Defense directed Independent Review Commission on Sexual Assault in the Military. These new positions will include 121 Sexual Assault Response Coordinators, 194 Victim Advocates, 23 Primary Prevention Integrators, and 31 Equal Opportunity Advisors. The integration of these positions will enable communication and collaboration on policy, plans, and training to improve the efficacy of the Marine Corps SAPR program.

*Safety*

Over the past several years, we have lost the lives of too many marines in preventable training incidents. Losses of life in training are not the "cost of doing business." It is a price no marine or sailor should have to pay. Safety remains a pillar of Marine Corps warfighting advantage and readiness. We have made significant progress in improving our safety performance and culture; however, there is still much work to do. Mishap rates over the past year have returned to the historical norms observed prior to COVID (fiscal year 2020 and fiscal year 2021). This rise coincides with a return to normal operational tempo but is in no way seen as "acceptable". Our goal is to reduce mishap rates, not accept them.

This past year the Marine Corps has deliberately focused on making our ground forces safer. We are utilizing the aviation safety templates that maximize standardization, checklists, and instruction to reduce mishaps in our ground safety campaign. The Marine Corps Safety Division is also working in concert with the Inspector General of the Marine Corps to reinvigorate the Command Safety Assessment Program. This program will increase opportunities for oversight, share lessons learned, augment training, and communicate best practices across the Marine Corps.

This coming year, we will fund a new contract for the Aviation Safety Awareness Program, an anonymous hazard reporting system for all aviation units. This will leverage advanced data analytics and allow our unit commanders to review submissions to provide an immediate and timely response to safety issues. We will also continue briefs and presentations to our aviation community across the globe to discuss previous mishaps and their causal factors. These efforts, in conjunction with the dissemination of our safety resources and references, will allow marines at all levels to learn from past mistakes. We cannot eliminate the risks of our profession, but we will do all we can to mitigate those risks and elevate them to senior leaders before high-risk events take place.

CONCLUSION

The United States is a maritime nation, and as such, it requires a Marine Corps ready to deter, fight, and win in the maritime domain. As America's premier global crisis response force, your Marine Corps is ready to accomplish these missions today, and with your continued support, will be even more ready tomorrow. On behalf of all of our marines, sailors, civilians, and families, we thank you for your support for our efforts to remain the most ready when the Nation is least ready.

Senator HIRONO. Thank you, General. General Allvin.

## STATEMENT OF GENERAL DAVID W. ALLVIN, USAF, VICE CHIEF OF STAFF OF THE AIR FORCE, DEPARTMENT OF THE AIR FORCE

General ALLVIN. Chair Hirono, Ranking Member Sullivan, and distinguished Subcommittee Members, on behalf of our Air Force Secretary and Chief of Staff, thank you for the opportunity to discuss the critically important topic of readiness.

We greatly appreciate this body's continued partnership and support in delivering the resources necessary for the Air Force to respond to today's threats while preparing for tomorrow. Events of the past year remind us that global actors have the capability and the intent to challenge peace and stability.

In the case of our pacing challenge, People's Republic of China (PRC), the speed at which they are developing advanced capability and capacity should serve as a warning for us to act with a greater

sense of urgency. We must maintain the necessary advantage to deter them from violent pursuit of objectives at odds with our national interests. Your Air Force is laser focused on this task.

Our readiness starts with our airmen, both uniformed and civilian, who consistently prove to be our greatest strength and competitive advantage. Since the beginning of the All-Volunteer Force 50 years ago, we have been fortunate enough to attract the best of America's youth in sufficient numbers, but recent realities have put us under pressure.

As a result, we will likely not meet our recruiting goals this year. We are aggressively exploring multiple options while streamlining processes to attract a broader pool of talented Americans to our formation.

We know how focused and resilient airman is a ready airman, and we must continue to demonstrate that we value our servicemembers and their families. We continually explore opportunities to expand or initiate programs that support better quality of life, and we greatly appreciate this Committee's support in those efforts.

The air crew deficit persists due to several factors, but the shortage has not extended to the operational units or pilot training basis. We are continuing on the path to transform our approach to pilot training to increase production, while leveraging numerous monetary and non-monetary programs to retain the experience of our trained aviators.

We look forward to working with the Committee on these programs, as well as our pursuit of targeted reform, current legislation to enable the hiring of contract simulator instructors to maximize training and optimize manpower.

While the proposed budget increases weapon system sustainment by $1.1 billion, this still only resources 87 percent of the estimated requirement due to sustainment challenges of our ever-aging fleet, inflation, supply chain issues, and labor costs. We are pursuing improvements in reliability and maintainability, supporting initiatives that advance data driven decisions.

This drives efficiency in what we do today and enables responsiveness in dynamic wartime environments. Significant challenges and tough decisions still lie ahead. We must be thoughtful in adequately funding our readiness accounts, while pursuing the right investments to develop the advanced capabilities to meet future threats.

This year, we feel we have struck the right balance. In closing, I would offer that this Congress can perhaps make the most positive impact on our readiness through a timely budget appropriation. Thank you very much and I look forward to your questions.

[The prepared statement of General Allvin follows:]

PREPARED STATEMENT BY GENERAL DAVID W. ALLVIN

INTRODUCTION

Chairwoman Hirono, Ranking Member Sullivan, and distinguished Members of this Subcommittee, on behalf of the Secretary of the Air Force, Hon. Frank R. Kendall III, and the Chief of Staff of the Air Force, General Charles Q. Brown, Jr., thank you for another opportunity to testify on Air Force readiness.

Our Air Force is an indispensable contributor to national security in an increasingly complex international strategic environment. We exist to defend the Homeland, rapidly deploy combat power globally, and fight as part of a joint, allied, and partner team. We are responsible for two-thirds of the Nation's strategic nuclear triad, which is foundational to defense priorities. Our conventional and nuclear capabilities provide unique options for our Nation's leaders, with the inherent attributes of speed, range, agility, and lethality. We remain the world's premier responder in conflict, crisis, and contingency. Our mission—to "Fly, Fight, & Win . . . Airpower Anytime, Anywhere"—is underwritten by our readiness, today and in the future. With the strong support of this Congress for fiscal year 2023, we continued advancing on initiatives and operational imperatives to strengthen and reimagine readiness to adapt to the changing character of war. However, the pace of progress remains insufficient to meet our changing and complex security environment.

Key to our readiness is predictability in providing the resources and tools to execute our strategy. Adequately funding our readiness accounts while pursuing the right investments to develop advanced capabilities to meet future threats must be done thoughtfully. We believe we have struck a responsible balance. Our plan does involve 'new starts,' which will be threatened with a Continuing Resolution, thus delivering a gift to our strategic competitors and potential adversaries we cannot afford—time. We will continue to work with Congress to provide all that is required for a timely, year-long appropriation for fiscal year 2024.

Secretary Kendall has stated that we must make tough choices in the short term to meet our pacing challenge—the People's Republic of China (PRC). As our Air Force balances to ensure sufficient readiness for today and tomorrow, four additional factors stand out among many that influence our ability to do so. The first factor is our aging fleet of aircraft and aging Minuteman III intercontinental ballistic missile (ICBM) forces. The average age of our aircraft is 29 years old, with 53 percent of those well past their expected service life. Pair this with these assets' continued high utilization rate in joint force missions, and the challenge gets more costly. The Minuteman III ICBM, first deployed in 1970, is the world's oldest land-based strategic missile system. We appreciate the support of Congress to enable us to begin this necessary transition from less relevant capabilities and look forward to continued collaboration in the future. The second is the pace at which the People's Republic of China (PRC) advances its capabilities. The PRC continues its seemingly uninhibited advancements in capabilities designed to put the United States in a reactive position with respect to pursuing our national interests. Third, due to various factors such as inflation, a tight labor market, unanticipated cost growth, experienced maintenance personnel, and other factors, we continue to face challenges maintaining the viability of our legacy systems that prove less relevant in the face of advancing threats. Fourth, reaching and recruiting our youth and attracting a new generation of inspired Americans is critical and increasingly challenging in a world where shrinking familiarity with military service negatively affects the propensity to serve. Airmen are our greatest asset—if we lag in recruiting great Americans, readiness will suffer in the very near future. The cumulative effects of these four factors provide the undercurrent for enhancing our State of readiness, operational agility, and long-term strategic readiness investments.

## RECRUITING

Our success as an Air Force starts and ends with our airmen. Over the years, we have been fortunate to attract the best of America's youth in sufficient numbers to fill our formations. Recent realities have increasingly challenged the recruiting landscape. Among them were the limitations for our recruiters to access schools and interact with youth in those schools during the pandemic. The tight job market and reduced familiarity with the military further reduce the appreciation of the value of service and the opportunities we provide. As a result, the Active Duty component barely met recruiting goals in fiscal year 2023, with the Guard and Reserves falling short. While we estimate that all three components will not meet goals this year (Active Duty will likely be short by at least 10 percent, while the Guard and Reserves may be closer to 30 percent short), we are aggressively attacking the issue.

We have focused on simple adjustments to open to a broader pool of American applicants ages 17 to 21 due to 77 percent of that cohort not meeting current eligibility requirements but possessing the necessary talents we need for the future. We continue to evolve pre-existing restrictions to remove barriers to service. For example, policy changes on body composition during accession and tattoos have already proved beneficial within the first few months. Changes to body composition standards to match DOD standards have yielded over 300 newly eligible recruits in less than 3 months. Tattoos are the third highest disqualification factor for enlisted ac-

cessions. Under the new tattoo policy, 43 applicants enlisted who would have previously needed a waiver to serve. This initiative is on track to add approximately 2,500 recruits in 12 months. We increased initial enlistment bonuses and put $15 million in fiscal year 2023 toward reinvigorating the Enlisted College Loan Repayment Program, making the service a more attractive option after higher education. Additionally, Members of Congress are uniquely positioned to support recruiting efforts by nominating talented future cadets to the U.S. Air Force Academy, amplifying stories within communities, and meeting with servicemembers. This essential teamwork is necessary to reach our upcoming youth and share that service is a viable, advantageous, and honorable choice for our great Americans.

## CURRENT READINESS

*Aircrew Manning*

The national pilot shortage continues to challenge our Air Force. In fiscal year 2022, our Total Force crewed pilot numbers decreased by roughly 250, leaving the Total Force 1,900 pilots short of the 21,000 required to meet global requirements. The persistence of this challenge is based on several factors. Robust airline hiring continues to draw away experienced pilots critical to producing, training, and developing new pilots. The loss of experience will negatively impact production and retention because this loss is most prevalent in the Field Grade Officer pilot year groups. However, we are taking prudent risks in reducing rated staff manning to not take risks in front-line combat capability or pilot production. Said another way, to date our pilot production challenges have not increased risk in our combat readiness. The reduced rated staff manning will affect individual professional development but ensures we have placed experience and talent in the right place to maintain combat-ready forces.

To improve retention and production, we persistently consider and invest in several monetary and non-monetary incentive programs to address our aircrew's quality of life and service concerns. Monetarily, we sustain the Aviator Bonus, Aviator Incentive Pay, Special Duty Pay, and Critical Skills Pay. These include long and short-term contracts, with the former offering more money upfront for a longer commitment. We restructured our Aviator Bonus to focus on crewed pilots and our most experienced aviators, offering lump sums to initial eligible crewed pilots and assignment of preference incentives for early sign-ups. The bonus maximum increased for longer commitments—specifically to $50,000 a year. We also highly value the non-monetary incentives for retention and are pursuing various quality-of-life initiatives that address the all-important needs of our airmen and families. We appreciate this Committee's steady support for these vital retention programs.

Along with aircrew retention, we are continuing pilot production investments. In fiscal year 2022, Undergraduate Pilot Training (UPT) programs produced 1,276 pilots—105 less than the previous year and 224 pilots short of the 1,500 total goal. Maintenance and supply challenges for aging training aircraft compound the throughput timelines. T–38 engine shortages, T–6 and T–38 cartridge and propellant-activated devices (ejection seats) issues, and low GS civilian simulator instructor manning all challenged our ability to meet pilot production quotas. President's Budget 2024 pursues investments to tackle the sustainment and availability issues ($12.6 million T–38 Safety and Sustainment, $11.3 million T–6 modifications). To mitigate these challenges, we continue to investigate creative solutions to these persistent challenges and develop accelerated training paths. The force has implemented numerous transformational programs to accomplish this production increase through non-traditional means. Initiatives include measures that integrate a spectrum of immersive technology and devices to increase effectiveness during the airborne portion of flight training and improve the readiness of graduates for the challenges of 5th-generation aviation. 19th Air Force pursues avenues and technology to accelerate training timelines while sustaining the integrity of the force's premier pilot training program.

Undergraduate Helicopter Training-Next departs from the traditional paradigm of requiring initial fixed-wing training before proceeding to rotary-wing training. We expect this to yield more than 90 additional graduates annually and meaningful savings without impacting quality. Air Mobility Fundamentals—Simulator (AMF–S), a simulator-only course now being deployed at scale, provides modern and cost-effective crew and multi-engine fundamentals training, allowing for the divestment of and transition from the T–1 legacy platform. AMF-S will be deployed at all UPT bases by the end of calendar year 2023.

The GS Civilian Simulator Instructor (CSI) manning has been a chronic challenge in increasing training throughput. We are pursuing an initiative to offer several in-

centives to recruit and retain CSIs, including Direct Hire Authority; Recruitment, Relocation, and Retention incentives; and Special Salary Rates.

Combining these transformational programs, the Air Force continues to target a steady-State pilot production potential of 1,580 pilots annually. We will continue to monitor, assess, and improve to ensure we are getting the maximum production in quantity and quality that our current resources enable.

*Flying Hour Program (FHP)*

The FHP continues to be a valuable metric of aircrew readiness. In fiscal year 2022, the Air Force executed 100 percent of resourced flight hours, meeting 92 percent of requirements. While we met a high percentage, several factors challenged our ability to fly programmed hours. For example, 6,642 of our total force maintenance positions are currently unfunded, approximately 50 percent of our aircraft maintenance personnel have less than 6 years of experience, and we face significant supply part shortages and longer-than-expected depot timelines. Timely divestments of less relevant legacy systems will enable us to transfer this qualified maintenance manpower to the appropriate new platforms. Additionally, unforeseen events such as natural disasters, downtime for time compliance technical orders (TCTOs), and other unanticipated contingencies also influence our ability to satisfy our FHP requirements.

The fiscal year 2024 budget is consistent with fiscal year 2023 flying hour programming and reflects the hours the Air Force can reasonably fly given existing constraints. Despite the challenges with executing FHP, we continue to search for innovative ways to generate aircraft and quality aircrew training. These include virtual and synthetic training environments to complement real-world training and replicate complex scenarios.

*Weapon System Sustainment (WSS)*

WSS metrics illustrate a meaningful story regarding divestment to invest in modern technology to bolster readiness. The Air Force maintains substantial capabilities through the WSS portfolio. WSS spans 100 weapon systems, from the oldest B–52 to emerging cyber systems. For fiscal year 2024, the United States Air Force WSS funding request is $17.9 billion, representing an increase of $1.1 billion over fiscal year 2023. The fiscal year 2024 budget funds 87 percent of all WSS requirements, which is the highest in 4 years [fiscal year 2023 (86 percent), fiscal year 2022 (85 percent), fiscal year 2021 (86 percent).] The WSS portfolio continues to grow as a result of sustaining old aircraft beyond design life, fielding new weapon systems with increased technical complexity, increasing operational requirements in Contract Logistics Support platforms, and navigating above-inflation increases in labor and material costs.

The Air Force's overall objective is to balance future readiness (modernization and recapitalization) and current readiness to support the National Defense Strategy. Competition for finite resources necessitates prioritizing weapon systems most relevant for deterring and defeating a peer adversary in a future conflict. Our requested WSS funding level has been carefully crafted to ensure near-term capabilities are assured while allowing investment in future capabilities.

ENHANCED OPERATIONAL READINESS AND AGILITY

*Air Force Force Generation (AFFORGEN) Model*

Over the past few years, the Air Force has developed an AFFORGEN model in coordination with the Office of the Secretary of Defense and the Joint Staff. The AFFORGEN model is designed to align how we present forces to combatant commanders with the ability to have predictable, readiness-building training for our airmen. Over the past two decades, we have offered forces to the joint force in an unsustainable manner, and the readiness impact is becoming more apparent in the face of our pacing challenge. Through AFFORGEN, the USAF has matured and refined what it means to provide combat-credible forces that heighten deterrence and assurance. Doing this refinement better demonstrates the responsiveness and flexibility inherent in airpower and does so in a manner that enables us to sustain readiness today and tomorrow.

Across the force, training and doctrine development focuses on the assumption that our forces will operate in complex, disconnected, and decentralized environments. AFFORGEN provides discipline to the process, ensuring we have sufficient time to train against the highest end threat, avoid over-utilization of the force (crews and platforms), and clarify to the Joint Force what the Air Force can provide to the fight. The AFFORGEN model expands the traditional 1:2 deploy-to-dwell rotational model to a 1:3 model, thereby creating sustainable capacity that satisfies the requirements of the National Defense Strategy.

AFFORGEN also optimizes resources for appropriate allocation to training and preparation cycles to best ready our forces. We expect all AFFORGEN Force Elements to reach Initial Operating Capability in fiscal year 2024, at which time the Air Force will fill Combatant Commander requirements using Force Elements.

STRATEGIC READINESS INVESTMENTS

*Nuclear Modernization*

As the threat to international stability continues to grow and the pace with which the PRC and others develop, the importance of strategic deterrence and long-range strike cannot be understated. The USAF remains fully committed to the recapitalization of the nuclear enterprise. The service's sacred duty is to ensure the President of the United States has flexible and responsive deterrence options in this increasingly adversarial environment. We must provide a robust nuclear readiness portfolio to continue upholding our promise to the Nation.

To deter both large-scale and limited nuclear attacks against the United States, our allies, and partners, the DAF is recapitalizing our two legs of the nuclear triad, our nuclear command, control, and communications (NC3) systems, and capabilities to further strengthen regional deterrence. We are modernizing our ICBM forces, bombers, and the F35-A dual-capable fighter aircraft. We are replacing the nearly 50-year-old Minuteman III ICBM with the critically needed LGM–35A Sentinel system. The service recently unveiled the B–21 Raider for the bomber leg, a testament to America's enduring advantages in ingenuity and innovation and proof of our commitment to building advanced deterrence capabilities. Our stalwart B–52 forces, which we are modernizing, and the development of the Long-Range Standoff Weapon bolster the bomber leg. Additionally, the F–35's nuclear certification is on schedule and supports both U.S. and NATO countries. These weapon systems and our robust nuclear command and control provide the flexible and responsive nuclear capabilities needed to deter strategic attacks, assure Allies and partners, and achieve U.S. objectives if deterrence fails. The $23.1 billion fiscal year 2024 President's Budget supports these critical efforts and continues to get significant technologies into the hands of the warfighter by the end of the decade.

Modernizing the ICBM leg of the triad includes a heavy reliance on DOD Military Construction (MILCON) as we synchronize new weapons delivery platforms and support facilities. MILCON is consistently affected by the volatility of inflation, tight labor markets, and supply chain issues, as is the case across the country. The DAF will remain transparent in communicating necessary costs and investments to nuclear modernization. However, stable and consistent congressional funding remains vital to ensuring a safe, secure, and credible nuclear deterrent.

*Operational Test and Training Infrastructure (OTTI)*

The Air Force uses several physical training ranges to sharpen the combat effectiveness of aircrews; however, the current operational training infrastructure does not deliver the high-end training capability the Air Force and the joint force need. The Air Force is modernizing select ranges based on the Threat Matrix Framework to address this shortfall. The fiscal year 2024 President's Budget will allow us to continue the fiscal year 2023 plan to modernize the Nevada Test and Training Range and the Joint Pacific Alaska Range Complex to emulate a peer or near-peer adversary environment by fiscal year 2030. In addition, we plan to upgrade six primary test ranges and maximize operational airspace for 5th-generation tests and training while maintaining flexibility to accommodate military, public, and environmental concerns. The planned improvements include high-fidelity threat emitters, jammers, and improved targets, as part of an integrated system that allows ranges to function as realistic and reactive adversaries.

The Air Force requires additional investment in synthetic training capabilities to meet the National Defense Strategy priorities. For example, using a robust, dependable, and cost-effective synthetic training capability, the Air Force Joint Simulation Environment (JSE) effort will enable aircrew and other operators to train and maintain readiness against our near-peer adversaries. JSE also helps us overcome live-fly training limitations, such as range size constraints restricting our ability to replicate threats and allowing potential adversaries to observe our training. While we will always leverage the opportunities for synthetic training, we believe that some airmanship can only be gained in the air, and we will continue to refine the balance.

*Installation and Infrastructure Resilience with Agile Combat Employment (ACE)*

The Air Force is committed to protecting our airmen, civilians, contractors, families, and resources and the forward operating locations from which they will operate in a future threat environment. We currently rely on a limited number of isolated, forward air bases in the Western Pacific and several fixed bases in Eastern Europe.

Advances in potential adversary long-range precision strike capability increasingly threaten these bases. Competitors who continue to invest in weapon magazine depth, range, and accuracy hold our locations, as well as our allies and partners, at risk. Additionally, potential adversaries confront U.S. efforts to gain allied and partner access, basing, and overflight. As a result, we must define and acquire a mixture of cost-effective responses to these threats that enable resilient forward basing.

In concert with Secretary Kendall's Operational Imperatives, the Air Force has developed multiple initiatives to bolster resilient forward basing in a contested environment. Specifically, the Agile Combat Employment (ACE) scheme of maneuver increases readiness by dispersing operations from large bases to networks of smaller locations. ACE complicates the adversary's wartime calculus and denies them the lucrative targeting opportunities known, fixed, and unprotected locations provide. Through ACE, the Air Force is transitioning from an extensive, centralized, unhardened infrastructure to smaller, dispersed, resilient, and adaptive basing that includes active and passive defenses. Refining ACE continues to be worked at all echelons of the force, including updating Air Force Doctrine, testing in ongoing exercises and worldwide training, and innovating at the unit level. In fiscal year 2024, $1.2 billion funds the resilient forward-basing operational imperative, including ACE funding. We continue our work on identifying and creating capabilities and formalized training programs to field an agile force that sets the theater and establishes distributed command and control.

ACE requires a sound mixture of investments to ensure its effectiveness. The force must invest in and acquire prepositioned essential supplies and fuel, improved agile expeditionary communications, and active and passive defenses of distributed operating bases. We must expand the number of bases from which we can operate and provide a mix of defenses, concealment, and hardening, as well as the ability to maintain logistics support from multiple locations. In key areas, ACE also requires war reserve materiel, aircraft support, and other logistics. Additionally, a critical enabler of ACE is the development and training of multi-capable airmen. Supplying today's airmen with modernized training programs and tools is paramount to actualizing this development.

Without support from Congress and our regional Allies and partners, our investments are not assured. We must continue to develop and build partner nation capabilities to defend our air and space bases and guarantee the means to effectively communicate with our allies so we may all be ready for the future as one team.

CONCLUSION

As we head into a pivotal year, our airmen continue to innovate against the challenges they confront and remain our greatest asset. Airmen deliver airpower time and again despite manning challenges, aging fleets, and cumbersome supply and technical issues. Their devotion to duty, resilience in the face of adversity, collective enthusiasm, and innovative spirit deserves our admiration and unwavering support. Our airmen answer our Nation's call in an era of strategic uncertainty that demands unprecedented agility. Our team has the intellect and energy required to overcome any challenge—at home or abroad.

What is important here is an investment in readiness will ensure that our force will have what they need for the fight tomorrow and be well-equipped to meet the future. Modernization is readiness—tomorrow's readiness. Investing in modernization is necessary to prepare our Homeland defenses for existing threats and anticipated threats for tomorrow. We understand that hard decisions must still be made, which require some significant risk-taking at levels we might not be used to shouldering. The Committee, the Department of Defense, and the Air Force share the tough decisions and risks. We will work collectively across the Department of Defense and look forward to the continued partnership with this Committee and this Congress to accurately assess the impact of our decisions and to deliberately assume and mitigate risks accordingly.

On behalf of the 689,000 Total Force airmen and their families, thank you for helping us optimize and ready our force to defend this great Nation.

Senator HIRONO. Thank you, General. General Thompson.

**STATEMENT OF GENERAL DAVID D. THOMPSON, USSF, VICE CHIEF OF SPACE OPERATIONS, DEPARTMENT OF THE AIR FORCE**

General THOMPSON. Chair Hirono, Ranking Member Sullivan, and distinguished Members of the Subcommittee, on behalf of the Secretary of the Air Force and Chief of Space Operations, thank you for the opportunity to testify today regarding the readiness of the Space Force.

The capabilities and benefits provided from space are essential to our way of life and crucial to effective military operations in every other domain. The overriding consideration in assessing Space Force's readiness remains the dramatic shift to the space domain from a comparatively benign military environment to one that is undeniably contested.

This shift was a compelling reason for the creation of the Space Force 3½ years ago. Since then, with the tremendous support of Congress, the Space Force has moved out aggressively to address the challenges the Nation faces in space.

We have begun to pivot to more resilient and defendable architectures to ensure soldiers, sailors, airmen, and marines have the space capabilities they need across the spectrum of conflict.

We are designing and developing constellations that address the migration of missions to space, including moving target indication, domain awareness on land at sea and in the air, command control, and the movement of data to enable the way the Joint Force expects to fight in the future.

Finally, the Space Force has begun the shift to a new training and readiness approach, the Space Force Generation Model. SPF AFFORGEN reached its initial capability on October 1st, and once complete, will deliver space forces that are truly ready against a pacing challenge. The President's Fiscal Year 2024 Budget Request reaffirms the Space Force's commitment to that threat informed shift.

It extends the pivot to more resilient architectures based on proliferated constellations, intelligence driven space domain awareness, aggressive cybersecurity, measured investment in space superiority, and combat credible forces anchored in a full spectrum test and training enterprise. While much remains to be done in all of these areas, the main challenges to Space Force generation today are twofold.

The first challenge to creating a combat ready Space Force is an advanced full spectrum test and training infrastructure with high fidelity threats, realistic mission simulators, a professional aggressor force, and a suitable range. This system of systems will allow us to validate tactics, test system limitations, and train operators in live and synthetic environments against a thinking adversary.

Without this infrastructure, guardians will not have defendable systems, proven tactics, or the confidence of competence they need to win conflict in space. The second and primary challenge to Space Force readiness lies in the availability of budgetary resources in a timely manner to execute all we are planning to do.

Congress has been a tremendous partner in defining and building the Space Force the Nation needs. In each year of its existence,

the Space Force has seen a 12 to 15 percent increase in its budget year over year.

The Space Force is prioritizing its readiness in all facets to effectively deter adversaries, and if necessary, prevail in conflict. The most important thing Congress can do to help in that regard is pass an on-time budget. Thanks for your support and steadfast partnership. I look forward to your question.

[The prepared statement of General Thompson follows:]

PREPARED STATEMENT BY GENERAL DAVID D. THOMPSON

INTRODUCTION

Chairwoman Hirono, Ranking Member Sullivan, distinguished Members of the Subcommittee; thank you for another opportunity to testify on the current status of, and future plans for, the readiness of the U.S. Space Force. On behalf of the Secretary of the Air Force, Hon. Frank Kendall, and the Chief of Space Operations (CSO), General Saltzman, I continue to appreciate this Subcommittee's strong support as we develop and sustain the ready space forces our Nation requires.

Space is a unique domain that is not only fundamental to our national security, but to our very way of life. And yet, the space domain has dramatically shifted to a contested environment, where our potential adversaries are increasingly active, aggressive, and disruptive. As a result, Congress created the Space Force to better protect our national interests and directed that it be organized, trained, and equipped to: (1) provide the United States freedom of operation in, from, and to space, (2) conduct prompt and sustained space operations, and (3) protect US interests in space.

However, our competitors continue to rapidly field space capabilities that threaten the United States' freedom of action and national security. While the world has witnessed the destructive and irresponsible nature of some of these threats, to include direct-ascent antisatellite tests, potential adversaries' daily activities in the space domain endanger and imperil our national security. To effectively support a comprehensive approach to integrated deterrence, the Space Force's lean and agile force posture must be prepared to respond, as necessary, to defeat such hostile activity. Simply put, to retain and improve U.S. advantages in the space domain, we must field the most resilient, effective, and ready space forces across the globe.

Readiness is ensuring our forces have the tools, training, and manpower to accomplish their critical functions. The Space Force is ultimately responsible for ensuring our guardians are ready to accomplish their missions in an increasingly complex, congested, and contested environment. To meet that task, it is imperative that our force design, readiness standards, and test and training infrastructure adequately prepare our forces for the challenges they face today and are likely to face in the future.

While the Space Force has made significant progress over the past 3 years, there is still more we must accomplish. On November 22, 2022, the CSO outlined three lines of effort to ensure that the Space Force maintains urgency and momentum in the progress we have made over the past 3 years:

- *Field Combat-Ready Forces* so that the Space Force has the personnel, training, and equipment required to prevail in a fight.
- *Amplify the Guardian Spirit* so that the Space Force attracts, develops, inspires, empowers, and retains individuals who thrive in our organization and under our values.
- *Partner to Win* so that the Space Force can collaborate with mission partners to accomplish our critical set of roles and functions.

Underpinning these lines of effort is the critical need to be ready for the high-end fight. We need to deliver and field the forces and capabilities necessary to adequately deter and ultimately dominate potential adversaries.

DELIVERING SPACE FORCE READINESS

*More Resilient and Effective Space Capabilities*

As the CSO recently testified, the Space Force is accelerating its pivot toward resilient satellite constellations, ground stations, networks, and data links; informed by transformational force design analysis. Space Force readiness, and the Department's broader integrated deterrence emphasis, ultimately demands resilient space

systems and capabilities that effectively deter both on-orbit and terrestrial threats. As such, most of the Space Force's on-orbit assets must be proliferated, disaggregated, and distributed.

Through effective and efficient proliferation, the Space Force will not only ensure enduring access to space capabilities, but it will also disincentivize and deter targeted aggression. The President's Fiscal Year 2024 Budget Request demonstrates the Department's significant, analytically informed . investments in resilient systems. Planned upgrades include military Missile Warning, Missile Tracking, Space Data Transport, Command, Control, Communications, Battle Management (C3BM) systems, and space-based targeting proliferated architecture that will be more resilient during a strategic attack.

As always, the Space Force will continue to work closely with DOD and Intelligence Community stakeholders, as well as our allied and commercial partners, to develop and deliver a digital engineering ecosystem that enables the Space Force to rapidly mature innovative concepts into integrated solutions and deliver warfighting capabilities faster.

*Force Design*

A key element of readiness are the capabilities inherent in the systems the Space Force uses to execute its missions. The Space Force, primarily through the Space Warfighting Analysis Center (SWAC), executes a force design process intended to assess future capabilities through the lens of operational need, counter-space threat, and cost.

Additionally, in implementing the National Defense Authorization Act for Fiscal Year 2022, the Secretary of Defense designated the CSO as the Force Design Architect for Space Systems of the Armed Forces. In this new role, the CSO presents the Secretary of Defense with coordinated space-mission force design recommendations for the Armed Forces. Such recommendations are informed by high-fidelity modeling and analysis which balance warfighting performance, resilience against peer adversaries, and affordability. Recommendations include a transition plan to position the Department to make programmatic and budgetary decisions related to science and technology investments, force development, and acquisition. Current force design priorities are space data transport and tactical targeting—both of which are vital to prevailing in peer-to-peer conflicts.

*Operational Test and Training Infrastructure*

At its very core, Space Force readiness requires our systems and operators to be ready for the full spectrum of operations in a contested space domain. And while our organizational structures and processes increase our ability to assess and sustain readiness levels, the Space Force needs an appropriate infrastructure to adequately conduct test and evaluation, advanced training, and tactics development activities against a thinking adversary to effectively deliver readiness generation.

When I last testified before this Subcommittee, I described the Space Force's operating concept and core elements of its Operational Test and Training Infrastructure (OTTI). OTTI is an "umbrella" term, describing a collection of distributed, enterprise-wide test and training systems and processes, effectively integrated and synchronized to establish and sustain combat readiness across the spectrum of conflict. It aggregates multiple program elements and their associated activities, programs, capabilities, and funding.

The Space Force's current OTTI is a loose federation of systems that build proficiency and procedural currency for a benign environment—it does not build warfighting capacity demanded by the current and emerging strategic environment. The Space Force does not yet have the ability to present realistic threat-stimuli to missions specific trainers; conduct integrated—both intra-service and joint—training; or visualize and "experience" the domain.

That said, Congress's strong support for Space Force's OTTI efforts has greatly accelerated these priorities, and the Space Force continues to make significant strides in developing and implementing its planned OTTI architecture, governance structure, and resourcing strategy, which is appropriately reflected in the President's fiscal year 2024 budget request and in the Department's Future Years Defense Program.

*Readiness and Training*

The Space Force continues to prioritize and advance our updated readiness, training, and force generation initiatives. The new Space Force Generation model, SPAFORGEN, reached Initial Operational Capability on October 1, 2022, and cycles guardians through three phases to increase individual and overall force readiness. The "Prepare" and "Ready" phases afford guardians with the time and capacity for training to develop the tools, skills, and capabilities necessary for mission execution

in a contested domain against a thinking adversary. This includes both operational procedures and high-end training to certify forces for contested operations in space.

As part of SPAFORGEN, Space Training and Readiness Command (STARCOM) is making great strides to prepare space forces to prevail in competition and conflict through innovative education, training, doctrine, and testing. Last August, STARCOM completed the first and largest to-date of a new series of exercises that included both live and simulated events to test combat tactics of our Total Force including both guardians and Air National Guard space professionals. As we move forward, STARCOM will continue to increase space-related content and engagement for guardians in Basic Military Training (BMT); Non-Commissioned Officer Academy; United States Air Force Academy; Officer Training School (OTS); and Reserve Officer Training Corps.

*Force Presentation to Combatant Commands*

The Space Force presents space capabilities that underpin all instruments of our national power. Pursuant to law, the Space Force retains the responsibility to organize, train, and equip space forces. To that end, the Space Force generates and presents ready space forces to Combatant Commands to deter threats and, if necessary, prevail in conflict.

Our SPAFORGEN model ensures that forces presented to Combatant Commands can execute missions and tasks and are equipped to make appropriate recommendations on the effective employment, task organization, operational synchronization, and command relationships of space forces. Unlike the previous force generation model, the new approach packages forces into optimized capabilities-based elements and standardizes the way we present forces to the Combatant Commanders. To ensure full integration and synchronization of space activities with other domains in combatant commands' areas of responsibility in 2022, the Space Force activated three new component field commands for U.S. Indo-Pacific Command, U.S. Central Command, and U.S. Forces Korea. Component field command guardians provide space planning and employment expertise, as well as command and control for the Combatant Commanders.

*Unit/Mission Transfers*

In accordance with existing statute and congressional intent, the DOD continues to transfer fully mission-capable space operational units, support equipment, property, and related resources from other services and organizations to the Space Force with no mission degradation or adverse personnel impact.

In fiscal year 2022, the US Army transferred its Satellite Payload, Planning, Management, & Control function, which included five Wideband Satellite Communications Operations Centers, four Regional Satellite Communications Support Centers, Consolidated Satellite Communication Systems Experts, and 502 associated manpower authorizations (302 military/200 civilian). The transfer of this function and associated resources is directly in line with the USSF Military Satellite Communications mission.

Additionally, in accordance with Title 10, United States Code, Section 9086, the DOD successfully transferred the Space Development Agency (SDA) to the Space Force. The Space Force continues to ensure SDA's seamless integration within the service and remains steadfast in its commitment to ensure adequate resourcing and manning.

Looking forward, in fiscal year 2024, the United States Army intends to transfer its Theater Missile Warning Battlespace Characterization (TMW-BC) functions, including four Joint Tactical Ground Station (JTAGS) locations (Osan, Misawa, Al Udeid, Sigonella), one skill qualification Training Suite, the JTAGS Product Office (JPO), and 97 associated manpower positions to the Space Force. The transfer of this function and associated resources is directly associated with the Space Force's Missile Warning mission. The Space Force already operates the Space Based Infrared System constellation and Strategic Missile Warning ground infrastructure; adding the Theater Missile Warning function will consolidate global Missile Warning under one military Service.

*Integration with Allies and Partners*

Allies and Partners represent a significant advantage for the United States. Our strategic competitors do not have the potential for establishing the coalitions and cooperation that the U.S. can establish. This is especially true in the space domain. The Space Force continuously engages with our allied and partner spacefaring nations to guarantee shared military, civil, and industrial success in space. Especially as our competitors continue to demonstrate reckless and dangerous actions within the space domain, it remains imperative to deepen our existing ties with allies and partners to maintain space stability. As the CSO has stated, spacepower is a collec-

tive endeavor, and the Space Force is prioritizing partnerships most likely to deliver combat ready forces and capability to allow the United States and our allies to deter or prevail in a fight.

The Space Force is executing the CSO's Partner to Win Line of Effort which states we cannot succeed without robust joint, coalition, international, interagency, academic, and commercial partnerships. We are striving to eliminate barriers to collaboration in any form, to include over classification and incompatible systems. The Space Force must also prioritize direct collaboration and placing guardians in positions where such collaboration can organically strengthen. To that end, in January 2023 the Space Force published its Guidance for Global Partnerships, which directs the service and all its components to evolve from data-sharing agreements to operations integration, payload sharing, and mission sharing, where appropriate. Further, the Space Force continues to lead international Space Engagement Talks, and efforts to share our force design analysis, which are identifying focused resource commitments that allow trusted partners to share the burden of delivering combat-ready space forces and the spectrum of worldwide capabilities.

*Weapon System Sustainment*

Space Force Weapon System Sustainment directly supports the Space Force's ability to sustain the day-to-day readiness of 52 weapon systems performing Space missions, to include Sensing, Navigation, Satellite Communications, Space Domain Awareness, Battlefield Command & Control, and Space Control. The President's Fiscal Year 2024 Budget Request supports missions to provide space capabilities to the joint force while balancing Service priorities and managing risk. This position takes a predictive planning and proactive approach to mitigating obsolescence as our future requirements continue to grow due to increasing costs for hardware, software, and cybersecurity maintenance driven by aging space systems.

*Facilities and Infrastructure Investment*

Space Force Facility, Restoration, and Modernization and Military Construction total obligation authority enables the Service to prioritize requirements to reduce risk to mission and the force. Structural, electrical, and power improvements to operational facilities reduces risk to mission and enables our joint and coalition partners in the fight, while quality of life infrastructure and facility improvements reduce risk to the force by improving resiliency amongst our guardians, airmen and their families. The Space Force derives almost all of its support from the Air Force, including logistics, security, medical services and human resources; however, the Space Force's ability to prioritize its unique requirements at our 14 installations, more than 70 sites, and other geographically separated units ensures we appropriately align responsibility, resources, accountability and authorities for the Space Force to execute its assigned missions as an independent service.

The Space Force's top installation priorities include sustaining critical facilities and infrastructure that enable the full spectrum of missions—from launch and command and control to post-launch and into the operational phase of sustaining 52 Space Force Weapons Systems.

The President's Fiscal Year 2024 Budget Request reflects an increase from last year due to the Service prioritizing projects that reduce risk to Space and Combatant Command missions at Pituffik Space Base, and the Eastern and Western Ranges to support Assured Access to Space. Moving forward, the Space Force will continue to prioritize projects that increase facility and infrastructure resiliency and Service readiness.

THE GUARDIAN IDEAL AND PROGRESS TO A DIGITAL SERVICE

*Talent Management*

The Space Force continues to shape the guardian experience and foster an organizational culture that empowers exercising mission command to secure American interests in space and contributing our unique space domain expertise in joint operations. The Space Force is setting the foundation to achieve the tenets of the Guardian Spirit, through the Space Force's human capital multi-pronged approach. First, through building a competency-based requirement system and inventorying all competencies and levels of mastery for each guardian, the Space Force can make informed and connected development and assignment decisions, leading to greater guardian involvement in their careers and greater mission accomplishment. Additionally, while we continue to develop a new performance appraisal system to focus on contribution to the team and mission, including multi-sourced input where appropriate, we are implementing a guardian-centric bridging strategy for evaluations tying our values to mission accomplishment.

The Space Force will shift from managing people within prescribed career fields to managing positions based on the competencies and experiences needed to succeed. For instance, we have implemented beta test for aligning competencies and levels of mastery to requirements, and as part of managing talent, we conducted our first development team event for Master Sergeants bringing all Senior Non-Commissioned Officers in line with this concept. Eligible guardians were able to self-nominate for critical positions and State their career desires, and commanders provided recommendations for each eligible guardian as well. During the event, key enlisted leaders assessed each guardian's demonstrated performance, the guardian's potential, the best interest for the guardian, their families, and the best interest of the service to match guardians to key leadership and developmental positions. The inclusion of the guardian's voice enables transparent choice architecture across the enterprise to meet both personal strengths and service needs.

Further, the USSF is in the process of establishing intermediate-level education and senior-level education programs in collaboration with a private university, culminating in a Master of International Public Policy degree starting in Summer 2023. The programs are being designed to meet service and joint professional military education requirements and will be offered to USSF and sister service officers and civilians as well as international and interagency partners. This approach allows the Space Force to tailor its education for leaders for unique space related issues and establish a mechanism, whereby guardians earn a degree from a recognized private university. The collaboration will enable greater capacity to offer STEM electives, opportunities for laboratory research, and increased access to a wider range of commercial space sector engagements along with the traditional elements of joint professional military education.

We expect leaders at every level to take bold, purpose-driven, and data-informed actions, while making full use of their team's diverse abilities to overcome challenges to accomplish our mission as set forth in the National Defense Strategy.

*Space Digital Workforce*

Because of its highly technical nature, the Space Force requires a workforce that retains the digital fluency to rapidly turn data into useful insights to accelerate innovation of operational and business activities. Digital aptitude remains essential to help lead the transformation to becoming an interconnected, innovative, digitally dominant force in order to deter and defeat threats to space operations. To help achieve this goal, the Space Force continues to provide Digital University access to every Space Force member, including civilians, which incorporates curated digital content designed to establish a foundational level of fluency on modern digital topics.

The Space Force remains on the forefront of digital transformation to meet demand for existing and emerging need. The President's fiscal year 2024 budget request builds upon our previous investments and sustains our commitment to creating a space digital workforce capable of meeting our joint warfighter requirements. To this end, the Space Force will continue to build a cadre of organic software coders to streamline software development and promote the adoption of software technology that will prove instrumental to Space Force operations, testing, and training.

## THE WAY AHEAD

The rich history of America's space endeavors is defined by determination, persistence, and willingness to innovate. Now is the time to invest in accelerating such innovation and deter those who seek to disrupt such endeavors. We will not cede our unfettered access to the space domain.

In that effort, the Space Force will continue to prioritize readiness in all capacities. We need to ensure that we field the greatest fighting force, systems, and capabilities necessary to deter potential adversaries from acts of aggression and, if necessary, defeat them in conflict. Our innovative approaches to individual and enterprise-wide readiness will sustain our advantage in space and allow our Nation to pursue groundbreaking civil, military, and commercial capabilities.

As our potential adversaries, particularly China and Russia, continue to make significant space-related advances that broadly threaten our freedom of movement, maintaining space readiness has never been more critical. Antisatellite tests, hypersonic and maneuverable missile demonstrations, and a host of other dangerous and irresponsible behaviors require the Space Force to aggressively deploy effective deterrence mechanisms—including a resilient, reliable, and effective set of space capabilities.

To reiterate, the Space Force's overall readiness depends wholly on our people, equipment, and training. By retaining the optimal quantity and mix of personnel;

fielding and protecting the right systems; and deploying basic, advanced, and continuous full-spectrum training, the Space Force will sustain the resilient, effective, and ready force our Nation requires.

Thank you for your continued leadership and support for the Space Force and our guardians, and I look forward to working with this Committee.

Senator HIRONO. Thank you, General. Ms. Maurer.

**STATEMENT OF DIANA C. MAURER, DIRECTOR OF DEFENSE CAPABILITIES AND MANAGEMENT, ACCOUNTABILITY OFFICE**

Ms. MAURER. Good afternoon, Chair Hirono, Ranking Member Sullivan, and other Members and staff. I am pleased to be here today to discuss key findings and recommendations from our work on military readiness, and what we have found is rather troubling. Broadly speaking, mission capability, can units execute their missions, has declined since 2017.

While the Army and Marine Corps improved in the ground domain, we found declines in the sea, air, and space domains. When it comes to resource readiness, personnel, equipment, training and supplies, we found that the sea domain declined, but units in the ground, air, and space domains generally reported improvements.

Now, of course, improvement does not necessarily mean readiness is where the services want it to be or where they need it to be. There is still quite a lot of ground to make up. For example, only 2 of 49 aviation systems met their annual mission capable goals. The vast majority missed by over 10 percent.

The F–35 program in particular, suffers from a variety of sustainment woes. Fleet wide mission capable rates have declined every year since 2020, and the Air Force, Navy, and Marine Corps face substantial gaps between what it costs to fly the aircraft and what they can afford. We found the Navy had nearly $1.8 billion in deferred ship maintenance, mainly in its cruisers and amphibious ships.

Over a 10-year period, maintenance delays went up and cannibalization also increased, while steaming hours went down. The Navy also faces a significant crewing shortfall, which can harm mission, maintenance, and safety.

The Army needs to improve helicopter safety and address shortfalls in real support and sea sealift training that affect readiness and the ability to move to the fight. The Space Force faces a unique set of readiness challenges, and DOD can better incorporate the evolving space control mission into its strategic readiness approach.

To help with these and other challenges, we made over 130 recommendations in the 37 reports listed in my statement for the record. DOD agreed with nearly all of them and started taking action on many, but over 100 remain open. These open recommendations are opportunities to improve readiness.

Yet, even with all these challenges you just heard, the U.S. military is the best in the world. Our work helps keep it that way. GAO will continue to provide independent, hard hitting, and constructive reports to help the services and help the Congress carry out its important oversight responsibilities. Madam Chair, thank you for the opportunity to testify and I look forward to your questions.

[The prepared statement of Ms. Diana C. Maurer follows:]

United States Government Accountability Office

Testimony

Before the Subcommittee on Readiness and Management Support, Committee on Armed Services, U.S. Senate

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# MILITARY READINESS

# Improvement in Some Areas, but Sustainment and Other Challenges Persist

Statement of Diana Maurer, Director, Defense Capabilities and Management

GAO-23-106673

# GAO Highlights

Highlights of GAO-23-106673, a testimony before the Subcommittee on Readiness and Management Support, Committee on Armed Services, U.S. Senate

May 2, 2023

# MILITARY READINESS

## Improvement in Some Areas, but Sustainment and Other Challenges Persist

### Why GAO Did This Study

Nearly 2 decades of conflict has degraded military readiness. To maintain the U.S. military's advantage across all domains in a new security environment characterized by great-power competition, DOD is working to rebuild and restore readiness while also modernizing its forces. DOD's readiness rebuilding efforts are occurring in a challenging context that requires the department to make difficult decisions regarding how best to address continuing operational demands while preparing for future challenges.

This statement (1) describes how readiness has changed from fiscal year 2017 through fiscal year 2021 in the ground, sea, air, and space warfighting domains and (2) provides information on readiness challenges in the ground, sea, air, and space domains.

This statement is based on published work primarily since 2020 that examined military readiness, operations, and sustainment, among others, in the ground, sea, air, and space domains. To perform this prior work, GAO analyzed Army, Air Force, Navy, Marine Corps, and Space Force readiness, maintenance, personnel, and training data and interviewed cognizant officials.

### What GAO Recommends

GAO has made dozens of recommendations in its prior reports to help improve readiness in each of the domains. Some of the recommendations remain unimplemented, as discussed in the testimony.

View GAO-23-106673. For more information, contact Diana Maurer at (202) 512-9627 or maurerd@gao.gov.

### What GAO Found

Readiness ratings increased in the ground domain and declined in the sea domain from fiscal year 2017 through fiscal year 2021—the most recent data at the time of GAO's analysis—with mixed changes in the air and space domains.

**Change in Domain Resource and Mission Capability Readiness Ratings from Fiscal Years 2017-2021**


Source: GAO analysis of Department of Defense readiness data. | GAO-23-106673

Note: The ratings are based on GAO's analysis of Department of Defense readiness data for selected mission areas—groups of similar capabilities from across the services, such as fighter jets—and force elements—subsets of units within each mission area, such as F-35s—within each of the domains. Resource readiness ratings measure the status of personnel, equipment, supplies, and training. Mission capability readiness ratings measure whether a unit can accomplish its designed missions.

GAO's prior work has identified a wide range of persistent challenges in each domain as the Department of Defense (DOD) seeks to improve readiness.

**Readiness Challenges Identified by GAO in Air, Sea, Ground, and Space Domains**


- Maintenance and supply challenges limit availability of aging aircraft
- F-35 aircraft face sustainment and operational challenges


- Ship sustainment challenges have worsened, with maintenance backlog estimated at $1.8 billion
- Poor condition of infrastructure at the Navy's public shipyards
- Fatigue and crewing shortfalls affecting Navy surface fleet


- Shortfalls in Army rail support and training for operating in contested mobility environments
- Army and Marine Corps need to take action to prevent tactical vehicle accidents


- Space readiness goals and threat standards are unclear

Source: GAO analysis of Department of Defense information; U.S. Air Force/ Senior Airman T. Gordnier; U.S. Navy; U.S. Marine Corps/Master Sgt. C. Matt; NASA (photos). | GAO-23-106673

Looking to the future, DOD will have to balance rebuilding the readiness of its existing force with its desire to modernize. DOD is developing and deploying new weapon systems and considering new approaches for how its units organize and operate. However, DOD will depend on much of today's force for decades to come, requiring continued focus on the readiness of its existing forces.

Chair Hirono, Ranking Member Sullivan, and Members of the Subcommittee:

Thank you for the opportunity to be here today to discuss Department of Defense (DOD) readiness.

For decades, the United States has enjoyed unchallenged or dominant military advantage, according to DOD. DOD could generally deploy forces when it wanted, assemble them where it wanted, and operate how it wanted. In the 2018 *National Defense Strategy*, however, DOD noted that every warfighting domain—ground, sea, air, space, and cyberspace—was and continues to be contested. Potential adversaries, most notably China and Russia, have developed and enhanced their own capabilities. At the same time, our work has shown that nearly 2 decades of conflict has degraded U.S. military readiness. To maintain the U.S. military's advantage across all domains in a new security environment characterized by great-power competition, DOD is working to rebuild and restore readiness while also modernizing its forces.

DOD's readiness rebuilding efforts are occurring in a challenging context that requires the department to make difficult decisions regarding how best to address continuing operational demands while preparing for future challenges. An important aspect of this, across all of the military services, is determining an appropriate balance between maintaining and upgrading weapon systems currently in operational use and acquiring platforms able to overcome rapidly advancing future threats.

This testimony (1) describes how readiness has changed from fiscal year 2017 through fiscal year 2021 in the ground, sea, air, and space domains, and (2) provides information on readiness challenges in these domains.

This statement is based primarily on reports—cited throughout this statement—that we issued from 2020 to March 2023 examining military readiness, operations, and sustainment, among others, in the ground, sea, air, and space domains. To perform our prior work, we analyzed Army, Air Force, Navy, Marine Corps, and Space Force readiness; maintenance, personnel, and training information; and interviewed cognizant officials. The reports cited throughout this statement contain more details on the scope of the work and the methodology we used to carry it out. Also, we have issued several classified reports since 2020 examining these issues. However, this statement does not include that work.

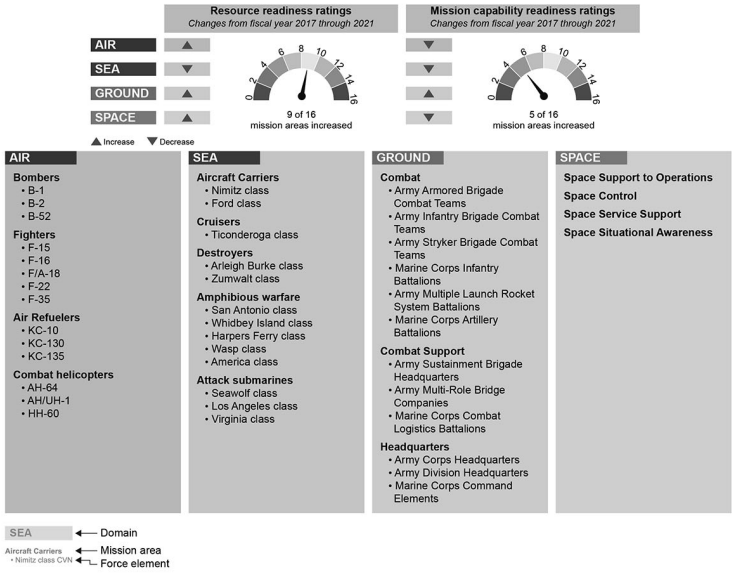
We conducted the work on which this statement is based in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

## Ground Domain Readiness Increased While Sea Domain Readiness Declined during Fiscal Year 2017 through 2021, with Mixed Changes in Air and Space Domains

Readiness increased in the ground domain and declined in the sea domain from fiscal year 2017 through fiscal year 2021, and rating changes were mixed in the air and space domains.[1] The ratings are based on our analysis of readiness data over this 5-year period for selected mission areas, which are groups of similar capabilities from across the services, such as fighter jets. We also analyzed readiness data for force elements—subsets of units within each mission area—within each of the domains. See figure 1.

[1]GAO, *Military Readiness: DOD Domain Readiness from Fiscal Year 2017 through Fiscal Year 2021*, GAO-22-105279C (Washington, D.C.: May 18, 2022).

**Figure 1: Change in Domain Resource and Mission Capability Readiness Ratings from Fiscal Years 2017 through 2021**




Source: GAO analysis of Department of Defense (DOD) readiness data and information. | GAO-23-106673

Note: Resource readiness ratings measure the status of personnel, equipment, supplies, and training. Mission capability readiness ratings measure whether a unit can accomplish its designed missions.

We have reported on DOD historic readiness levels for many years, observing a decline in readiness as overall demand for the joint force remains high and is likely to remain high to support global needs. In September 2016, we found that the military services had reported persistently low readiness levels, which they attributed to emerging and

continued demands on their forces, reduced force structure, and increased frequency and length of deployments. In that report, we reviewed DOD and the military services' plans to rebuild readiness, finding that those efforts could have been at risk without a comprehensive plan.[2]

In 2018, DOD developed a plan for readiness recovery, which included goals and metrics to assess progress in addressing identified primary readiness issues for the military services. DOD officials noted at the time that the department revised its readiness recovery goals and metrics to continue to align with the 2018 *National Defense Strategy* and DOD priorities. DOD most recently revised its readiness recovery goals and metrics in December 2020, according to officials. While DOD continues to evaluate readiness progress by military service, section 333 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 required the Secretary of Defense to identify and establish metrics for measuring readiness to conduct full-spectrum operations in the ground, sea, air, space, and cyber domains.[3]

In May 2019, we found that DOD was not measuring or reporting readiness to perform full-spectrum operations by domain.[4] We recommended that DOD identify and establish metrics for measuring readiness to conduct full-spectrum operations in the ground, sea, air, space, and cyber domains or propose to Congress alternative approaches for measuring readiness across these domains. DOD partially concurred with our recommendation. However, since 2019, officials in the Office of the Secretary of Defense have expressed that the DOD readiness recovery plan captures the ground, sea, and air domains. Officials also stated that instead of developing separate metrics for measuring readiness in the domains, the department has been focused

[2]GAO, *Military Readiness: DOD's Readiness Rebuilding Efforts May Be at Risk without a Comprehensive Plan*, GAO-16-841 (Washington, D.C.: Sept. 7, 2016). We made five recommendations relating to implementation and oversight of readiness rebuilding efforts, which DOD has implemented.

[3]Pub. L. No. 115-232, § 333(c) (2018). Section 333 required the Secretary of Defense to identify and establish the metrics for purposes of certain GAO reviews.

[4]GAO, *Military Readiness: Update on DOD's Readiness Recovery and Domain Readiness Assessment*, GAO-19-390C (Washington, D.C.: May 6, 2019).

on tracking readiness recovery by military service and implementing various readiness reporting reforms.[5]

We continue to believe that our recommendation is valid because cross-domain operations include capabilities from all five domains that are no longer owned by any single military service. Each service operates across multiple domains. For example, each of the services uses cyberspace. All conduct or depend on space operations. Army and Marine Corps forces operate from the air, Navy forces can influence land battles, and Air Force operations routinely have an effect on multiple domains. By monitoring readiness recovery only at the service level, DOD may miss key readiness issues in the capabilities of the joint force. We have previously reported that examining force structure and readiness-related issues through a service-centric lens has many limitations. For example, in March 2019, we found that there was no mechanism in place for DOD to routinely assess joint force needs and force structure tradeoffs across the military services.[6] Instead, force structure analyses were generally done by the services, largely reflected the programmed force structure, and had not resulted in any significant changes to force structure and resource allocations.

## DOD Faces a Range of Persistent Readiness Challenges in the Air, Sea, Ground, and Space Domains

Our prior work has identified a wide range of persistent challenges in each domain as DOD seeks to improve readiness.

### Air Domain

[5]In March 2023, DOD officials reported that they had recently begun implementing Strategic Readiness, which the department describes as the ability to build, maintain, and balance warfighting capabilities and competitive advantages that ensure DOD can achieve strategic objectives across threats and time horizons. Officials reported the department will issue formal guidance on Strategic Readiness by the summer of 2023.

[6]GAO, *Defense Strategy: Revised Analytic Approach Needed to Support Force Structure Decision-Making*, GAO-19-385 (Washington, D.C.: Mar. 14, 2019).

## Maintenance and Supply Challenges Limit Availability of Aging Aircraft

We found in November 2022 that DOD did not meet its mission capable goals for fiscal year 2021 for 47 of the 49 aircraft we reviewed, with most aircraft more than 10 percentage points below the goal.[7] The mission capable rate—the percentage of total time when the aircraft can fly and perform at least one mission—is used to assess the health and readiness of an aircraft fleet. For fiscal year 2021:

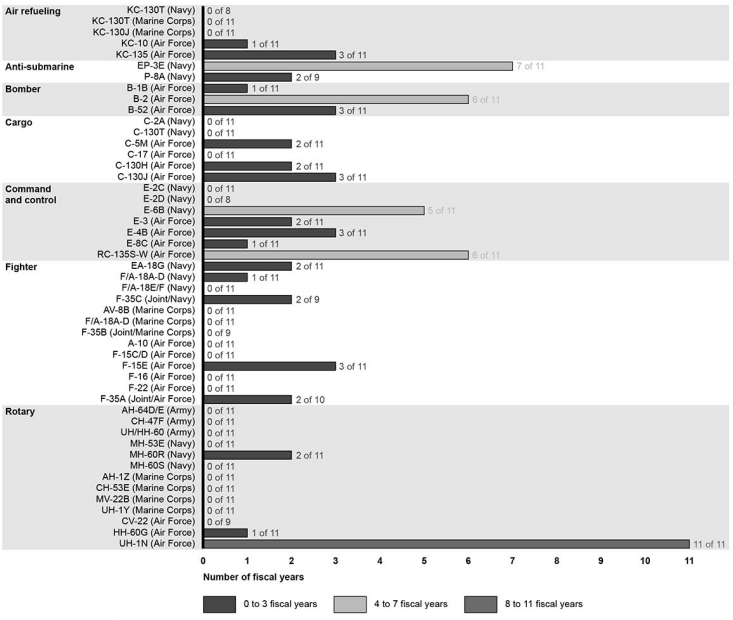
- 30 aircraft were more than 10 percentage points below the mission capable goal, and
- 17 aircraft were 10 percentage points or less below the mission capable goal.

Further, mission capable rates for most aircraft decreased from fiscal years 2011 through 2021.

As shown in figure 2, from fiscal years 2011 through 2021 only four aircraft met their annual mission capable goal in a majority of those years: the Air Force's B-2, RC-135S-W, UH-1N, and the Navy's EP-3.

[7]GAO, *Weapon System Sustainment: Aircraft Mission Capable Goals Were Generally Not Met and Sustainment Costs Varied by Aircraft*, GAO-23-106217 (Washington, D.C.: Nov. 10, 2022). We reported separately on the Army's combat helicopters—the AH-64 Apache, CH-47 Chinook, and UH/HH-60 Black Hawk—examining materiel readiness goals, maintenance challenges, and sustainment plans. See GAO, *Combat Helicopters: Actions Needed to Fully Review Readiness Goals and Address Long-Standing Maintenance Challenges*, GAO-22-104607SU (Washington, D.C.: Feb. 15, 2022).

**Figure 2: Number of Years That Selected Aircraft Met Their Annual Mission Capable Goal, Fiscal Years 2011 through 2021**




Source: GAO analysis of Army, Navy, and Air Force data. | GAO-23-106673

[a]The military department did not provide a mission capable goal for some of the 11 years for this aircraft.

Many of the aircraft we reviewed are facing one or more sustainment challenges related to maintenance constraints, supply support, and the

age of the aircraft. According to program officials, these challenges affect mission capable rates and the costs required to sustain those aircraft. Figure 3 shows the sustainment challenges that we determined were affecting each of the aircraft that we reviewed.

**Figure 3: Sustainment Challenges Affecting Selected Aircraft**

| | Aging aircraft | | | Maintenance | | | | Supply support | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Delays in acquiring replacement aircraft | Service life extension[a] | Unexpected replacement of parts and repairs | Access to technical data | Delays in depot maintenance | Shortage of trained maintenance personnel | Unscheduled maintenance | Diminishing manufacturing source[b] | Parts obsolescence[c] | Parts shortage and delay |
| **Air refueling** | | | | | | | | | | |
| **KC-130T** (Navy/Marine Corps) | | | | | ● | | | | | ● |
| **KC-130J** (Marine Corps) | | | | ● | ● | | | | | ● |
| **KC-10** (Air Force) | ● | | | | | | | | | |
| **KC-135** (Air Force) | | ● | ● | ● | | ● | ● | ● | ● | ● |
| **Anti-submarine** | | | | | | | | | | |
| **EP-3E** (Navy) | | | ● | | | | ● | ● | ● | ● |
| **P-8A** (Navy) | | | ● | | ● | | | | | ● |
| **Bomber** | | | | | | | | | | |
| **B-1B** (Air Force) | | | ● | | | | ● | ● | ● | ● |
| **B-2** (Air Force) | ● | | ● | ● | ● | ● | ● | ● | ● | ● |
| **B-52** (Air Force) | | | ● | | ● | ● | ● | ● | ● | ● |
| **Cargo** | | | | | | | | | | |
| **C-2A** (Navy) | | | | | | ● | | | ● | |
| **C-130T** (Navy) | | | | | ● | | | | | ● |
| **C-5M** (Air Force) | | | ● | | ● | ● | ● | ● | ● | ● |
| **C-17** (Air Force) | | ● | ● | ● | ● | | ● | ● | ● | ● |
| **C-130H** (Air Force) | | | | | ● | ● | | ● | ● | |
| **C-130J** (Air Force) | | | | | ● | ● | | ● | ● | |
| **Command and control** | | | | | | | | | | |
| **E-2C** (Navy) | | | | | | ● | | | ● | |
| **E-2D** (Navy) | | | | | | ● | ● | ● | ● | ● |
| **E-6B** (Navy) | | | ● | ● | ● | | ● | ● | ● | ● |
| **E-3** (Air Force) | | | ● | | ● | | ● | ● | ● | ● |
| **E-4B** (Air Force) | ● | ● | ● | | ● | ● | ● | ● | ● | ● |
| **E-8C** (Air Force) | | | | | ● | | ● | ● | ● | ● |
| **RC-135S-W** (Air Force) | | ● | | | ● | ● | ● | ● | ● | ● |
| **Fighter** | | | | | | | | | | |
| **EA-18G** (Navy) | | ● | ● | ● | | ● | ● | ● | ● | ● |
| **F/A-18A-D** (Navy/Marine Corps) | | | | | | ● | ● | | ● | |
| **F/A-18E/F** (Navy) | | ● | ● | ● | | ● | ● | ● | ● | ● |
| **F-35A/B/C** (Joint) | | ● | ● | ● | ● | ● | ● | ● | | ● |
| **AV-8B** (Marine Corps) | | | ● | | ● | ● | | ● | ● | ● |
| **A-10** (Air Force) | | | ● | | ● | ● | ● | ● | ● | ● |
| **F-15C/D** (Air Force) | | ● | ● | | ● | ● | ● | ● | ● | ● |
| **F-15E** (Air Force) | | | ● | | ● | ● | ● | ● | ● | ● |
| **F-16** (Air Force) | | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| **F-22** (Air Force) | | | ● | ● | | | | ● | ● | ● |
| **Rotary** | | | | | | | | | | |
| **AH-64D/E** (Army) | ● | | ● | ● | ● | ● | ● | ● | ● | ● |
| **CH-47F** (Army) | | | | | ● | ● | | ● | ● | ● |
| **UH/HH-60** (Army) | | | | | | ● | | | | ● |
| **MH-53E** (Navy) | | | ● | | ● | | | ● | ● | ● |
| **MH-60R** (Navy) | | | | ● | ● | ● | | ● | ● | ● |
| **MH-60S** (Navy) | | | | ● | ● | ● | | ● | ● | ● |
| **AH-1Z** (Marine Corps) | | | ● | | ● | ● | ● | ● | ● | ● |
| **CH-53E** (Marine Corps) | | | ● | | ● | | | ● | ● | ● |
| **MV-22B** (Marine Corps) | | | | ● | | | ● | ● | ● | ● |
| **UH-1Y** (Marine Corps) | | | ● | | ● | ● | ● | ● | ● | ● |
| **CV-22** (Air Force) | | | | ● | ● | | ● | ● | ● | ● |
| **HH-60G** (Air Force) | | | | | ● | | | | | |
| **UH-1N** (Air Force) | ● | | | | ● | | | | | |

Source: GAO analysis of Army, Navy, and Air Force information. | GAO-23-106673

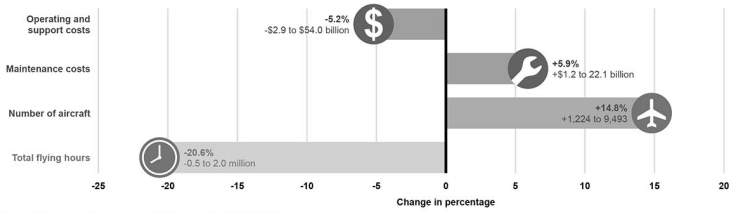
[a]A service-life extension refers to a modification to extend the service life of an aircraft beyond what was planned.

[b]Diminishing manufacturing sources refers to a loss or impending loss of manufacturers or suppliers of items.

[c]Obsolescence refers to a lack of availability of a part due to its lack of usefulness or it no longer being current or available for production.

We also analyzed operating and support costs across the selected aircraft and found that total operating and support costs decreased slightly from fiscal year 2011 through fiscal year 2020 while maintenance costs have increased, becoming a larger portion of total costs.[8] Operating and support costs totaled about $54 billion in fiscal year 2020 for the aircraft we reviewed—a decrease of about $2.9 billion since fiscal year 2011 after factoring in inflation using constant fiscal year 2020 dollars. Maintenance costs became a larger portion of O&S costs—increasing by $1.2 billion since fiscal year 2011 (see fig. 4). Based on our analysis of cost data provided by the departments and information provided by the system program offices, factors affecting the cost to operate and support each aircraft included the number of aircraft in the inventory, the number of flying hours flown, and the age of the fleet.

**Figure 4: Changes in Total Costs, Number of Selected Aircraft, and Flying Hours, Fiscal Years 2011 through 2020 (rounded, in constant fiscal year 2020 dollars)**




Source: GAO analysis of Army, Navy, and Air Force data. | GAO-23-106673

[8]Operating and support (O&S) costs historically account for approximately 70 percent of an aircraft's total life-cycle cost—costs to operate and sustain the weapon system from initial operations through the end of its life—and include costs for repair parts, depot and field maintenance, contract services, engineering support, and personnel, among other things. GAO, *Weapon System Sustainment: Aircraft Mission Capable Goals Were Generally Not Met and Sustainment Costs Varied by Aircraft*, GAO-23-106217 (Washington, D.C.: Nov. 10, 2022).

In June 2022, we reported on Air Force and Navy field-level aircraft maintenance challenges and found that neither service had mitigated persistent fixed-wing aircraft sustainment risks.[9] In 2016, the National Defense Authorization Act for Fiscal Year 2017 included a provision requiring the military departments to conduct sustainment reviews for major weapon systems to assess their product support strategy, performance, and operating and support costs.[10] In 2021, the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 amended this sustainment review provision to require the secretaries of the military departments to annually provide the sustainment reviews conducted on a weapon system to the congressional defense committees, among other things.[11] DOD recognizes regular sustainment reviews as a critical tool to assess and address performance shortcomings and to identify maintenance and other risks to readiness.

In our June 2022 report, we recommended that the Air Force and Navy prioritize the completion of required sustainment reviews and update their schedules to complete the reviews in a timelier manner. The Air Force concurred and the Navy partially concurred with the recommendations. In its comments on the recommendation, the Navy stated that it needed to balance the workload required to conduct the sustainment reviews and that completing the sustainment reviews more expeditiously would not increase the implementation rate of readiness initiatives. While we acknowledge the need to balance workload and to generate considerable information and data to complete sustainment reviews, we continue to

[9]GAO, *Air Force and Navy Aviation: Actions Needed to Address Persistent Sustainment Risks*, GAO-22-104533 (Washington, D.C.: June 15, 2022).

[10]Pub. L. No. 114-328, § 849(c) (2016). The requirement was initially codified as section 2441 of title 10, U.S. Code. The William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 recodified the provision, as amended, as section 4323 of title 10, U.S. Code, effective January 1, 2022. Pub. L. No. 116-283, §§ 1801(d), 1848(c) (2021).

[11]Pub. L. No. 116-283, § 802(c) (2021) (codified, as amended, at 10 U.S.C. § 4323(d)). The statute as amended requires the secretary of each military department to conduct sustainment reviews of each covered system within 5 years of declaring initial operational capability and every 5 years thereafter throughout the life cycle of the system. § 4323(a). The Air Force conducted nine sustainment reviews during fiscal year 2021 and submitted documentation of these reviews. The Army completed four sustainment reviews during fiscal year 2021 and submitted documentation of those reviews. The Navy did not submit any sustainment reviews completed during fiscal year 2021, but rather issued guidance and a schedule to complete the required sustainment reviews in future years. See GAO, *Weapon System Sustainment: The Army and Air Force Conducted Reviews and the Army Identified Operating and Support Cost Growth*, GAO-23-106341 (Washington, D.C.: Mar. 30, 2023).

believe that the Navy should complete its statutorily required sustainment reviews with a greater sense of urgency.

In addition, we recommended in the June 2022 report that the Air Force and Navy develop mitigation plans with specific milestones to remedy maintenance challenges, risks, or related effects on aircraft availability identified in completed sustainment reviews. The Air Force and Navy concurred with this recommendation.

We also recommended to Congress that it consider amending section 4323 of title 10, U.S. Code, to require the Air Force and Navy to submit to Congress mitigation plans related to identified maintenance challenges and risks to aircraft availability found in sustainment reviews based on a specific sustainment threshold. Such thresholds could include aircraft falling below their mission capable-rate goal for consecutive years, an aircraft's mission capable rate declining by a specified percentage, or some other sustainment metric or metrics.

We have an ongoing review examining fighter aircraft sustainment best practices and the department's approach to resourcing sustainment requirements for its fighter aircraft and plan to report on the results of that work in 2024.

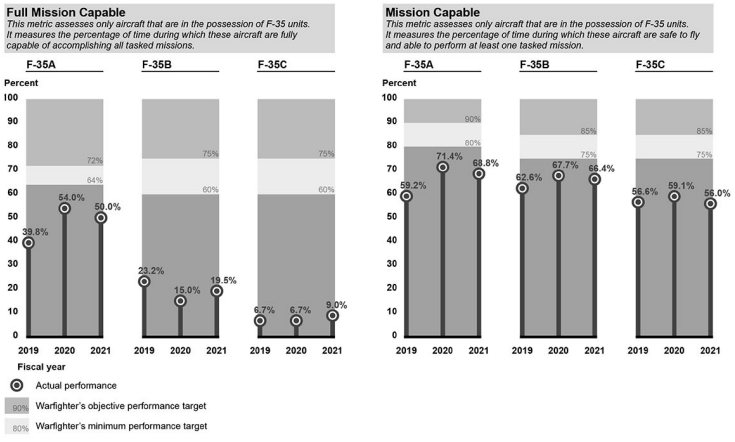
## F-35 Aircraft Face Sustainment and Operational Challenges

Sustainment challenges are not just an issue for older aircraft. They represent a significant challenge for the F-35 Lightning II aircraft—a growing portion of the tactical aviation fleet for DOD. The F-35 is DOD's most ambitious and costly weapon system in history. Current DOD plans call for procuring 2,470 F-35s at an estimated total acquisition cost of just under $400 billion, leaving the majority of the estimated program costs, approximately $1.3 trillion, associated with sustainment of the aircraft.

We found in April 2022 that the F-35 continues to not meet its targets for mission capable rates or its reliability and maintainability metrics.[12] For example, in fiscal year 2021, the F-35A and F-35B were below the full mission-capable minimum-performance target by 14 and 41 percentage points, respectively. Furthermore, each F-35 variant in fiscal year 2021 did not meet its target for mission-capable minimum performance by at least about 9 percentage points. See figure 5.

[12]GAO, *F-35 Sustainment: DOD Faces Several Uncertainties and Has Not Met Key Objectives*, GAO-22-105995 (Washington, D.C.: Apr. 28, 2022).

**Figure 5: U.S. F-35 Fleet's Rates for Full Mission Capable and Mission Capable, Fiscal Years 2019 through 2021**




Source: GAO analysis of Department of Defense and Lockheed Martin information. | GAO-23-106673

Note: The warfighter's minimum and objective performance targets are those requirements established for non-deployed F-35 aircraft by the U.S. Air Force for the F-35A; by the U.S. Marine Corps for the F-35B; and by the U.S. Navy for the F-35C, in their respective Performance Based Arrangements.

Our prior work has shown that two key challenges—spare parts availability and maintenance—have resulted in the F-35 program not being able to meet its performance targets. While some improvements have been made, these challenges continue to prevent the program from meeting its minimum-performance targets, much less its performance objectives.

- **Spare parts availability**: Spare parts availability is measured by rate of not mission capable due to supply—the percentage of time during which aircraft in the possession of F-35 units are unable to fly or conduct any of their tasked missions due to a lack of spare parts. The

rate of not mission capable due to supply was about 25 percent in fiscal year 2019 and this rate decreased further, hovering around 17 percent in fiscal years 2020 and 2021. As we reported in July 2021, the F-35 Joint Program Office stated that the program plans to fund enough spare parts to achieve an approximately 15 percent rate of not mission capable due to supply.[13] According to program officials, achieving a lower rate of not mission capable due to supply was not affordable, and would provide only near-term benefits. Therefore, the program has focused on other priorities, such as improving depot repair capacity.

As of September 2021, the average depot-level repair time for an F-35 part had improved to 131 days, from 188 days in November 2018. However, this figure remains well above the program's 30-day program objective. In January 2022, the Director, Operational Test and Evaluation, reported that the limited component-level depot repair capacity contributes to the shortfalls in the supply of spares. According to program officials, part repair times continue to lag because the depots do not yet have the capacity to meet program goals for repair time, and they are years away from having sufficient capacity to achieve these goals. F-35 officials stated that mitigation plans are in place to accelerate component depot repair capacity. The officials said that this is imperative because an unintended consequence of delayed depot activation is the procurement of more spares to make up for the lack of components in repair coming back into the supply system for the warfighter.

- **Maintenance**: In July 2021, we found that DOD officials and all of the F-35 locations that responded to our survey identified two specific challenges that negatively affected organizational-level maintenance on the F-35: (1) flight line maintainers' lack of access to technical data (i.e., details about how the aircraft should perform and how to maintain its continued performance) to conduct certain maintenance activities and (2) the availability of support equipment to conduct maintenance efficiently.[14] During our visits to three F-35 installations and two F-35 maintenance depots from December 2021 through

[13]GAO, *F-35 Sustainment: DOD Needs to Cut Billions in Estimated Costs to Achieve Affordability*, GAO-21-439 (Washington, D.C.: July 7, 2021).

[14]GAO, *F-35 Sustainment: DOD Needs to Cut Billions in Estimated Costs to Achieve Affordability*, GAO-21-439 (Washington, D.C.: July 7, 2021).

March 2022, maintenance officers and maintainers continued to report that these issues negatively affected performance.[15]

In recent years, we made a number of recommendations to address F-35 spare parts and maintenance challenges. For example, in April 2019, we recommended that DOD clearly define the strategy by which DOD will manage the F-35 supply chain in the future and update key strategy documents accordingly, including any additional actions and investments necessary to support that strategy.[16] In October 2021, DOD published a business case analysis that assessed its supply chain strategy, but has not updated its strategy. Further, in July 2022, we recommended that DOD assess and make changes to the F-35 engine sustainment strategy, and DOD concurred.[17] DOD has begun work on a new sustainment strategy with plans to complete it in 2024. DOD is also evaluating options for upgrading the F-35's engine to improve performance to counter emerging threats. As DOD considers engine modernization options, it will need to consider how these different designs will affect sustainment.[18]

More broadly, since 2014, we have reported on several operational and affordability challenges associated with sustainment of the F-35.[19] DOD officials are aware of these challenges and agreed that changes must be made to F-35 sustainment to improve both aircraft readiness and program affordability. The department is taking encouraging steps with its increased focus on F-35 sustainment and its ongoing assessments to

[15]GAO, *F-35 Sustainment: DOD Faces Several Uncertainties and Has Not Met Key Objectives*, GAO-22-105995 (Washington D.C.: April 28, 2022).

[16]GAO, *F-35 Aircraft Sustainment: DOD Needs to Address Substantial Supply Chain Challenges*, GAO-19-321 (Washington, D.C.: Apr. 25, 2019).

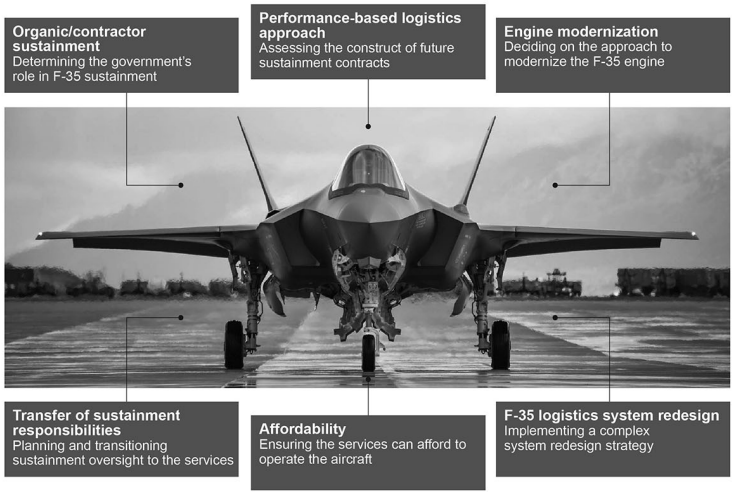
[17]GAO, *F-35 Aircraft: DOD Should Assess and Update Its Engine Sustainment Strategy to Support Desired Outcomes*, GAO-22-104678 (Washington, D.C.: July 19, 2022).

[18]For more details on the F-35 engine modernization issues, see GAO, *Tactical Aircraft: Technical, Delivery, and Affordability Challenges Complicate DOD's Ability to Upgrade Its Aging Fleet*, GAO-23-106694 (Washington, D.C.: Mar. 29, 2023).

[19]GAO, *F-35 Sustainment: Need for Affordable Strategy, Greater Attention to Risks, and Improved Cost Estimates*, GAO-14-778 (Washington, D.C.: Sept. 23, 2014); *F-35 Sustainment: DOD Needs a Plan to Address Risks Related to Its Central Logistics System*, GAO-16-439 (Washington, D.C.: Apr. 14, 2016); *F-35 Aircraft Sustainment: DOD Needs to Address Challenges Affecting Readiness and Cost Transparency*, GAO-18-75 (Washington, D.C.: Oct. 26, 2017); *F-35 Aircraft Sustainment: DOD Needs to Address Substantial Supply Chain Challenges*, GAO-19-321 (Washington, D.C.: Apr. 25, 2019); *Weapon System Sustainment: DOD Needs a Strategy for Re-Designing the F-35's Central Logistics System*, GAO-20-316 (Washington, D.C.: Mar. 6, 2020); and *F-35 Sustainment: DOD Needs to Cut Billions in Estimated Costs to Achieve Affordability*, GAO-21-439 (Washington, D.C.: July 7, 2021).

determine how to achieve improved sustainment-related outcomes. However, our work shows that DOD still faces several uncertainties as it works to determine the future of F-35 sustainment, as shown in figure 6. These uncertainties, all of which are independently complex, are also inherently connected. This will require DOD to address them concurrently, further complicating DOD's efforts to plan for the future of F-35 sustainment.

**Figure 6: Uncertainties Shaping the Future of F-35 Sustainment**




Source: GAO analysis of Department of Defense information; U.S. Air Force/R. Nial Bradshaw (photo). | GAO-23-106673

We have an ongoing review examining F-35 maintenance with plans to report on the results of that work in summer 2023.

Sea Domain

## Sustainment Challenges Have Worsened over Last Decade, with Surface Ship Maintenance Backlog Estimated at $1.8 Billion

We found in January 2023 that sustainment challenges worsened from fiscal year 2011 through 2021 for 10 ship classes we reviewed. Examples of issues in three areas were:

- depot maintenance delays (days beyond the scheduled end date for depot maintenance),
- growing numbers of cannibalizations (working parts removed and reused elsewhere due to parts shortages), and
- casualty reports (reports of events that impair ships' ability to conduct a primary mission).

See figure 7.[20] Over the same time frame, there was a decrease in steaming hours, which are the number of hours a ship is generally in an operating or training status.

**Figure 7: Changes in Sustainment Metrics per Ship for Selected Navy Ship Classes, Fiscal Years 2011 through 2021**

| Ship class | Maintenance cannibalizations[a] | Category 3 and 4 casualty reports | Days of maintenance delay |
|---|---|---|---|
| *Ticonderoga*-class cruiser (CG-47) | +3 ▲ | -1 ▼ | +7 ▲ |
| *Nimitz*-class aircraft carrier (CVN-68) | +4 ▲ | +2 ▲ | +7 ▲ |
| *Arleigh Burke*-class destroyer (DDG-51) | +7 ▲ | +19 ▲ | +20 ▲ |
| *Freedom*-class littoral combat ship (LCS-1) | +15 ▲ | +26 ▲ | 0 ● |
| *Independence*-class littoral combat ship (LCS-2) | +3 ▲ | +26 ▲ | +19 ▲ |
| *America*-class amphibious assault ship (LHA-6)[b] | -1 ▼ | +13 ▲ | 0 ● |
| *Wasp*-class amphibious assault ship (LHD-1) | +9 ▲ | +43 ▲ | +10 ▲ |
| *San Antonio*-class amphibious transport dock (LPD-17) | +3 ▲ | +10 ▲ | +33 ▲ |
| *Whidbey Island*-class dock landing ship (LSD-41) | +6 ▲ | +24 ▲ | +19 ▲ |
| *Harpers Ferry*-class dock landing ship (LSD-49) | +7 ▲ | -11 ▼ | -16 ▼ |
| **Fleetwide** | **+6** ▲ | **+15** ▲ | **+14** ▲ |

● No change (neutral) ▲ Increase (negative) ▼ Decrease (positive)

Source: GAO analysis of U.S. Navy data. | GAO-23-106873

Note: The numbers above are not percentages and are rounded to the nearest whole number.

[a]Cannibalization data for fiscal years 2011 through 2014 is incomplete. Therefore, cannibalization trends reflect fiscal years 2015 through 2021.

[20]GAO, *Weapon System Sustainment: Navy Ship Usage Has Decreased as Challenges and Costs Have Increased*, GAO-23-106440 (Washington, D.C.: Jan. 31, 2023).

[b]The first America-class amphibious assault ship was commissioned in 2014, so readiness trends for this class reflect fiscal years 2015 through 2021.

- **Depot maintenance delays**: The average days of depot maintenance delay per ship among the 10 ship classes we examined increased about 5 days to about 19 days per ship in fiscal years 2011 through 2021. The highest number of days of depot maintenance delay per ship was incurred in fiscal year 2019, with an average of 40 days per ship that year. The average fell in fiscal years 2020 and 2021. The *San Antonio* class averaged more than 30 days of depot maintenance delay per ship—the equivalent of about a month of delay—in fiscal year 2021. By comparison, the Navy has the most ships in the *Arleigh Burke* class, and those ships averaged 26 days of depot maintenance delay in that fiscal year. According to Navy officials, the Navy's goal was to incur zero days of depot maintenance delay. However, the average number of days delayed per ship increased from 5 days in 2011 to 19 days in 2021.
- **Maintenance cannibalizations**: Officials from program offices for nine of the 10 ship classes we reviewed indicated they faced challenges obtaining spare parts, which has resulted in an increase in ship maintainers reusing parts because new parts are not available. We found that the average number of maintenance cannibalizations per ship rose by about six cannibalizations across the ship classes we examined from fiscal year 2015 through 2021.[21] With the exception of fiscal year 2017, the average number of cannibalizations per ship increased every year from 2015 to 2021. Navy officials told us that ship cannibalizations often occur due to supply chain shortfalls for specific parts. According to these officials, decisions to move parts from one ship to another are made when the supply of a specific part will not meet the operational commitments of a ship.
- **Casualty reports**: We found that the average number of category 3 and 4 casualty reports per ship increased by 15 from fiscal years 2011 through 2021. Eight of the 10 ship classes we examined experienced an increase in category 3 and 4 casualty reports over this time

[21]We did not report cannibalization rates for fiscal years 2011 through 2014 because Navy officials told us that their data for these years were incomplete.

frame.[22] The most significant increase in casualty reports were experienced by the *Wasp* class, which saw an increase of about 43 from fiscal year 2011 to fiscal year 2021. Additionally, Littoral Combat Ships—both the *Freedom* and *Independence* classes—saw an increase of about 26 from fiscal year 2011 to fiscal year 2021. We have reported that the Navy has faced significant challenges operating and maintaining its Littoral Combat Ship fleet.[23] We found that engine failures occurred on 10 of 11 deployments, among other design, navigation, and engine propulsion problems. Navy officials said that they did not have goals for casualty report rates for each ship class, but officials noted that the Navy is continually working to minimize them.

The 10 ship classes we reviewed face a litany of maintenance and supply challenges related to the age of the ship, shortages of trained maintenance personnel, and diminished manufacturing sources for parts, among others. According to program officials, these challenges affect operational availability and the costs required to sustain those ships. Figure 8 shows key sustainment challenges that we determined were affecting each of the ship classes we reviewed.

[22]Casualty reports are used to record events that impair, to varying degrees, a ship's ability to accomplish its primary mission. Navy casualty reports fall into three categories of increasing severity: category 2, category 3, and category 4, with category 4 indicating a deficiency in mission-essential equipment that causes a loss of at least one primary mission. We chose to combine category 3 and category 4 casualty reports in our analysis because both indicate problems that could affect mission capability. While category 4 casualty reports fell across most ship classes from fiscal years 2011 through 2021, they were offset by larger increases in category 3 casualty reports—leading to significantly more casualty reports overall.

[23]GAO, *Littoral Combat Ship: Actions Needed to Address Significant Operational Challenges and Implement Planned Sustainment Approach*, GAO-22-105387 (Washington, D.C.: Feb. 24, 2022).

**Figure 8: Sustainment Challenges Affecting Selected Navy Ship Classes**

| | *Ticonderoga*-class cruiser (CG-47) | *Nimitz*-class aircraft carrier (CVN-68) | *Arleigh Burke*-class destroyer (DDG-51) | *Freedom*-class littoral combat ship (LCS-1) | *Independence*-class littoral combat ship (LCS-2) | *America*-class amphibious assault ship (LHA-6) | *Wasp*-class amphibious assault ship (LHD-1) | *San Antonio*-class amphibious transport dock (LPD-17) | *Whidbey Island*-class dock landing ship (LSD-41) | *Harpers Ferry*-class dock landing ship (LSD-49) |
|---|---|---|---|---|---|---|---|---|---|---|
| Service life longer than anticipated | ● | ● | | | | | | | ● | ● |
| Unexpected replacement of parts and repairs | | ● | ● | ● | ● | | ● | ● | | ● |
| Access to technical data | | ● | | | | | | | | |
| Delays in depot maintenance | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Delays in intermediate maintenance | ● | | ● | | ● | | ● | | | |
| Shortage of trained maintenance personnel | ● | | ● | ● | ● | ● | ● | ● | ● | ● |
| Unscheduled maintenance | ● | ● | ● | ● | ● | ● | ● | ● | | |
| Diminishing manufacturing sources | ● | ● | ● | | ● | | ● | | | |
| Parts obsolescence | ● | ● | ● | ● | ● | | ● | ● | | ● |
| Parts shortages and delays | ● | ● | ● | ● | ● | | ● | ● | ● | ● |

● Applicable maintenance issue

Source: GAO analysis of Navy information. | GAO-23-106673

Note: Diminishing manufacturing sources refers to the loss, or impending loss, of manufacturers or suppliers of items, raw materials, or software.

We also analyzed operating and support costs, finding that the Navy's total operating and support costs for the 10 ship classes we examined increased by about $2.5 billion from fiscal years 2011 through 2020 while the Navy added 33 ships to its fleet for these classes. To enable comparisons across ship classes, which varied greatly based on the number of ships, we analyzed both total costs for each of the 10 reviewed ship classes as well as costs per ship for each of the ship classes. Even though there was an increase in the number of ships, steaming hours for the examined ship classes declined. Therefore, the cost per steaming hour for the ship classes we examined increased with some variation across the examined ship classes. Generally, the increase in cost per steaming hour for the ship classes we examined means the Navy is spending more to operate and sustain the ships for each hour of operational activity.

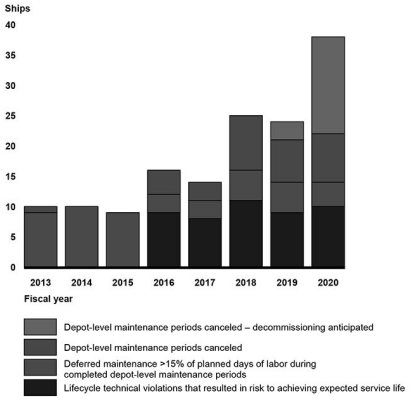
Ship sustainment challenges will likely be exacerbated by a growing maintenance backlog on Navy surface ships. We found in May 2022 that over the past decade, surface ships have accounted for nearly all of the

Navy's deferred depot maintenance backlog.[24] By contrast, aircraft carriers have experienced minimal increases in backlog, and maintenance is rarely deferred for submarines. At our request, the Navy developed an estimate of its maintenance backlog, and it totaled nearly $1.8 billion. The total, comprised nearly $1.7 billion for surface ships and nearly $100 million for aircraft carriers. This estimate is the amount of funding the Navy estimates it would need to complete all of the deferred maintenance.

The Navy in recent years has increasingly deferred maintenance on critical systems or canceled depot-level maintenance periods altogether for surface ships. According to a Navy report, deferred maintenance on critical systems—referred to as life-cycle technical violations—increases the likelihood that the ship's future maintenance periods will take longer and cost more than expected. Deferred and canceled maintenance may also affect a ship's ability to reach the expected service life. According to the Navy report, in fiscal year 2018 through fiscal year 2020, the Navy canceled 16 more maintenance periods than it did in the 5 preceding fiscal years combined (see fig. 9).

[24]GAO, *Navy Ships: Applying Leading Practices and Transparent Reporting Could Help Reduce Risks Posed by Nearly $1.8 Billion Maintenance Backlog*, GAO-22-105032 (Washington, D.C.: May 9, 2022).

**Figure 9: Number of Surface Ships with Critical Maintenance Violations Reported in the Navy's Fiscal Year 2020 Surface Ship Engineered Operating Cycle Report**

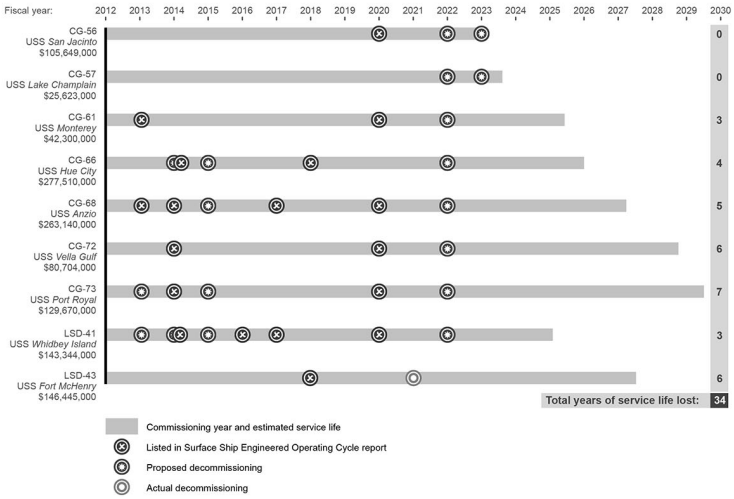



Source: Navy Surface Ship Engineered Operating Cycle Report for FY2020. | GAO-23-106673

Note: Critical maintenance violations are canceled depot-level maintenance periods, deferred maintenance greater than 15 percent of planned days of labor during completed depot-level maintenance periods, and deferred maintenance tasks on critical systems.

The surface ship maintenance backlog included $1.2 billion for deferred maintenance on ships the Navy proposed to decommission early in its fiscal year 2022 budget request. The accumulated maintenance backlog contributed to the Navy decisions to propose decommissioning nine ships, according to officials, which would have resulted in the loss of 34 years of ship service life (see fig. 10). Early decommissioning could reduce operating and support costs, but also leads to a smaller fleet and could hinder efforts to meet operational and presence requirements.

**Figure 10: Ships with an Accumulated Deferred Maintenance Backlog Proposed for Early Decommissioning in the Navy's FY2022 Budget**




Source: GAO analysis of U.S. Navy information. | GAO-23-106673

We assessed the Navy's management of the surface fleet's depot maintenance backlog, finding that the Navy met six of the nine leading practices that we previously identified as effective strategies for managing deferred maintenance backlogs. Specifically, the Navy had not taken action in three areas: 1.) establish comprehensive performance measures for reducing the backlog, 2.) identify the full range of risks posed by a lack of timely investment, or 3.) identify the funding needed to address the backlog of deferred depot maintenance. We made nine recommendations to incorporate leading practices for managing deferred maintenance and

to improve Navy reporting on the depot maintenance backlog. DOD generally concurred with the recommendations, but has not yet implemented any of them.

We have reported that sustainment challenges are not limited to surface ships. For example:

- In August 2020, we found that, from fiscal year 2015 to fiscal year 2019, the Navy was late in completing 75 percent of planned maintenance periods for aircraft carriers and submarines, with an average delay of 113 days for carriers and 225 days for submarines.[25] We also found that idle time for submarines waiting to start a maintenance period had grown from fiscal year 2015 to fiscal year 2019. Idle time occurs when the Navy's four shipyards do not have the facilities available to begin maintenance on submarines whose safety certifications have expired or will soon expire. Without the safety certification to submerge, submarines are unable to perform their operations. We found that idle time increased each year from 100 days in fiscal year 2015 to 1,019 days in fiscal year 2019—a 919 percent increase. There were 2,796 days of total idle time over this period.
- In October 2020, we found that from fiscal year 2014 to fiscal year 2020, Navy submarines had spent 9,563 more days in depot maintenance than expected and Navy aircraft carriers had spent 1,180 more days in depot maintenance than expected.[26]
- In February 2022, we reported on intermediate maintenance periods—high-priority planned maintenance that happens pier-side in homeports, allowing the Navy to interrupt repairs and get ships underway quickly if needed. We found that from fiscal year 2015 through fiscal year 2020 the Navy reported 2,525 days of maintenance delay for intermediate maintenance periods for submarines.[27]

[25]GAO, *Navy Shipyards: Actions Needed to Address the Main Factors Causing Maintenance Delays for Aircraft Carriers and Submarines*, GAO-20-588 (Washington, D.C.: Aug. 20, 2020).

[26]GAO, *Navy Maintenance: Navy Report Did Not Fully Address Causes of Delays or Results-Oriented Elements*, GAO-21-66 (Washington, D.C.: Oct. 29, 2020).

[27]GAO, *Navy Ship Maintenance: Actions Needed to Monitor and Address the Performance of Intermediate Maintenance Periods*, GAO-22-104510 (Washington, D.C.: Feb. 8, 2022).

When depot and intermediate maintenance is not completed on time, fewer submarines and aircraft carriers are available for training or operations, which can hinder readiness.

We have a wide range of recent and ongoing reviews examining sustainment issues across the sea domain. On April 20, we issued a report on Navy ship fires during maintenance periods, and plan to issue reports on Navy organizational-level ship maintenance in 2024, and Army watercraft readiness in 2024.[28]

## Navy's Four Public Shipyards Are in Poor Condition

Addressing ship and submarine maintenance delays, backlogs, and other sustainment challenges will be difficult given the poor condition of infrastructure at the Navy's four public shipyards.[29] The Navy's public shipyards are critical to maintaining the readiness of its fleet of nuclear aircraft carriers and submarines, and supporting ongoing operations around the world. The four shipyards are Norfolk Naval Shipyard in Virginia, Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility in Hawaii, Portsmouth Naval Shipyard in Maine, and Puget Sound Naval Shipyard and Intermediate Maintenance Facility in Washington. These shipyards provide the Navy with the capability to perform depot-level maintenance on ships, emergency repairs, ship modernization, and ship deactivations.

We found in May 2022 that the Navy has taken several actions to improve its public shipyards in recent years.[30] In 2018, the Navy began a 20-year effort to modernize and optimize its shipyards, known as the Shipyard Infrastructure Optimization Plan, that the Navy initially estimated would cost $21 billion. The plan includes efforts to address limitations with three

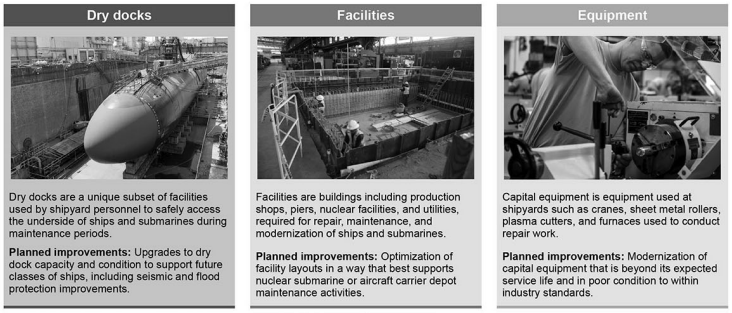
[28]GAO, *Navy Ship Fires: Ongoing Efforts to Improve Safety Should Be Enhanced*, GAO-23-105481 (Washington, D.C: Apr. 20, 2023).

[29]We reported in May 2022 on the condition of 21 depots operated by the military services, including the four public shipyards. We found that, since fiscal year 2016, the condition of the depots' infrastructure—their facilities and equipment—generally has remained in the fair-to-poor range and has not improved, while backlogs of facility projects grew by $3.1 billion. We made two recommendations to improve the DOD strategy for addressing deteriorating facilities and equipment. GAO, *Military Depots: DOD Strategy for Addressing Deteriorating Facilities and Equipment Is Incomplete*, GAO-22-105009 (Washington, D.C.: May 9, 2022).

[30]GAO, *Naval Shipyards: Ongoing Challenges Could Jeopardize Navy's Ability to Improve Shipyards*, GAO-22-105993 (Washington, D.C.: May 10, 2022).

major facets of the public shipyards' operations: dry docks, facilities, and capital equipment (see fig. 11).

**Figure 11: Major Areas for Improvement Identified in the Navy's Shipyard Infrastructure Optimization Plan**




Source: GAO analysis of Navy documents; Defense Visual Information Distribution Service (photos). | GAO-23-106673

The Navy has implemented some of our recommendations in its efforts to improve shipyards, such as creating a program office to manage the Shipyard Infrastructure Optimization Plan. In addition, we previously reported that the Navy invested in shipyard infrastructure above the minimum level set by statute and the average condition of facilities at Navy shipyards has improved at three of the four shipyards from 2016 to 2020.[31]

However, we found that the Navy faces a number of remaining challenges to improving the infrastructure at the shipyards.

- The backlog of facility restoration and modernization projects—those intended to restore, renovate, or replace buildings or components—has increased by over $1.6 billion from 2017 to 2020.

[31]GAO, *Naval Shipyards: Ongoing Challenges Could Jeopardize Navy's Ability to Improve Shipyards*, GAO-22-105993 (Washington, D.C.: May 10, 2022).

- The average age of capital equipment has continued to increase. More than half the equipment at the shipyards is past its expected service life.
- The cost of dry dock projects has doubled and may grow further. In 2018, the Navy estimated that it would need $4 billion to modernize its 17 dry docks. However, the Navy reports that the cost of just the first three dry dock projects has grown by over $4 billion. This is on top of costs not included in the initial Shipyard Infrastructure Optimization Plan estimate—such as inflation, utilities, environmental remediation, and historical preservation—which could add billions.
- Initial Shipyard Infrastructure Optimization Plan schedule goals have slipped. Detailed shipyard investment plans will not be complete until fiscal year 2025, 3 years later than planned.
- Completely implementing the Shipyard Infrastructure Optimization Plan will involve funding well above the levels allocated in recent years for shipyard infrastructure, as well as significant planning and sustained management attention over 20 years.

We have made nine recommendations related to the Navy's public shipyards. The Navy concurred with these recommendations and has fully implemented five of them. Addressing our remaining recommendations could assist the Navy in reaching its goals of improved shipyard capacity and performance. For example, developing accurate cost estimates will help the Navy articulate its resource needs to fully implement the Shipyard Infrastructure Optimization Plan. This includes optimizing facilities and replacing aged equipment in addition to the dry dock improvements already underway.

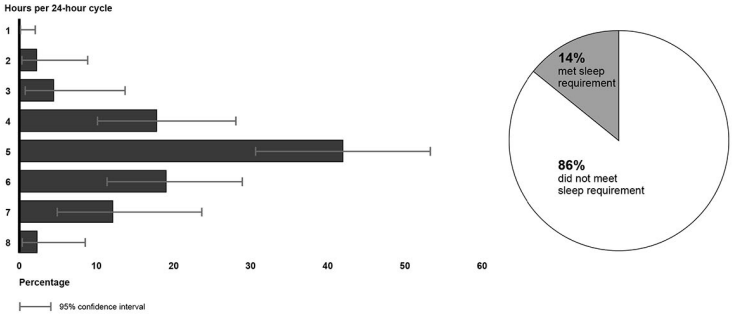
We have an ongoing review examining the Navy's Shipyard Infrastructure Optimization Program cost and schedule and plan to report on the results of that work in summer 2023.

Fatigue and Crewing Shortfalls Affecting Navy Surface Fleet

In 2017, the Navy had four significant mishaps at sea, including two collisions that resulted in the loss of 17 sailors' lives and hundreds of millions of dollars in damage to Navy ships. The Navy has since acted to address sailor fatigue and resize surface ship crews to handle workload. Some steps it has taken include directing the implementation of more sustainable shift rotations on ships, which are intended to provide a better balance of work and sleep for sailors, and reevaluating workload and increasing crew size requirements.

We found in May 2021 that although the Navy had issued a fatigue management policy in 2017, the Navy had inconsistently implemented it and sailors were not receiving adequate sleep.[32] We conducted a survey that estimated that 86 percent of officers received less than the target 7 hours of uninterrupted sleep a day, and that most of these respondents were not able to supplement their lack of sleep with a 2-hour continuous nap, per Navy policy. Moreover, 67 percent of officers received 5 hours or less of sleep each day (see fig. 12). Navy data show that sailor effectiveness declines after prolonged periods without sleep, creating impairment levels comparable to intoxication. Our survey results were consistent with those of a Navy survey conducted in 2020, which found that respondents received an average of 5.4 hours of sleep a day.

**Figure 12: Hours of Sleep Officers Received While Underway on Navy Ships**




Source: GAO analysis of survey of Navy Surface Warfare Officers — Fatigue Management and Career Path. | GAO-23-106673

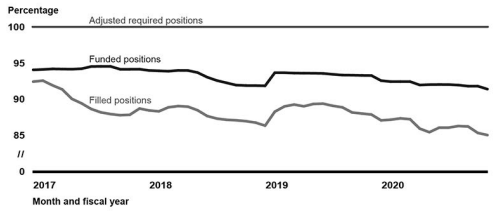
Note: Estimates included in this figure have a margin of error at the 95 percent confidence level of plus or minus 10 percentage points or fewer.

[32]GAO, *Navy Readiness: Additional Efforts Are Needed to Manage Fatigue, Reduce Crewing Shortfalls, and Implement Training*, GAO-21-366 (Washington, D.C.: May 27, 2021).

We estimated that nearly all officers sometimes or often experienced some fatigue-related conditions, such as lack of energy and high levels of stress, and that they rarely, if ever, neglected to perform their duties. In addition, survey respondents reported that they experienced other fatigue-related conditions, including forgetfulness and adverse health effects like sleep apnea. We found that the Navy was taking steps to improve its fatigue management program, but remains limited in its effort to address the causes of fatigue and inadequate sleep. This is because they lack quality information upon which to base decisions in real time and address the causal factors. The Navy is testing efforts to collect data and use it to better manage fatigue. It expects to complete these efforts in 2024.

We also found in May 2021 that the Navy routinely assigned fewer crewmembers to its ships than its workload studies have determined are needed to safely operate them. Until recently, the Navy tracked and internally reported its crewing against the number of funded positions rather than against required positions, a practice which understated crewing shortfalls (see fig. 13).

**Figure 13: Average Surface Fleet Enlisted Crew Positions Required, Funded, and Filled, Fiscal Years 2017 through 2020**




Source: GAO analysis of U.S. Navy data. | GAO-23-106673

As a result, the Navy did not accurately measure the full extent of shortfalls, which almost doubled on average from 8 percent in October 2016 to 15 percent in September 2020. The Navy began tracking required positions in February 2021 and issued guidance accordingly in December 2021. The Navy also used funded positions, rather than requirements, to project its future personnel needs. Therefore, it was not accurately

communicating to internal decision makers the number of personnel it will need as the fleet grows, which may have prevented it from effectively mitigating current crewing shortfalls. In 2022, the Navy calculated its future personnel needs using both funded positions and crew requirements. These projections show that the Navy needs 3,000 to 10,000 more personnel over the next 30 years when it uses the more accurate measure of crew requirements rather than funded positions.

We made eight recommendations to the Navy that, among other things, it revise its guidance and practices to measure sailor fatigue and address the factors causing fatigue, use required positions when reporting crew sizes and projecting personnel needs, and factor training time into sailor workload. DOD concurred with our recommendations and has implemented four of them. Four recommendations have not yet been implemented, including those to address the factors causing sailor fatigue and inadequate sleep and to establish a process for assisting units with fatigue management.

We have ongoing reviews examining Navy crewing processes and naval force generation, and plan to report on the results of that work in fall 2023 and 2024, respectively.[33]

## Ground Domain

### Shortfalls in Army Rail Support and Insufficient Sealift Training Affects Readiness

Rail transportation is the primary means of moving ammunition, tracked vehicles, and other items needed by deploying units from their bases to ports of embarkation within the United States in support of contingencies and exercises. Army officials have stated that during contingencies, approximately 67 percent of Army unit equipment moves by rail from its fort or base of origin to a shipping port (see fig. 14). In 2003, for example, nearly 1 million tons of unit equipment moved by rail in support of Operation Iraqi Freedom. This is the rough equivalent of moving more

[33]We have also reported on the extent to which the Navy has met its goals and identified measures of success for the Optimized Fleet Response Plan—its cyclical process for building readiness and preparing ships for deployment. See GAO, *Navy Readiness: Actions Needed to Improve Process for Preparing Ships to Deploy*, GAO-23-105294SU (Washington, D.C.: Nov. 1, 2022).

than twice the total number of M1-series tanks in the Army's current inventory.[34]

**Figure 14: DOD Personnel Moving Equipment on Non-Restricted Track**

Source: Department of Defense. | GAO-23-106673

The resources required to effect such a movement are sizeable as well. A 2020 simulation of deployment from a single fort in support of a large-scale combat operation demonstrated the need for more than 2,200 rail cars over a 3-day period.[35] More than 600 of those cars were required to move a single Armored Brigade Combat Team. This Army study also noted that such a movement would require a sufficient number of qualified rail operating crews to operate the trains in addition to well-maintained rail track over which the trains would travel.[36]

[34]According to the Army, the latest M1 Abrams tank variant, the M1A2 SEPv2, weighs 71.2 tons. Commercial sources report that there are about 6,300 tanks in the U.S. inventory.

[35]In the 2-year period 2017 through 2018, the Army reported an increased operational tempo that included more than 135 opportunities to practice deployment or redeployment tasks including brigade-size unit movements.

[36]Rail operating crews include personnel such as locomotive engineers, brake operators, and conductors. Rail track refers to a structure composed of rail, ties, and ballast that support the loads of railroad cars and locomotives and guides their movements. Department of the Army Pamphlet 420-1-3, *Transportation Infrastructure and Dams* (Apr. 9, 2009).

In August 2021, we found that the Army has acknowledged that aspects of rail operations and force structure have evolved and the Army has made efforts to identify and address shortfalls.[37] However, the Army has not determined the number of rail operating crews needed to support large-scale combat operations. Without such a determination and a quantifying of the risk of any shortfalls for combat operations, the Army and DOD may not be certain that they can fully support a large-scale combat operation and cannot fully understand the risks associated with their current operating environment.

The Army has undertaken several efforts to manage the condition of its rail track, such as inspections to monitor track conditions and repairs. However, the Army has not addressed a number of rail track challenges because it has not fully implemented a quality assurance program in its rail guidance, or in its processes to provide timely information on the condition or repairing of track. As a result, as of 2021, 59 percent of the track on Army installations (over 550 miles) was rated as "red track," or track that is closed to traffic due to defects. If the Army does not require a quality assurance program for overseeing the management of rail track, the Army will not have a comprehensive approach for its rail track and will not have coordinated oversight in managing efforts such as inspections, funding for repairs, and ensuring up-to-date rail track conditions. Moreover, DOD may be unaware of Army rail track conditions and will not be able to fully inform decision makers with timely information so they may address any gaps to help support the missions of combatant commanders.

We made three recommendations to the Army to determine the requirement for trained rail operating crews, quantify the risk of any shortfall of crews, and require and implement a quality assurance program to inform decision-making in providing oversight of rail track conditions. The department concurred with all three recommendations, but has not yet implemented any of them.

DOD has also not updated surge sealift training to prepare for contested environments. We reported in February 2021 that China and Russia are strengthening their militaries to neutralize U.S. strengths, including mobility—the ability of U.S. military airlift and air refueling aircraft and

[37]GAO, *Defense Transportation: The Army Should Take Action to Better Ensure Adequate Rail Support to Combatant Commanders*, GAO-21-411 (Washington, D.C.: Aug. 23, 2021).

sealift ships to rapidly move equipment and personnel from the United States to locations abroad to support DOD missions.[38] The *Commission on the National Defense Strategy* reported that it has serious reservations about the ability of DOD's mobility forces to support the department's global operations, particularly in the event of a high-intensity conflict or multi-theater operations.[39]

DOD and its think tanks have conducted a number of contested mobility-related studies in recent years, and DOD has used the studies to inform planning and decision-making, according to DOD officials. However, DOD cannot account for the implementation, as appropriate, of all the studies' recommendations. DOD may be missing opportunities to leverage existing studies to further mitigate threats before they contest DOD mobility in an actual military contingency. For example, DOD has updated aspects of war-game exercises and mobility training to prepare for a contested environment, but has not updated training for the surge sealift fleet—ships owned by DOD and the Department of Transportation's Maritime Administration and crewed by contracted mariners. Figure 15 shows examples of Military Sealift Command and Maritime Administration Sealift Ships.

[38]GAO, *Defense Transportation: DOD Can Better Leverage Existing Contested Mobility Studies and Improve Training*, GAO-21-125 (Washington, D.C.: Feb. 26, 2021).

[39]Commission on the National Defense Strategy for the United States, *Providing for the Common Defense: The Assessment and Recommendations of the National Defense Strategy Commission*, November 14, 2018.

**Figure 15: Examples of Military Sealift Command and Maritime Administration Sealift Ships and Their Roles**


**As an operation progresses, sealift delivers heavy military units and their support equipment, such as tanks, as well as vital sustainment for deployed forces. In most operations, sealift accounts for the majority of the total cargo delivered to an operational area.**

Source: (1. & 6.) Military Sealift Command/Jennifer Hunt; (2.) U.S. Navy/Grady T. Fontana; (3.) U.S. Navy/Photographer's Mate First Class Arlo K. Abrahamson; (4.) U.S. Air Force/Airman First Class Kristen Heller; (5.) U.S. Navy/Petty Officer Second Class Nicholas Bauer. | GAO-23-106673

Sealift is the means by which the majority of military equipment would be transported during a major conflict and is critical to supporting the U.S. military's global operation. It's important that DOD appropriately train crews for contested mobility. However, the training requirements for the U.S. citizen mariners who are contracted to crew surge-sealift ships that might have to operate in contested environments have not been evaluated and updated as appropriate. The crews are primarily trained and qualified to operate the ship and receive limited contested mobility training. While DOD has updated air mobility training and other aspects of mobility training, sealift crew training requirements have not been updated by DOD and the Maritime Administration to reflect contested environment concerns because DOD has not conducted an evaluation of such training.

We recommended that DOD designate an oversight entity to track the implementation of study recommendations, and that DOD and the Maritime Administration evaluate and update sealift training. DOD and the Department of Transportation generally concurred with each recommendation and have implemented one. U.S. Transportation

Command compiled the recommendations from prior contested mobility studies and evaluated each one. As a result, DOD has leveraged existing knowledge on contested mobility to address challenges before they inhibit DOD's ability to conduct mobility during major conflicts.

We have several ongoing reviews examining issues in the ground domain. We plan to report on our work on Marine Corps U.S. Indo-Pacific Command posture in spring 2023; DOD logistics in the European theater in summer 2023; Army and Marine Corps multi-domain units in 2024; and Army force generation in 2024.

## Actions Needed to Prevent Army and Marine Corps Tactical Vehicle Accidents

The Army and Marine Corps are placing more of an emphasis on rebuilding training readiness for a full spectrum of operations for great power competition. The Army and Marine Corps use tactical vehicles, such as tanks and trucks, to achieve a variety of missions across a broad range of terrain and environmental conditions. The Army and Marine Corps have experienced tactical vehicle accidents that resulted in service member deaths during non-combat scenarios, such as training events.[40] Tactical vehicle accidents can be caused by human, environmental, and mechanical factors. Accidents take many forms including vehicle-to-vehicle collisions, vehicle-to-pedestrian collisions, and vehicle rollovers, for example (see fig. 16).[41]

[40]DOD uses the term "mishaps" to refer to accidents that occur outside of engagement with an adversary. A mishap is an unplanned event or series of events that results in damage to DOD property; occupational illness to DOD personnel, injury or death to on- or off-duty DOD military personnel, injury or death to on-duty DOD civilian personnel, damage to public or private property, or injury or death or illness to non-DOD personnel, caused by DOD activities. In this testimony, we use the term "accident" to mean mishap. Department of Defense Instruction 6055.07, *Mishap Notification, Investigation, Reporting, and Record Keeping* (June 6, 2011) (incorporating change 1, Aug. 31, 2018).

[41]We defined a vehicle "rollover" as any accident that causes the tactical vehicle to come into contact with the ground on any of its surfaces outside of its wheels or tracks.

**Figure 16: A Tactical Vehicle Rollover Accident**

Source: U.S. Army/Defense Visual Information Distribution Service. | GAO-23-106873

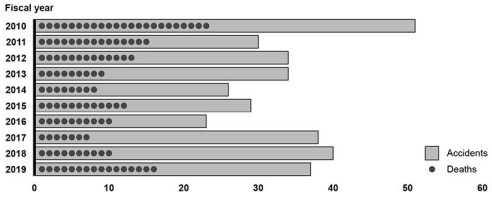
In July 2021 we found that, from fiscal years 2010 through 2019, the Army and Marine Corps reported 3,753 tactical vehicle accidents from non-combat scenarios and 123 resulting military deaths, according to our analysis of Army and Marine Corps data.[42] Of the total, 342 were Class A and B accidents, which have the most serious injuries and financial costs (see fig. 17).[43] Driver inattentiveness, lapses in supervision, and lack of

[42]GAO, *Military Vehicles: Army and Marine Corps Should Take Additional Actions to Mitigate and Prevent Training Accidents*, GAO-21-361 (Washington, D.C.: July 7, 2021).

[43]DOD categorizes the severity of accidents by grouping them into classes. Class A accidents are the most serious and involve a death, permanent total disability, or, for the period of our analysis, damage greater than or equal to $2 million. Class B accidents result in a permanent partial disability, three or more personnel receiving inpatient hospital care, or, for the period of our analysis, $500,000 to under $2 million in damages. (DOD adjusted the cost thresholds for accident classes upward in October 2019, after the period of our analysis.) The Army had 289 Class A and B accidents in fiscal years 2010 through 2019, and the Marine Corps had 53 over the same time frame. The disparity in number of accidents between the two military services is likely due in part to the Army having 2.5 times as many active duty personnel as the Marine Corps.

training were among the most common causes of these accidents, according to our analysis of Army and Marine Corps data.

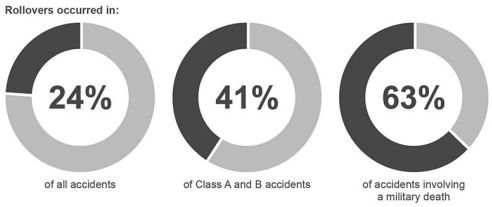
**Figure 17: Number of Army and Marine Corps Class A and B Tactical Vehicle Accidents and Resulting Military Deaths, Fiscal Years 2010 through 2019**




Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-106673

Rollovers were associated with almost a quarter of all reported tactical vehicle accidents during fiscal years 2010 through 2019, but they were present in more than 40 percent of Class A and B accidents and 63 percent of accidents involving a military death, according to our analysis (see fig. 18).

**Figure 18: Percentage of Army and Marine Corps Tactical Vehicle Accidents Involving Rollovers, Fiscal Years 2010 through 2019**




Source: GAO analysis of Department of Defense data. | GAO-23-106673

The number of accidents reported involving rollovers generally decreased over this time period, from 131 in fiscal year 2010 to 64 in fiscal year 2019. The number of Class A and B accidents involving rollovers fluctuated during these 10 years, though rollovers generally decreased as a percentage of all Class A and B accidents.

From fiscal years 2010 through 2019, 123 soldiers and marines lost their lives in accidents that were caused in most cases by operator and supervisory errors according to the data. Tactical vehicle accident prevention is a multifaceted effort that requires effective risk management practices, driver training programs, and methods to identify and communicate potential hazards on training ranges. A breakdown in planning, oversight, or implementation can lead to injuries to service members, including deaths, and damage to expensive vehicles.

For example, the Army and Marine Corps established practices to mitigate and prevent tactical vehicle accidents, but units did not consistently implement these practices. We found that issues affecting vehicle commanders and unit safety officers hindered Army and Marine Corps efforts to implement risk management practices. For example, the Army and Marine Corps had not clearly defined the roles or put procedures and mechanisms in place for first-line supervisors, such as vehicle commanders, to effectively perform their role. As a result, implementation of risk management practices, such as following speed limits and using seat belts, was ad hoc among units.

We made nine recommendations to DOD, including that the Army and Marine Corps more clearly define roles and establish procedures and mechanisms to help supervisors enhance tactical vehicle safety, and develop performance criteria and measurable standards for driver training programs. The department concurred with our recommendations; however, they have not yet been implemented.

We have ongoing work examining Special Operations Forces training accidents with plans to report on the results of that work in spring 2024.[44]

## Space Domain

[44]We reported in March 2023 on National Guard helicopters accidents and the actions needed to improve safety, making 8 recommendations to the Army and Air Force. GAO, *National Guard Helicopters: Additional Actions Needed to Prevent Accidents and Improve Safety*, GAO-23-105219 (Washington, D.C.: Mar. 14, 2023).

## Space Readiness Goals and Threat Standards Are Unclear

We found in April 2021 that the military services reported a variety of challenges regarding the space domain. These included (1) readiness reporting not being required of all space units resulting in DOD not tracking the readiness of units conducting unique space missions, (2) DOD not having clear readiness goals for space units, and (3) unit-level readiness reporting not accurately conveying the readiness of key space capabilities.[45]

We recommended in November 2021 that DOD incorporate space control—operations that ensure freedom of action in space for the United States and its allies and deny an adversary's freedom of action in space—into rebuilding readiness plans and identify milestones and metrics to assess progress toward addressing identified readiness issues. We also recommended that DOD establish uniform threat standards that units will use when assessing their readiness to conduct their mission in a contested space environment.[46]

We also recommended that DOD set specific measurable objectives and milestones for implementing DOD's space control goals over the next decade, as laid out in the *Defense Space Strategy*. DOD partially concurred, stating that it did not need a separate implementation plan and will rely on existing processes. However, we found that the strategy does not establish specific measures and milestones to assess progress to meeting its identified objectives. Further, while DOD stated that they intend to use the budget process to oversee implementation of the strategy, we previously found significant limitations to relying on the budget process for complex force structure decisions. The department's lack of specific measurable objectives or milestones could significantly impede its ability to understand if its efforts and investments are sufficient and timely.

We have a range of ongoing reviews examining readiness and sustainment issues in the space domain. We plan to report on our work examining the integration and sharing of information at the National Space Defense Center in spring 2023; Satellite Control Network

[45]GAO, *Military Readiness: Department of Defense Domain Readiness Varied from Fiscal Years 2017 through 2019*, GAO-21-279 (Washington, D.C.: Apr. 7, 2021).

[46]The Department of Defense concurred with our recommendations, but as of April 2023 had not taken any actions. See, GAO, *Space Operations: DOD Efforts to Improve Space Control Shortfalls Underway but Longstanding Challenges Persist*, GAO-22-530C (Washington, D.C.: Nov. 8, 2021).

demands, sustainment challenges, and acquisition efforts in spring 2023; and efforts to address DOD space readiness challenges in 2024.

Looking to the future, DOD will need to continue to balance rebuilding the readiness of its existing force with its desire to modernize. We have examined this tension in specific capability areas. In December 2022, we reported on DOD's tactical aircraft investment plans, finding that the lack of a portfolio review of tactical aircraft platforms across the services leaves DOD and Congress with limited insight into interdependencies, risks, and related trade-offs among some of DOD's highest priority and most expensive investments.[47] Considering the significant cost of sustaining weapon systems, competing priorities within the military services, and quickly evolving threats, it is prudent that DOD and Congress both have the information they need to make well-informed investment decisions going forward. As DOD develops and deploys new weapons systems and considers new approaches for how its units organize and operate, it will depend on much of today's capabilities for decades to come. As a result, DOD will need continued focus on rebuilding the readiness of its existing forces.

Chair Hirono, Ranking Member Sullivan, and Members of the Subcommittee, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

## GAO Contact and Staff Acknowledgments

If you or your staff have any questions about this testimony, please contact Diana Maurer, Director, Defense Capabilities and Management, at (202) 512-9627 or maurerd@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. GAO staff who made key contributions to this testimony are Chris Watson (Assistant Director), Nicole Volchko (Analyst-in-Charge), Ava Bagley, Emily Biskup, John Bumgarner, Nicole Harris, Amie Lesser, Tobin McMurdie, Janine Prybyla, Michael Shaughnessy, Michael Silver, Matthew Thompson, and Emily Wilson.

[47]GAO, *Tactical Aircraft Investments: DOD Needs Additional Portfolio Analysis to Inform Future Budget Decisions*, GAO-23-106375 (Washington, D.C.: Dec. 20, 2022).

# Related GAO Products

Report numbers with a C or RC suffix are classified. Report numbers with a SU suffix are sensitive but unclassified. Classified and sensitive but unclassified reports are available upon request to personnel with the proper clearances and the need to know.

*Navy Ship Fires: Ongoing Efforts to Improve Safety Should Be Enhanced.* GAO-23-105481. Washington, D.C.: April 20, 2023.

*Weapon System Sustainment: The Army and Air Force Conducted Reviews and the Army Identified Operating and Support Cost Growth.* GAO-23-106341. Washington, D.C.: March 30, 2023.

*Tactical Aircraft: Technical, Delivery, and Affordability Challenges Complicate DOD's Ability to Upgrade Its Aging Fleet.* GAO-23-106694. Washington, D.C.: March 29, 2023.

*National Guard Helicopters: Additional Actions Needed to Prevent Accidents and Improve Safety.* GAO-23-105219. Washington, D.C.: March 14, 2023.

*Weapon System Sustainment: Navy Ship Usage Has Decreased as Challenges and Costs Have Increased.* GAO-23-106440. Washington, D.C.: January 31, 2023.

*Tactical Aircraft Investments: DOD Needs Additional Portfolio Analysis to Inform Future Budget Decisions.* GAO-23-106375. Washington, D.C.: December 20, 2022.

*Military Readiness: Actions Needed to Further Implement Predictive Maintenance on Weapon Systems.* GAO-23-105556. Washington, D.C.: December 8, 2022.

*Weapon System Sustainment: Aircraft Mission Capable Goals Were Generally Not Met and Sustainment Costs Varied by Aircraft.* GAO-23-106217. Washington, D.C.: November 10, 2022.

*Navy Readiness: Actions Needed to Improve Process for Preparing Ships to Deploy.* GAO-23-105294SU. Washington, D.C.: November 1, 2022.

*National Security Snapshot: U.S. Support for the War in Ukraine.* GAO-22-106079. Washington, D.C.: September 8, 2022.

*F-35 Aircraft: DOD Should Assess and Update Its Engine Sustainment Strategy to Support Desired Outcomes.* GAO-22-104678. Washington, D.C.: July 19, 2022.

*Air Force and Navy Aviation: Actions Needed to Address Persistent Sustainment Risks.* GAO-22-104533. Washington, D.C.: June 15, 2022.

*Military Readiness: DOD Domain Readiness from Fiscal Year 2017 through Fiscal Year 2021.* GAO-22-105279C. Washington, D.C.: May 18, 2022.

*Naval Shipyards: Ongoing Challenges Could Jeopardize Navy's Ability to Improve Shipyards.* GAO-22-105993. Washington, D.C.: May 10, 2022.

*Military Depots: DOD Strategy for Addressing Deteriorating Facilities and Equipment Is Incomplete.* GAO-22-105009. Washington, D.C.: May 9, 2022.

*Navy Ships: Applying Leading Practices and Transparent Reporting Could Help Reduce Risks Posed by Nearly $1.8 Billion Maintenance Backlog,* GAO-22-105032. Washington, D.C.: May 9, 2022.

*F-35 Sustainment: DOD Faces Several Uncertainties and Has Not Met Key Objectives.* GAO-22-105995. Washington, D.C.: April 28, 2022.

*Littoral Combat Ship: Actions Needed to Address Significant Operational Challenges and Implement Planned Sustainment Approach.* GAO-22-105387. Washington, D.C.: February 24, 2022.

*Combat Helicopters: Actions Needed to Fully Review Readiness Goals and Address Long-Standing Maintenance Challenges.* GAO-22-104607SU. Washington, D.C.: February 15, 2022.

*Navy Ship Maintenance: Actions Needed to Monitor and Address the Performance of Intermediate Maintenance Periods.* GAO-22-104510. Washington, D.C.: February 8, 2022.

*Space Operations: DOD Efforts to Improve Space Control Shortfalls Underway but Longstanding Challenges Persist.* GAO-22-530C. Washington, D.C.: November 8, 2021.

*Defense Transportation: The Army Should Take Action to Better Ensure Adequate Rail Support to Combatant Commanders.* GAO-21-411. Washington, D.C.: August 23, 2021.

*F-35 Sustainment: DOD Needs to Cut Billions in Estimated Costs to Achieve Affordability.* GAO-21-439. Washington, D.C.: July 7, 2021.

*Military Vehicles: Army and Marine Corps Should Take Additional Actions to Mitigate and Prevent Training Accidents*. GAO-21-361. Washington, D.C.: July 7, 2021.

*Navy Readiness: Additional Efforts Are Needed to Manage Fatigue, Reduce Crewing Shortfalls, and Implement Training.* GAO-21-366. Washington, D.C.: May 27, 2021.

*Defense Logistics: Army Should Ensure New System Operates in All Situations and Soldiers Complete Training.* GAO-21-313. Washington, D.C.: April 12, 2021.

*Military Readiness: Department of Defense Domain Readiness Varied from Fiscal Year 2017 through Fiscal Year 2019.* GAO-21-279. Washington, D.C.: April 7, 2021.

*Defense Transportation: DOD Can Better Leverage Existing Contested Mobility Studies and Improve Training.* GAO-21-125. Washington, D.C.: February 26, 2021.

*Navy and Marine Corps: Services Continue Efforts to Rebuild Readiness, but Recovery Will Take Years and Sustained Management Attention.* GAO-21-225T. Washington, D.C.: December 2, 2020.

*Navy Maintenance: Navy Report Did Not Fully Address Causes of Delays or Results-Oriented Elements.* GAO-21-66. Washington, D.C.: October 29, 2020.

*Navy Shipyards: Actions Needed to Address the Main Factors Causing Maintenance Delays for Aircraft Carriers and Submarines*. GAO-20-588. Washington, D.C.: August 20, 2020.

*Weapon System Sustainment: DOD Needs a Strategy for Re-Designing the F-35's Central Logistics System.* GAO-20-316. Washington, D.C.: March 6, 2020.

*Military Readiness: Update on DOD's Readiness Recovery and Domain Readiness Assessment.* GAO-19-390RC. Washington, D.C.: May 6, 2019.

*F-35 Aircraft Sustainment: DOD Needs to Address Substantial Supply Chain Challenges.* GAO-19-321. Washington, D.C.: April 25, 2019.

*Defense Strategy: Revised Analytic Approach Needed to Support Force Structure Decision-Making.* GAO-19-385. Washington, D.C.: March 14, 2019.

*F-35 Aircraft Sustainment: DOD Needs to Address Challenges Affecting Readiness and Cost Transparency*. GAO-18-75. Washington, D.C.: October 26, 2017.

*Military Readiness: DOD's Readiness Rebuilding Efforts May Be at Risk without a Comprehensive Plan.* GAO-16-841. Washington, D.C.: September 7, 2016.

*F-35 Sustainment: DOD Needs a Plan to Address Risks Related to Its Central Logistics System.* GAO-16-439. Washington, D.C.: April 14, 2016.

*F-35 Sustainment: Need for Affordable Strategy, Greater Attention to Risks, and Improved Cost Estimates.* GAO-14-778. Washington, D.C.: September 23, 2014.

Senator HIRONO. Thank you very much, Ms. Maurer, especially for pointing out all of the areas where improvements can be made, and I thank you also for acknowledging that in spite of these major shortfalls, I would say, that we still remain the best military in the world.

For that, I commend all of you who are here today. Let me start the questioning being very specific. General George, I am aware that the Army conducted a survey of unaccompanied barracks residents last summer and that the Army has those results.

I have two questions, when can you provide this Committee with those survey results, and what are the preliminary results of the survey? And are you already beginning to address the suggestions made in the survey?

General GEORGE. Chair Hirono, yes, we did conduct a survey. We went to five different installations to look at barracks, and the idea of it was actually to conduct a survey on what they would want.

As we are building barracks, we are going to be spending $1 billion a year, and it has got the kitchenettes, size, common areas, and those kinds of things. That is what the survey was for, so that we could get design feedback as we start to build barracks into the future.

So, we will certainly—I know we normally provide data on housing, and we will look—in June, I think is where we could provide. I don't see any reason why we couldn't provide those survey results.

[The information referred to follows:]

General GEORGE. The results of the Department of the Army's survey of unaccompanied barracks residents at five installations over the summer of 2022 were released to the Committee on June 16th, 2023.

Senator HIRONO. The barracks with kitchenettes, et cetera, that sounds really nice, but what are some of the issues that were evidenced by the survey, such as things like mold and things like having more than the number of people that the barracks were designed in the barracks.

I mean, there is some pretty basic kinds of concerns that were expressed, I am sure, by this survey. But something like getting rid of mold, that is pretty basic. I would think that you would want to address those issues first.

General GEORGE. Yes, Senator.

Senator HIRONO. Am I correct?

General GEORGE. Yes, Senator. We—and to that, we have inspected all 68,000 buildings in the Army for mold. We found about 2,500 of them that had mold. We have already undertaken remediation. It was about $3.5 million worth of remediation, so that was immediately invested in.

Then, innovation from our young troops that came up with the 3D printing that we are trying to make sure that we have something out there to notice that that is happening. But we are absolutely focused on that.

Senator HIRONO. All of you have testified that the people are the important thing, and that is why I would be very interested to get this report from you, General George, and work with you on how we can achieve the recommendations that came out of the survey.

I am concerned about the impact my colleague's hold on military nominations has on the readiness of our forces. When we—this is for all of you. When we cannot confirm officers to the positions they have worked hard for and are best suited to, it is our military families that pay the first price.

Planned moves, school changes, spouse employment opportunities, all are now frozen indefinitely. Going forward, what are the readiness impacts of freezing general and flag officer promotions on the rest of the force and our senior officers' families? We will just go right down the line, starting with you, General George.

General GEORGE. Yes, Senator, I think you pretty much covered it in your statement. I mean, I think the real challenge right now and quality of life obviously impacts, you know, readiness.

But really the impact is families that are moving, jobs, you know, spouse jobs, getting orders to move kids into school. It is more aligned with that. There is a cascading effect just given the number of people.

Senator HIRONO. General Franchetti.

Admiral FRANCHETTI. Similarly, this would impact our families. On the flag officer side of the house, a few are critical this year. First of all, the director of naval reactors responsible for 60 reactors. We also have three fleet commanders, including the one in the Western Pacific and the one in the Middle East.

Then all of our, specially focused on readiness, our type commanders, so surface, subsurface, and air, they all rotate this year, and they are the ones that do the man, train, equip missions. So again, this will have the biggest impact on readiness if they are delayed.

Senator HIRONO. General Smith.

General SMITH. Chairwoman Hirono, I will just give one example. One of our expeditionary forces, about 45,000 marines, has a three star and one star. That three stars will retire this summer. Long service suffered a family tragedy as well, so he will retire. That will leave that expeditionary force with a one star.

So instead of focusing on the Marine Expeditionary Units, which is that one star's normal job, he will do that and focus on the rest of the Marine Expeditionary Force (MEF). So that is a significant amount of supervision and experience that is no longer focused where it should be, on our most precious asset, the marines and those Marine Expeditionary Units. That is just a small anecdote, but that is not a one off. That is a one of many.

Senator HIRONO. My time is running out, but I did want to give the other two generals a moment. General Smith, and then General Allvin.

General SMITH. Chair Hirono, just very similar to what the other leaders here have mentioned. We have five either commanders or senior officers in the Indo-Pacific that are scheduled to move their positions, and two four-stars who are ready to retire for similar reasons that the Assistant Commandant of the Marine Corps (ACMC) mentioned.

Senator HIRONO. General Allvin.

General ALLVIN. Madam Chair, the topic has been covered. Just one specific example. We need to put general officer leaders out into the combatant commands to ensure they are effectively integrating space and dealing with the issues of the contested environment. That is one example of where we need that leadership.

Senator HIRONO. Thank you very much. Senator Sullivan.

Senator SULLIVAN. Thank you, Madam Chair. General Smith, I want to give you an opportunity to followup on two of the issues that I raised in my opening statement. The first is, at least for me, and maybe you and I have talked about it, maybe I am just too dense to understand it.

But the confusion on the impacts on the aviation sector of Force Design. The Marine Corps staff provide in my office numbers that said the Marine Corps would be putting into storage or inventory management as many as 60 MV–22s, 30 Cobras, 24 Hueys, 48 CH–53s, and 54 F–35 Bravos.

On April 18th, I walked through these numbers with the commandant in a closed session. I asked him if they were accurate. He said they weren't, despite the fact that my office got them from the Marine Corps.

What are the accurate numbers? My next question, you can just take them at the same time. CSIS [Center for Strategic and International Studies] did a very big, comprehensive, important series of war plans. I hope the Marine Corps is reading it. I hope the Marine Corps is looking at it.

I hope the Marine Corps is digesting it. I hope the Marine Corps is talking to CSIS about it because they weren't impressed with the Marine Corps littoral regiments. They didn't think they worked very well.

Marine Force Design is designed exactly for that scenario, and you have a big war game that says, it is not really working. So, can you address both of those questions for me? The really important and I think we need detailed answers.

General SMITH. I can, Senator, thank you. I will do the aviation first. The numbers that you cited are correct. I will guarantee you, we provided inaccurate to our Commandant. The numbers you cited are what we call pipeline and attrition are correct. The biggest issue I would say is, sir, we haven't, "divested of airplanes." They do go in storage, and I will use an——

Senator SULLIVAN. So, then we are not using those—we are not going to use 54 F–35 Bravos?

General SMITH. If I can give you a quick example, Senator. The MV–22s that you referenced, 360 was the number we were to buy. We have bought them all. We have them. We own every one of them. Those aircraft have to last until 2055. That is when our budget plans for them to go out of service.

The original attrition model that they were purchased upon is not accurate. The attrition models had hard landings, those kinds of things. If we didn't go from 12 to 10 planes per squadron and changed the number of squadrons from 18 to 16, we would have run out of those airplanes years before 2055.

So just as infantry officer, sir, I always have something in reserve. We didn't get rid of them, but when they are needed, we will use those airplanes. It is the same for all type models and series.

Senator SULLIVAN. If we could get for the record, kind of details about, and this was a question for—in the Commandant's recent testimony as well. How about on the CSIS war study?

[The information referred to follows:]

General SMITH. Primary Aircraft Authorization (PAA), plus Backup Aircraft Authorization (BAA) and Attrition Reserve (ATT) combine to determine a Program of Record (POR) request. Once a POR is bought, all Services conduct inventory management to ensure the Service employs the aircraft to its maximum service life and, in many cases, beyond its projected service life.

Services manage inventory through various means; two common tools for managing inventory are squadron organization (flags) or squadron composition (number of aircraft per squadron). To provide historical context on inventory management through organizational and composition practices:

Between 1990 and 2015, CH–53 Active component Marine Heavy Lift Helicopter Squadrons (HMH) fluctuated from nine to ten, to nine, to ten, to eight squadrons.

Between 1990 and 2016, H–1 Active component Marine Light Attack Helicopter Squadrons (HMLA) fluctuated from six to eight, to nine, to eight, to seven squadrons.

Between 2011 to 2014, MV–22 Active component Marine Medium Tiltrotor Squadrons (VMM) fluctuated from 18 to 16 to 18 squadrons.

Between 1990 to 2016, F/A–18 Active component Marine Fighter Attack Squadrons (VMFA) changed organizational construct and composition nine times.

In 2007, F35's organizational and composition was planned to be 14 squadrons of 10 aircraft and seven squadrons of 14 aircraft.

- In 2009, it increased seven of the squadron's allocations to 16 aircraft.
- In 2011, F–35C was incorporated.
- In 2013, the plan changed to nine squadrons of 16 aircraft and nine squadrons of 10 aircraft.
- All these changes were done without adjusting POR.

Aircraft inventory management for the Marine Corps is defined by SECNAVINST 5442.3, the Management of the Naval Aircraft Inventory and Unmanned Aircraft Systems Instruction, which provides the framework for how the Service determines the appropriate quantities of BAA and ATT. Each airframe type uses different percentages based on historical data to calculate BAA and ATT.

Per SECNAVINST 5442.3, as a planning factor, ATT is a prediction of the number of aircraft that will cease operating due to a mishap or damage to the extent that restoration is uneconomical or impractical. ATT does not factor in wartime attrition. Attrition planning factors are computed using a 5-year running average from the Aircraft Inventory and Readiness Reporting System (AIRRS) data base. AIRRS provides the Offices of the Secretary of Defense, the DON, and subordinate commands with comprehensive information on Navy and Marine Corps aircraft.

Per SECNAVINST 5442.3, the ATT number may be adjusted using professional judgment when agreed upon by the Chief of Naval Operations, Director, Air Warfare (OPNAV N98), Commander, Naval Air Forces (COMNAVAIRFOR), and the Program/Project Management, Air (NAVAIR) when required to factor out unusual circumstances such as an unusually high mishap rate in a particular year and as a method to predict attrition rates for new aircraft, which have not established an attrition rate. Attrition rates are expressed as a percentage of PAA projected to attrite from the operating inventory annually.

*F–35:* ATT calculated using an attrition planning factor of 0.9 percent.

*CH–53K:* ATT calculated using an attrition planning factor of 0.5 percent.

*MV–22B:* ATT calculated using an attrition planning factor of 0.74 percent.

*H–1:* ATT calculated using an attrition planning factor of 1.0 percent.

*KC–130J:* ATT calculated using a planning factor of 0.

*MQ–9A:* ATT calculated using a planning factor of 0.

In sum, ATT is a prediction calculated using the historical strike average (previous 5 years) or the best professional judgment for unusual circumstances and new aircraft. Strategic inventory management is vital to ensure the Service has enough backup and attrition aircraft needed to support the operational forces for the program's lifetime.

General SMITH. Sir, I appreciate that question. I am very familiar with the CSIS study. One of the key things that it noted was that the MLRs (Marine Littoral Regiment) were still more effective than the previous formations.

War games, as you know, are designed to find holes, gaps, weaknesses, and then you exploit those, and you fix them. We have got a total of 12 additional war games, 10 at the completely classified level, that also looked at the MLR using the correct ranges or systems, the actual employment methods, and they bear a different result.

I would note that one of the pieces that CSIS noted, and we value that that study, Senator, we do, was that there would be a political challenge. But that has proven not to be, I would say, fully correct.

The Japanese and the United States Government just agreed in the two plus two to keep 12 MLR in Japan, and we are using the third MLR in the Philippines now. So, it is a valuable study, but when it found that we lost 300 airplanes on the ground, most Air

Force lost carriers and cruisers, we don't—or pardon me, destroyers, we don't stop procuring.

We find ways to fix those challenges that that war game presents. So, the MLR is better than what we had. Not as good as it will be when we finally get all of our pieces implemented.

Senator SULLIVAN. Let me talk about those pieces. Admiral, as you can tell, and if you watched any of the full hearing, the Secretary of Navy kind of took it on the chin, with good reason because, a, he got his 30 year shipbuilding plan to this Committee the night before—got your climate action plan done 18 months ago, but your 30 year shipbuilding plan, you got to this Committee the night before the big hearing.

In that shipbuilding plan, 30 years, you don't hit 31 amphibious once, and that is just—as the guy who wrote that provision, and, by the way, is unanimous in this Committee, I find it stunning that the Navy can come up here and just say, you know what, Congress, take a hike.

When are you going to come back here, the Secretary said you would do it soon, to show us when you are going to follow the law. What I don't want to hear is, well, we are going to do a study, Senator. We are going to look at more options. Kate told us we are going to look—like we did the studies. Your job is to follow the law. The Secretary needs to get back up here.

That hearing from him was a disaster. I have been on this Committee for 8 years and I haven't seen anything like that. I hope you have a better answer than he had in the last committee hearing. What is the answer on getting to 31 amphibs, which the Marine Corps desperately needs?

By the way, that is a minimum. You can't just come to the Congress and say, we think that was a suggestion. It wasn't a suggestion. It is just like—it is actually the same language we gave you on 11 carriers. What is the answer on that, Admiral?

Admiral FRANCHETTI. Ranking Member Sullivan, as you know, and as the Secretary, the CNO, and the Commandant testified, the Commandant and the CNO fully agree and understand the 31 amphibs is the law. We are doing the study, coordinating that with Office of the Secretary of Defense (OSD) this summer——

Senator SULLIVAN. But again——

Admiral FRANCHETTI. That will determine the way ahead——

Senator SULLIVAN. Sorry to interrupt. We did the study. Again, I don't understand why you keep telling us—we did the study. You are done—you don't have the option of doing the study. You just have to follow the law.

I don't know why this is so hard on the Navy. We did the study, we did the cost. If you don't have the budget for it, request a bigger budget. We will give it to you. But we don't want another study. We want you to follow the law.

I have gone over my time, but can you just answer that again, without saying you are going to do another study? I want to know when you and the Secretary are going to come back here with a plan that doesn't blow off the Congress and the law for 30 years, which is what your current plan—your plan does not hit 31 amphibs once in 30 years. That is completely unacceptable.

Admiral FRANCHETTI. We will finish the study and we believe that this is a President's Budget 2025 discussion. We put an amphibian contract this year. We are going to deliver another one next year. We currently have 32 and we look forward to that discussion as part of the President's Budget 2025 discussion.

Senator HIRONO. Senator Kaine.

Senator KAINE. I want to associate myself with the punch line from Senator Sullivan. I do think that this is a matter for the President's Budget, and I know that the Service Chiefs and you as witnesses don't get to lobby against the President's Budget.

The President sends us a budget and you are not going to come and testify counter to it. I think this is at the level of the President's Budget, and the Commandant was pretty clear in the hearing that 31 was not only the law, but 31 was the requirement in terms of the military mission.

When I asked him point blank, does either the President's budget or the shipbuilding plan get us there, he was—one word answer, no. I think the punch line is we are expecting an answer. We understand—I understand that you are not going to come in here and lobby against the President's Budget.

That is not what you do. But I think we do need to find what is up, especially since this is the second year where we have had this conversation with the set of mixed messages.

Admiral Franchetti, I wanted to share with you, I have been visiting some of our surface ship, private surface shipyards in the Hampton Roads area and I have heard a very particular challenge that I think could be easy to fix, could be that it might help us with getting ships in and out of repair in a timely way.

Because, I think there has been some suggestions that oftentimes ships under repair don't come out timely. The Navy has a stated policy on these repairs, and we are not talking about the like the mid-career refuels of carriers. We are surface ship, not nuclear repairs.

The Navy has a policy of trying to enter into the contracts on these repairs 120 days before the work is supposed to start. But it is more common that the Navy enters into a contract 30 to 60 days before.

Okay, we need to have it in dock in 45 days, and we need to have it in dock in 60 days. That makes it really hard for the shipyards to staff up. If they are bidding on work, they get a bid of work, they are really excited about it, but the labor market is really tight right now, and so, if they are getting the contract and being told, and you have got to start to work in 60 days, it is hard to staff up to really go at it from day one.

Whereas if you can get the contract 120 days out, which isn't that long, that is 4 months, the—at least the NASCO, General Dynamics, and the BAE Shipyard, these are the two that I have been at in the last month—say, if you can hit that 120 day mark, they can staff up and be ready on day one and then really comply with time guidelines.

At least one of the shipyards was saying, even though it is dramatically shorter than that, they still think they have a pretty good track record of turning the ships out according to the Navy timetable. But that doesn't seem like an unreasonable request to me

that we try to enter into contracts and then give the shipyard 120 days from the date of that contract being signed to fully staff up.

I think if you can do that, you will get ships out the back end in a lot more reliable and regular way. I just wanted to kind of report that from the field as something that I would like you to pay attention to. General George, I want to congratulate you on your nomination to Chief of Staff of the Army.

Just say that really quickly and ask you this question. What is the Army doing to ensure a constant supply of energetics in order to meet current and future munitions requirements and maintain a responsive, organic industrial base, particularly as we are talking about the support that we are providing in Ukraine that can have the effect of diluting some of our efforts in that way?

General GEORGE. Yes, Senator. Obviously, the organic industrial base is critically important. We spend a lot of, I would say, right after recruitment for us, something that we are talking about all the time, we have invested about $1.5 billion in the Army budget on that for our Organic Industrial Base (OIB).

Thanks to the supplemental, there will be another $1.6 billion, for example, down at Radford, is one example of some investments that we are putting down there. As I think you can see, I think, or you may have heard we had—there was another—I think we did, there was a $5 billion deal just done here for GMLRs [Guided Missile and Large Rockets].

It is also the defense industrial base that we are working on. I think what is helping us is the multiyear procurement. Another thing that I think that we have talked about, and we need to look at is you know, what do we do, to your point, is stockpiling.

What are ways that we can get, because we have had some of these supply chain issues, that we would actually have this stuff that we know we are going to need, and we are really supporting the Joint Force. So, we are looking at all of those things, Senator.

Senator KAINE. I appreciate it. Thanks, Madam Chair. I yield back.

Senator HIRONO. Senator Mullin.

Senator MULLIN. Thank you, Madam Chair. General George, Fort Sill is becoming a hub for innovation for counter unmanned aircraft systems (UAS), space, and in the process of standing up the counter UAS university. Lawton has also stood up the Fires Innovation, Science and Technology Accelerator in support of Fort Sill for the Army's priority mission.

Great achievements and advancements have been made in the counter UAS technology, such as lasers and high-power microwaves. What is the development and fielding plan for these systems?

General GEORGE. Okay. Senator, yes, Fort Sill is critically important to us, not just for an integrated air and missile defense in addition to the counter UAS and long-range fires. That is the center for us, for counter UAS, and I mentioned in my opening statement about getting lessons from what we have learned in Ukraine and what we are really attempting to do, and that is happening there.

Then we are doing other testing that is out in both White Sands and Fort Huachuca to rapidly innovate with those products. We are

getting ready to stand up a counter UAS university that is going to start with an initial operating capability.

The whole Joint Force will train there and that will be fully operational capability here in October—by October.

Senator MULLIN. October—that was the answer to my other question. Do we have the right level investment for counter UAS?

General GEORGE. I think we do. This year there was an additional $100 billion that was put towards that, and that is something for the Army as the executive agent really for the joint counter UAS. It is really supporting research and development across all the services that we are focused on—we are kind of just helping to facilitate that. It is a real joint effort throughout.

[The information referred to follows:]

General George would like to correct his statement to read, "This year, there was $100 million that was put toward counter UAS."

Senator MULLIN. Thank you. General Allvin, pilot training is a major priority for this Committee, and Vance Air Force Base, which is in Enid, Oklahoma, is one of the best in the business, training more pilots per year than any other training base in the country.

Unfortunately, both the pilot training center and their dorms need major work to reach their full potential. That work was not listed as a priority for the Air Force, but rather included on the Air Education Training Command's unfunded priorities list.

With the Nation experiencing a shortage of up to 2,000 pilots, why was this not work—why was this work not a higher priority?

General ALLVIN. Well, Senator, you are absolutely right, and Vance are leading the way. As a matter of fact, our Undergraduate Pilot Training (UPT) 2.5 initiative really was started in Vance, and they will be the lead unit for that. With respect to the dormitories overall, there is a dormitory master plan in which actually in the OSD scoring system of the facilities conditions index, 99 percent of our dorms, to include those at Enid, are above the adequate standard.

We would like them to be better than adequate, but they do exceed that standard. We are prioritizing those dorms that are the closest to 80 percent or below. We will continue to look at the Enid dormitories as well as the pilot train—the pilot training center obviously is going to need to transform as we transform the way we do pilot training as well. We will continue.

Senator MULLIN. Have you have you visited Vance?

General ALLVIN. I have. I was there——

Senator MULLIN. Have you seen the training facilities?

General ALLVIN. I have not recently seen the training facilities.

Senator MULLIN. I was just there, and it is literally in temporary facilities. Temporary that has become permanent.

General ALLVIN. Yes, sir.

Senator MULLIN. As you said, Vance is leading the way. There needs to be more done there, and on top of that, Vance is leading the way and we also received a 2 percent cut on reimbursements for housing, when I don't think there is any place in the country that has got a reduction in housing.

It is—I mean, housing is a competition, and in Enid, it is even a bigger competition. I believe that is something we need to get ad-

dressed. If we want to recruit and keep the best, and unfortunately, we are competing with commercials too at this point, but we should recruit the best. We can train the best.

We also got to make sure we give them adequate housing. We can't—we obviously are never going to compete with the majors in pay, but we also know that most of these pilots are going to be married, and their spouses need to be—they need to like where they are staying, and they also need to know it is not costing them to be there.

With the 2 percent cut, I felt like that was kind of a slap across the face. General, I would appreciate it if you would pay attention to that. With that, I yield back. Thank you.

Senator HIRONO. Senator Shaheen.

Senator SHAHEEN. Well, thank you, Generals and Admiral, for being here and for your service to the country. I have a whole list of questions, but I would actually like to throw all of those out and go directly to Ms. Maurer's statement, because I was disappointed to hear your comment that there has been a decline in mission readiness, especially in the air and sea, and that is despite additional funding over the period since 2017.

I wonder if each of you could tell me if you agree with GAO's assessment, or if you have a different view. General George.

General GEORGE. Yes, Senator. Specific to the GAO report that did she mentioned in her opening statement, one was for us, mobilization and railcars. Yes, I agree with that. That is something that we are investing in, $10 million mainly for tanks and Bradley and heavy equipment, and then the other aspect of it was safety, and I agree with that as well.

Senator SHAHEEN. Admiral.

Admiral FRANCHETTI. I think from the ship and submarine in the sea domain, we are improving our readiness now, I think since 2019, and as we have been able to implement a lot of our performed plan and data analytics, and really focus on the maintenance and getting ships out of the shipyard on time, submarines out on time.

We have been able to decrease our days of maintenance delay, which will improve our ability to train. So again, we have a lot more work to do and we are grateful for the work that the GAO provides.

On the aviation, again, back in 2018, when we were a challenge to move up from 241 ready Super Hornets, we invested a lot of time and energy in this analytic process to get after the root causes and the drivers of lack of readiness.

We have been able to achieve 80 percent readiness, between 80 and 85 percent readiness for the Super Hornets, and now we are scaling that to the remainder of our type model series. So again, we have had some challenges, but I think we are moving in the right direction.

Senator SHAHEEN. Well, let me just zero in on that a little bit because one of the findings has to do with the shipyards and submarines.

It says from fiscal year 2014 to 2020, Navy submarines spent 9,563 more days in depot maintenance than expected. Now, as somebody who represents the Portsmouth Naval Shipyard, I really

appreciate the shipyard optimization plan and what that is doing for the shipyard.

They have had a very good record of getting ships out on time and under budget. But how do you approach that kind of delay as we are thinking about how we make sure our submarines are operational when they need to be?

Admiral FRANCHETTI. That was a very significant delay, and we are really focused, and this has really been the focus of me as the Vice Chief, as I have gone around to visit the different shipyards, to understand the challenges and also met with private industry to see where we can focus on that.

I think the three things that we found that have been impacting that, one is workforce development and project management fundamentals, production throughput. The second one is long lead time material, and that has really been a challenge, especially for *Virginia*-class submarines.

Then the third one is growth work, unplanned work that we are finding, and so, again, we now have developed a 15-year plan, a strategy to get after all of those things. We have also put in—requested in this budget $3.1 billion in *Virginia*-class parts to help us get veritable pools and get rid of challenges with obsolescence.

So, in the submarine world, I think we are, again, moving in the right direction.

Senator SHAHEEN. Thank you. General Smith.

General SMITH. Senator, the aviation portion of that report is correct. We are not where we need to be and have committed to be. In the last four or 5 years, we have increased marine aviation readiness by just over 10 percent.

So, we are moving in the right direction, but we are marines, so we are not going to be satisfied until we achieve the objective. We are doing that through a combination of ensuring that personnel, ranges, fuel, parts, aircraft are all available at the right time.

Because if any one of those elements of readiness is not there, you are not going to train and be ready. So that is a focus for us. It is the compilation of manpower, training ranges, and assets at the exact right time.

Senator SHAHEEN. General Allvin.

General ALLVIN. Yes, Senator, unfortunately for the Air Force, those are correct as well, and what is not good news, but is better news, so we are up to, in fiscal year 2023, this is in fiscal year 2023, we had eight aircraft that did meet the MC.

That is not nearly where we need to be, but eight better than two, and ours is a combination of a bit of a spiral we are trying to come out from, which is, as we have, 53 percent of our aviation assets are right now exceeding their expected lifecycle, average 29-year-old platform.

So, they break 25 percent more, they take 15 percent longer to fix, and because of that, they are longer times in depot, which means we can—we have a fixed a depot pipeline so we can put fewer through depot, so therefore it has that spiraling effect. Because they are finding new and interesting ways to break, it takes some of our best maintainers to be able to keep those.

As we are trying to transition to these more modernized platforms that is where some of our maintenance shortfalls come, so

not an excuse. It is a condition we need to work through. I think another one, the real good recommendations that they made that we are trying to action on right now is leaving these sustainment reviews for each of the systems that get after the individual pieces of the maintenance and supply issues.

We have completed several of those sustainment reviews right now. We are trying to develop useful mitigation plans, not just mitigation plans we can submit as a report and make it complete, but the things we can action on through things like condition-based maintenance plus and stockpiling of supplies and those sorts of things.

We are on a journey, and but again, the answer to the question is, these are accurate numbers.

Senator SHAHEEN. Madam Chair, can I ask General Thompson to also respond?

General THOMPSON. Senator, we agree with the GAO's assessment as well. Such an incredibly dynamic period addressing a newly contested domain. We don't really have the readiness metrics yet. We don't have the systems.

We don't have the training infrastructure. But I absolutely believe we have the plan that we are executing to. We had $390 million in this year's budget focused on that plan, and our request has another $340 million above that.

I agree with the assessment, but I believe we have the plan to get after the readiness needs of the Space Force.

Senator SHAHEEN. Well, thank you, and General Thompson, I think your admonition that on time budgeting and being able to count on a budget from Congress is really important to all of the work that you all need to do, so I hope that we can comply with your request. Thank you, Madam Chair.

Senator HIRONO. Senator Kelly.

Senator KELLY. Thank you, Madam Chair. I want to start with General Allvin and Ms. Maurer on the pilot retention issue in the Air Force. If I have time, I want to address this to the Admiral and General Smith as well.

I think we share this concern about pilot retention challenges in the Air Force and what this means for the future joint fight. I think the Air Force currently has a 10-year requirement after a pilot gets winged, but I want to get into some specifics on this.

What does the data say about when pilots are separating from service after their commitment? Is it—does it tend to be right after the 10-year commitment, or the folks tend to stay in for a little bit longer and then get out before they, let's say, complete 20 years of service?

Then what is like the root cause? What are they citing as reasons why they are leaving after a 10-year commitment to the Air Force?

General ALLVIN. Senator, thank you for that. So, the biggest decision point is after that 10-year commitment. It is not like it is a cliff after that, but that initial 10-year commitment is where the first decision point is.

I will talk in a second about the rationale why, and as we understand—when they approach that 10-year commitment from their pilot training time, as you know, there is that year to get trained

and maybe some time you have to wait to get to pilot training. So, you may be 11 or 12 years in.

What we had been doing in the past, and we have been approaching them at that 11 or 12 year point, and at that point as uniform service, you are making decisions two or 3 years before then. What we have done now is offer these incentives to them 3 years before the commitment is done.

Now, obviously, we are asking for a longer commitment, but at that time, it is helping them cement their future, see where their families are, and have that predictability.

Senator KELLY. The incentives, you mean the pilot bonus——

General ALLVIN. The pilot aviation incentives, but also, we are also offering non-monetary incentives. This goes to your point of why are they getting out? Why are they leaving?

We had an air crew engagement survey that happens every year, the one we just had in March, had three primary reasons. One of them was location stability. The second one was compensation, and the third one is resource initiatives to get after the additional duties because pilots like to fly.

The location stability, we are doing things now like trying to reduce the number of overseas deployments. Those with the reduction in Afghanistan and Iraq are sort of helping that naturally as a byproduct. We are looking at some of the second assignment in place opportunities. One of the advantages of technology is it allows us to be more interactive with the individuals in the assignment process.

Before, it needs the Air Force, we shape your career. Now we have talent marketplace where they can go out and at least provide some more input, have a little more agency in their future assignments. We are helping them with that, and then on the resourcing issues, we are looking at other opportunities to shed some of those additional duties.

On the compensation is the aviation bonus. Those are the three ways that we are addressing, but we are really interested to see, we just started this, to see what the feedback is on the engaging them earlier. Because they are making those decisions not the year of, but a couple of years.

Senator KELLY. Admiral, has the Navy done anything here with trying to provide some stability in one location for pilots? I know in my 25 years in the Navy, that was something that you would hear the Air Force would do but wasn't typically something the Marine—or the Navy did. I am pretty sure the marines probably did not as well. Are they—is either service doing that now?

Admiral FRANCHETTI. Yes. I think, just like the Air Force, we are working hard to retain people and look for some of those non-monetary incentives. Of course, the monetary ones are important.

Being able to award the bonuses and incentive pays at the right time to help them with their decision is one thing. Some of the other things that we are looking at really are, as you mentioned, family stability, very important. Some of the reasons cited for departing are high operational tempo, long deployment lengths.

Again, not enough flying time, because they do really like to fly. The other one is looking at potential alternative career paths and designating a professional flight instructor. Because some people

would like to do that, as opposed to moving on through some of the other career choices.

Senator KELLY. General.

General SMITH. Senator, along the same lines. We are, through our process called talent management. We are just trying to treat each individual marine as an individual. Some pilots want to fly a lot more. There are some who want a 3-year out because they have been flying for 8 years straight.

We are offering not just to pilots, but all marines, we will ask them, what would it take to keep you? And they say, I want to stay here at Myanmar for another 3 years, then we can get to yes. If it is, I want to stay here at Myanmar forever that is probably a no. But if you—if we can extend you. If we can give you 3 years out of the cockpit, you do a forward air controller tour that helps.

You know, so there is three marines at this table, and we all do it because we love being in the Marine Corps. That will only get you so far because we do have to compensate them, can't compete with airlines, but we have to give them a career path that matches what they need and what the Corps needs.

But we are doing stabilization in their geographic location of choice anywhere we can, because we have to retain those pilots, because they are a huge element of our lethality.

Senator KELLY. Some of our allies also will allow, and I think this what you alluded to as a in maybe an instructor pilot but allows somebody to be sort of a squadron pilot. They don't advance so much in their career, they stay in a squadron, and that helps in some retention. I don't think we have gone that far yet. Is that accurate?

General SMITH. Right.

Senator KELLY. Right. Thank you.

Senator HIRONO. Senator Duckworth.

Senator DUCKWORTH. Thank you. I am going to followup on Senator Kelly's questioning about retaining aviation flight crew. General George, the Army made headlines this week when Human Resources Command alerted hundreds of Active Duty aviation officers that their service commitments are about 3 years longer than previously thought due to an HR [human resources] error, and I actually am quoting the language.

General Allvin, last year, Congress gave the Air Force the ability to offer retention bonuses to pilots up to 3 years away from contract expiration, in addition to a base preference for future assignment location.

To date, the Air Force has not published its aviation retention bonus or base preference plan for eligible aviators for the current fiscal year, and we are—I mean, we are well into the second quarter.

Gentlemen, are these issues the result of slow staffing processes on behalf of your service? Are your human resource staff properly trained and equipped to administer these types of programs? What is going on? You have this in the Air Force, this resourcing and yet you are not using it. And how is it that we are telling people, by the way, you owe us 3 more years than you initially—we initially told you because of an HR error? What is going on?

General GEORGE. Senator, yes, there was an error that you read, that actually they should have known that they had, the branch ADSO or the additional service obligation that wasn't on there.

We are treating that, you know, going to every individual. For some it is not. It kind of gets back to the individual preference, hey I was planning on staying anyway. There are some that it is a challenge for, and our Human Resources Command CG [Commanding General], General Drew, also an aviator, is reaching out to every one of those directly.

Senator DUCKWORTH. But you are not answering my question. You are putting it back on the individual servicemember. What I asked you is what is going on with your H.R. training and your personnel that they are making these kinds of mistakes.

General GEORGE. Well, I would agree with you. We need to make sure that we don't have mistakes like that. But like I said, we have had a mistake. We did identify it and we are just trying to deal with it right——

Senator DUCKWORTH. What are you going to do to fix the problem—with your HR—?

General GEORGE.—directly to take care of——

Senator DUCKWORTH.—so that it doesn't happen again?

General GEORGE. We are addressing that as well. As far as how—what gets into how the service obligation. The other thing is we are bringing on and we had—I do think, our integrated personnel and pay system, you know, getting data.

We had a bunch of old systems that were kind of—had been kluged together, and we are working through that. I think that that will help us. But obviously, for all of us that have been in here, anything—you know, that something happens to your own pay or anything else, that has a big impact, and we realize that, and we are focused on it.

Senator DUCKWORTH. General Allvin, it is 6 months into the fiscal year, and you still haven't published your retention bonus and your base preference.

General ALLVIN. This is something I never like to hear it hearing, but I will tell you, first heard. I will get back—I was not aware that that was not being done. I just extolled it as a virtue of what we are doing, so, Senator, very soon I will find out what it is——

Senator DUCKWORTH. Okay. Thank you.

General ALLVIN.—and I will personally make sure that you have that, because that is certainly not—is certainly, things are credibility if you don't follow through on the things you are saying we are doing.

[The information referred to follows:]

General ALLVIN. The Aviation Bonus (AvB) Legacy was released on 6 June 2023. The Air Force is on track to release the Fiscal Year 2023 NDAA Rated Officer Retention Demonstration Program this summer using the new program's authorities. Identified pilots in the Air Force's most critical communities will be offered monetary incentives up to $50,000 per year and an assignment of preference to assist with ongoing retention efforts.

Senator DUCKWORTH. Yes. Thank you. I want to backtrack and talk about aviation safety. I do want to offer my condolences to the families, friends, and colleagues of those soldiers killed in last week's Apache crash in Alaska. As an aviator and a Member of this

Committee, I am following it closely and I have asked the Army to come back, once you have done all your investigations, to brief me.

This is the second-class A that has rocked the Army's aviation community in the last 2 months, and aviation units are currently on a stand down. Much needed. The Marine Corps, Navy, and Air Force all hosted safety stand down days in recent years after their own strings of mishaps.

Study after study points to common causal factors, inexperience in the training schoolhouses and in the operational cockpit, increasing workload on the flight line and in maintenance hangars, and a lack of timely access to spare aircraft parts.

General George, Admiral Franchetti, General Smith, General Allvin, how is your service working to address these factors to prevent future tragedies, and what can we do to help you?

General GEORGE. Senator, as you know, from being an aviator, it is something you have to constantly address. Before this, the previous 4 years had been the safest aviation for us in history. But, you obviously have to keep focused on it right now.

We are doing exactly what you said with the safety stand down. They were looking at everything out there, how we are—what are, you know, the crew mix, maintenance, TTPs [tactics, techniques, and procedures], and all the things that—the tactics that people are using.

We are studying that. That was part of the address by the Chief of Staff in the stand down, and we will obviously get the investigations. We have the safety center that is out there looking at both of those right now, and we will certainly followup with you.

Admiral FRANCHETTI. Beyond just aviation accidents, we have had other accidents and we have learned many things from. I would say, two things that we have done to really try to get after them. First, we elevated our safety center to a two-star safety command.

The safety center dealt primarily with individual units, and information wasn't shared across the broader community, and the safety command, now he assesses all of the oversight entities, and they do regional assessments as well as community assessments and provide that information.

We are already learning a lot from them. I think the other one is really going after the root causes through our get real, get better cultural renovation that we are focused on right now, is really identifying them.

If the root cause for many of these things is fatigue, we are really emphasizing using our human factors, engineers to understand what is happening, and then how do we better train our people to know what to look for, create better watch builds, and move forward from there.

General SMITH. Senator, the last part of your question, steady, predictable operations, and maintenance dollars for parts and flight hours is the best thing that can be done for flight pilot proficiency.

We do twice annual safety stand downs preemptively. We call them BITS, back in the saddle training. But also in that preemptive lane, we just had a V–22 have an in-flight emergency a few weeks ago at Cherry Point. The group commander said—and the

pilots landed it very safely. So rather than wait for something, they simulated that same emergency.

They stood the entire group down, a colonel level command, for 2 days and they made every single pilot go back through that scenario until they got that exactly right. Because we don't want to wait for an incident.

We always want to be proactive, and for us, I am the safety officer of the Marine Corps. Safety Division works for me. There is no one between me and the colonel who runs it. It is me, so I am responsible to you.

Senator DUCKWORTH. Thank you.

General ALLVIN. Similarly, for the Air Force, the last 2 years. So far in fiscal year 2023, the same as last year, 1.2 per 100,000 flying hours. We would like to get that obviously to zero. We have had a couple of very safe years.

But to your point, we—and to General George's point, we have got to be—even though you might have the safest on record, it only takes one or two, and suddenly it becomes the worst on record.

We have found over—our analysis shows that over the last 2 years, our incidents have been a product of material, as you mentioned, risk management, and noncompliance with guidance. So, we really, we have been attacking the material.

To General Smith's point, we want to make sure we have the right parts and availability. But the risk management and noncompliance, these are things we are finding those Venn diagrams, and our safety commander, she is brilliant in getting back and finding root causes, reeducating, and I think it is those human elements that we need to continue to focus on with all the environmentals that my colleagues here talked about.

Crew resource management, understanding the risk. We are also starting to better integrate our human performance wing to understand those things in fatigue that we can now hold ourselves better accountable for with the advent of technology. But those elements are the things that we are really focusing on now.

Senator DUCKWORTH. You have been very generous, Madam Chairman.

Senator HIRONO. Senator Blumenthal.

Senator BLUMENTHAL. Thanks, Madam Chair. I want to focus on a different aspect of readiness and personnel, which is recruitment, and in particular, the numbers, that I know are troubling you as they have troubled us, of the levels of recruitment and the failure to make many of the recruiting goals, which I think is troubling not only for the present, but also what it indicates for the future.

I note, particularly General George, the numbers on the Army that are provided here today, only 23 percent of Americans aged 17 to 24 are qualified to serve without a waiver, which I think is a pretty damning indictment of education, health, however you want to characterize it.

As you say, the problem is not just finding qualified recruits. Propensity to serve among young men and women is also the lowest in recent history at 9 percent. Only 21 percent of youth from Generation Z believes that Army culture is consistent with their values and beliefs, and 56 percent report that their impressions of

the Army is mostly negative in parentheses, are driven by non-Army media.

I don't know how we keep our military as the greatest in the world, and it is now. As a parent of two sons who have served, one in the Marine Corps, the other is a Navy SEAL, I don't know what we can do to change the culture, the propensity to serve, the readiness and physical, and mental and emotional and educational qualification.

I would like to know from the services, perhaps beginning with you, General George, are we strategizing this fundamental longer-range problem. I know that the Army wants to meet its immediate recruiting goals.

That is certainly on your mind. But what about the larger problems? Is there a strategy in the services for recruiting? We have been talking mostly about retention so far, I think.

General GEORGE. Yes, Senator. I mean, obviously, we talk about this all the time, and two aspects that you kind of talked about. I mean, what are some of the adjustments that we can make? But we are obviously, we are having a big challenge and we don't—we want to see this also as an opportunity to change how we go about doing things.

We have done some where it is like the future soldier prep course that we are doing to get people in to actually raise them. They go down and they are able then to meet the physical standards, they are able to pass the ASVAB [Armed Services Vocational Aptitude Battery] test and that is working.

I mean, greater than 95 percent that have gone there, going through that, and we are looking at how we select recruiters, and do we have recruiters in the right places? We are looking at JROTC [Junior Reserve Officer Training Corps] programs, we are looking at marketing.

Then, you know, we are just looking longer term at how we approach this. You know, we are at the 50-year mark of the All-Volunteer Force. What do we need to change? As I mentioned, I enlisted right out of high school and we have a lot of people in our service have done that.

It is a great way to advance, and we just got to—you know, we are pouring our heart into getting the message out, and I think everybody has got that and across all the services. We have a big part to play in that.

Senator BLUMENTHAL. Admiral.

Admiral FRANCHETTI. I would just add that we, too, are doing a lot of the things that the Army is doing with regards to having a Future Sailor prep course for physical fitness. We just started that, and then this fall we will be doing more on the academic side.

I think we are looking hard at our campaign, forged by the sea, and working hard for it to make it to where all of the young people will be able to get a better understanding of what the Navy is all about and really what they can learn and what they can have as a career in the Navy, whether it is through social media, whether it is through career fairs.

Making sure that we take the time to educate people who may not live near the Navy, so they understand what it is. We are kind of taking the approach of every sailor is a recruiter and giving

them opportunities to go back home, talk about it, and be part of our fleet weeks, and engage not only the youth but the influencers and their life coaches, schoolteachers, principals, and then, of course, their parents.

Senator BLUMENTHAL. General.

General SMITH. Senator, as you know, you don't join the Marine Corps, you become a marine, and that is what we will stay with. We value our recruiters heavily. When our recruiters finish a successful 3-year recruiting tour, they select their duty station, or they are sent to one of our service schools.

My own son is a recruiter right now. I was a recruiter. Most of our senior leaders were either on the recruiting side or the drill field side, Fleet Marine Force specific, all recruiters. The key for us is that professional recruiting force and incentivizing them to do great work.

For us, those recruiters, it is a big reward in that the bulk of our meritorious promotions go to the recruiting force because we believe it is so important, and the final thing that I think is the secret sauce for us, the Commanding General of Marine Corps Recruit Depot, San Diego, and then recruiting Depot Parris Island dual hat as the Commanding Generals of the Eastern and Western recruiting region.

They have to both find and train the individuals, so, you better find good ones and you better train them right, because the same General is responsible for both, and we just value the recruiting force, and we stay on it. We made it a mission last year. We will make it this year, sir.

General ALLVIN. I know we are over, but I will——

Senator BLUMENTHAL. General, I am over time, but——

General ALLVIN. Thank you, Chair. Because I think this is very important. By the time it gets down to this end of the table, there may be fewer things just because we have lunches together—we understand this is not just a service problem. We have many meetings together. We look across the table, so, I am stealing things from what Eric is doing. This idea of—for us as the Air Force, last year, we barely made, and this year it looks like we will not.

This is—we have a wakeup call. We are looking at everything. Why do we have this particular restriction in place? Why—and sometimes it was just because we could before and because we were able to make it, and that is part of it.

But, Senator, I want to talk about your larger point, which is all these things are making it harder on the outside, and we are trying to figure out that as a group of senior leaders, and I think one of them is this, that there is a cacophony of narratives out there that we are competing with.

Again, not an excuse. It is just a fact. There are so many different media that the youth of America can get insights of and get their impressions of and so we need to be both amplified and unified in the way that we describe the value of service. That this is not something that puts your life on hold. It is something that accelerates your life.

So, there is a combined thing that we need to do to have this awareness because there is a lack of familiarity with the military service. Those are some of the things that we have been talking

about as we look across the services do that, in addition to what we are each doing at individual services.

General THOMPSON. Senator, just briefly, if I can, since our challenge is a lot different than everyone else, our numbers are relatively small. We can't be in every hometown and recruiting station, and we don't need to be. We are looking a lot at new approaches to recruiting, targeting regions, targeting specialties.

When we look at that and the use of social media and some of the things, there are perhaps things that we can learn and trailblaze for the rest of the force that may help them in future recruiting opportunities as well.

Senator BLUMENTHAL. Thank you all.

Senator HIRONO. Thank you. We will start a second round of questioning. I am glad that you all get together and learn from each other and share best practices as applicable, and as long as we are on the subject of how important recruiting and retention issues are, my impression is that the Air Force and the Space Force have fewer recruiting and retention challenges. Is that right?

Although, Admiral Allvin, you said that you are currently facing some recruitment issues. But am I—do have the accurate impression that the two of you face fewer of these kinds of challenges than the other services? And if so, why?

Senator HIRONO. Chair, I will try and then you can go. But I think the Space Force is different because they do have a lot of folks wanting to come in, and——

Senator HIRONO. Yes, it is kind of a——

General ALLVIN. But ours is——

Senator HIRONO.—snazzy thing, I guess.

General ALLVIN. Ours is a disturbing trend because we have made it all the time. This year, we are actually seeing the things that the Army and the Department of Navy—the Navy has dealt with for a while, so that is why I want to learn those lessons earlier. Overall, we will be closer to meeting our numbers than perhaps some of the other services.

Senator HIRONO. What do you think is causing this trend? All of the other kinds of opportunities that a young person could have them besides joining the Air Force?

General ALLVIN. I think part of it is that we, because we are always making our numbers before, we might have maybe underpopulated our recruiting force, something I am learning from my fellow—from my marine here that says, the value of the recruiting force, the individual face to face, that is how they are making their numbers.

The idea that we had some standards—no, not really standards, there were restrictions that we had that were tighter than the DOD standards. Now we are finding if we loosen those and we stay within the DOD standards, we are allowing more to be able to come through our door.

We are like just, I said, we are looking at everything we had done before that was maybe unnecessarily restricted, and then we believe we are also—there is—the chickens are coming home to roost with respect to the propensity to serve, and we are going to have to counter that as well in the Air Force.

Senator HIRONO. Yes, and one of the trends being that there are so few people who even qualify, and even fewer still who are willing. This is for the Army and Navy in particular. How important are the Junior ROTC programs to your recruitment efforts?

General GEORGE. I will be real quick, Chair Hirono. We have about 1,700 JROTC, and what we see is whether or not people are actually in JROTC or not. If they have that exposure, I think that is where it is helping us the most.

You know, we are at like 44 percent of the folks who have a JROTC in their high school are more likely to serve. So that is where I think it helps us, and we are looking at how we can expand some of those. We are in the process of doing that now.

[The information referred to follows:]

General George would like to clarify this statement to read, "44 percent of recruits come from a high school with a JROTC program, even if they do not participate."

Senator HIRONO. What about Navy?

Admiral FRANCHETTI. JROTC is very helpful for us, as is the Sea Cadet Program. So again, the more opportunities we have to expose people to what the Navy does and what it can do for them, I think is a really great opportunity.

Senator HIRONO. How much of an inducement are the educational opportunities that you all provide to people who join, in terms of particularly, I suppose, of recruiting and retention? Anyone want to respond? General Allvin.

General ALLVIN. Yes, Chair Hirono. I will mention one thing that we have reinstituted this year that has been very successful and is actually our enlisted college loan repayment program.

These are individuals who are out of high school, maybe thought right then they weren't—that maybe military service wasn't for them, have had a couple of years of college and have built up some debt, and now we are relooking that.

Some of our incentives are just that way because not only are we offering the ability to repay their college education, but they can continue their education through our community college of the Air Force and other educational opportunities.

We are seeing some of that cohort coming in may be a boost as well. We do believe that is an attractive feature.

Senator HIRONO. It is annoying how expensive college is. Do the other services also provide college repayment programs?

General GEORGE. We have similar programs, Senator.

Senator HIRONO. By the way, do you help with the cost of graduate education, i.e. becoming lawyers? You need your JAG [Judge Advocate General]. Do you pay for someone to go to law school?

General SMITH. Chairman, I can tell you we do. We have a program called, Funded Law Education Program. Those individuals that we select from a very competitive board go to law school. We pay. We also have PhD programs for select individuals who fill things at the Marine Corps.

Senator HIRONO. How long have you had that? Because I have a JAG person on my staff who didn't get her law school paid for.

General SMITH. We have a couple of programs. We have a funded, which is pretty small because it is expensive, but we also have excess leave law program. We have several——

Senator HIRONO. I think that it seems to me that the educational opportunities that you provide could be a big incentive for people to consider joining.

I just want to get to one thing. In recent years, storm damage has had a major impact on DOD infrastructure in places such as Tyndall Air Force Base, Camp Lejeune, and the Army's Military Ocean Terminals, Sunny Point.

What plans do your services have to improve the resilience of your facilities in the face of extreme weather? What kind of readiness impacts have you observed when our facilities are not resilient? I would like the GAO, Ms. Maurer, to chime in also. So, let's do this really quickly.

General GEORGE. Chair Hirono, yes, we are looking at that. Some of that is when anything that we are going to construct new is make sure it is at the right standards.

The other things that we are looking at is actually for power, having ways that we can store power so that we have resiliency. Then the other aspect I would say would be cyber and strengthening yourself there.

Senator HIRONO. Admiral.

Admiral FRANCHETTI. Similarly, we look at that. We are especially concerned about any sea level rise as we are building our new piers. Making sure that they are above the 100-year floodplain, as well as our dry-dock down in Norfolk Naval Shipyard. Building a floodwall there again to make sure that it is protected from any sea level rise.

Senator HIRONO. General Smith.

General SMITH. Senator, those bases are our power projection platforms, so they are vital to us. Camp Lejeune, for example, rebuilding after that significant hurricane. It is about rebuilding the building such that they are ready to withstand a hurricane.

We have bases such as Marine Corps Recruit Depot, Parris Island, who export power. We have our own micro grid, and we are actually off the grid at Albany, our logistics base, and we pass power back out into the communities by being off base. That is a combat multiplier lethality.

For us, it is less about green than it is about being able to project power from those platforms when we are cutoff from outside power.

General ALLVIN. Chair Hirono, the same programs as the other services do. I would say in addition, we also have our instituting energy resilience exercises where we make sure we—what happens when the base goes dark to make sure we have a primary alternate contingency emergency, so we can operate in those energy degraded.

But to the extent of building codes in hurricane zones and flood plains, we do the very same thing with our——

Senator HIRONO. Yes. Maybe Space Force doesn't have quite those kinds of issues.

General THOMPSON. We—no, Madam Chair, we have exactly the same issues. The one additional factor is since it primarily our missions are employed in place, we operate every day in our satellite command control centers.

We also create redundancy in backup, such that when you have weather problems in one area, you can transfer the mission to

other areas and continue in that regard. So, we do all the things the other services have in terms of power and building codes, but then we also build in redundant control centers to be able to continue to operate.

Senator HIRONO. Ms. Maurer.

Ms. MAURER. Yes, it is great to hear all the actions being taken by the services to address the issue of climate change vulnerability. It affects all of the services. Some of our work has identified some of the mammoth environmental—future environmental liabilities facing the Department.

I think one of my colleagues testified recently on that, and said that that price tag is about $91 billion, and that is on top of $137 billion in deferred maintenance across the DOD facility enterprise.

This is an infrastructure issue in part that sort of mirrors some of the broader infrastructure challenges facing the country as a whole.

Senator HIRONO. Thank you. Senator Sullivan.

Senator SULLIVAN. Thank you, Madam Chair. I am going to continue my line of questioning, Admiral, with the Navy's support for the Marine Corps. The Navy's forward deployed naval force in Sasebo, Japan was cut from five amphibs to four. The Navy wants to cut it again to three, my understanding is.

With a 32 percent readiness rate, that really means one amphib ship will be ready for deployment out of Sasebo in the INDOPACOM [United States Indo-Pacific Command] theater. Again, to me, this is a real problem. Is that the current plan for the Navy ought to Sasebo?

Then, General Smith, I would like to followup with a question to you. How effective is the 31st MEU with one ship? It is really not even a MEU or an ARG [Amphibious Ready Group] at that point, is it? But why don't we begin with you, Admiral. Is that the plan?

Admiral FRANCHETTI. We currently have five amphibious ships there, and we are currently reviewing our strategic laydown plan. Once that is finally approved, we will be happy to come back and brief you on that.

Senator SULLIVAN. So, is that going to three ships, you believe?

Admiral FRANCHETTI. The five ships.

Senator SULLIVAN. Five to three. That is what I am hearing. Is that what you are contemplating?

Admiral FRANCHETTI. The strategic laydown review is still ongoing. Has not been briefed to the Secretary yet, so it would be premature for me to say what those——

Senator SULLIVAN. Okay. General, assume that the Navy goes to, from five to three amphibs, 32 percent readiness rate means essentially one amphib. How effective is the 31st MEU—a lot of articles in the last 48 hours on how ineffective the 31st MEU is because it has no ships. So, one ship for the 31st MEU. Is that even a MEU? What is that?

General SMITH. Sir——

Senator HIRONO. Do you mind if—I need to enable General Thompson, who has a hard stop, to enable you to go and testify at another committee. Thank you very much——

Senator SULLIVAN. Thanks, General.

Senator HIRONO.—for being here.

General THOMPSON. Madam Chair, Ranking Member Sullivan, thank you so much. Will certainly take other questions for the record.

Senator SULLIVAN. Yes, thanks.

General SMITH. Senator, anything less than three ships is not an amphibious ready group or MEU. It is an amphibious task force. When you do not have a full three ships, depending on which ship you don't have, if you didn't have the big deck, for example, you lose 10 F–35s, you lose 4 C–53s, et cetera.

So, you have to have three, but it is not just for deployment. You have to have those ships to train. The first time that you are sailing away into harm's way, because crises happen when you don't expect them and you don't want them to happen, that is not the time for a young first lieutenant, V–22 pilot, to do their first deck landing qual.

Or for a young lance corporal driving an amphib combat vehicle into a wet well in 3-foot seas to do it—so you need them for training safety, but you have to have them for combat readiness. So, three ships, all stop.

Senator SULLIVAN. I am assuming the Marine Corps' recommendation to Navy would be, as they are doing their strategic laydown, don't go from five to three amphibs at the forward naval force in Sasebo.

General SMITH. Senator, what we would say is provide three ships for the ARG. We wouldn't say how to do it, but provide three ships for the ARG.

Senator SULLIVAN. To train and deploy.

General SMITH. To train and to deploy, and I am mindful I have got the former 31st MEU Commander sitting right behind me. He is the mean looking one. He just finished that deployment. He and I talk about this all the time.

Senator SULLIVAN. Let me go on to the point I raised in my opening statement. The Marine Corps requirement is for a 35 landing ship medium naval vessels for Force Design and the Marine Littoral Regiments (MLR).

Right now, it looks like the Navy budget through fiscal year 2028 will be for six. So, again, a combination of Admiral Franchetti and General Smith, why is the Navy not even in the ballpark on what the Marine Littoral Regiments need.

This goes again to my broader point. A lot of Marine Generals are saying Force Design is meant to support the Navy. I hear that. Okay. Naval forces. Okay. We are going to shoot Chinese warships out of the ocean. Okay. But the Navy isn't coming back on, and we are going to make Force Design successful.

To my very obvious reading, there is not much support at all. Is the Navy planning on trying to get to 35 LSMs at all? General Smith, is a Marine littoral regiment a viable fighting force without LSMs, because right now you are not going to get many. You are not going to get hardly any at all, and I will start with you, Admiral. You plan on going about five or six?

Admiral FRANCHETTI. So, the Navy is continuing to work with the Marine Corps to identify the requirements, and we will continue to work to support them throughout our shipbuilding plan.

As far as the readiness goes, we are fully committed to supporting the Marine Corps training requirements.

We have met all of our deployment requirements. In the particular case of 31st MEU, we were able to surge a different ship, the Ashland, to support them after an emergent repair to the Rushmore. So again, we are fully committed to supporting the Marine Corps training requirements.

Senator SULLIVAN. I am not talking about just the training. Force Design, again, lays out the need for 35 LSMs. Is that even remotely in the Navy's 30-year shipbuilding plan?

Admiral FRANCHETTI. Again, we continue to work with the Marine Corps to define that requirement and put that into our budget as it goes forward.

Senator SULLIVAN. General, is an MLR a viable fighting force without any means of delivering it?

General SMITH. Senator, it has to have——

Senator SULLIVAN. Be viable with five or six LSMs?

General SMITH. Well, the—our studies show that maximized one MLR requires nine landing ship mediums. So, nine for one MLR to absolutely maximize it. The organic mobility for the MLR, Marine littoral, also comes from our C–130's.

As you noted, sir, we added a second squadron to the Pacific. So, we need all of our organic mobility, L-class, LSMs, et cetera, all the way down, and the one thing I would want to note, sir, is that the Force Design issue was for the Joint Force. It certainly supports the naval force, but it supports the Joint Force.

For Admiral Franchetti's point, what we want is—we just—neither of us want a gap in time. So, when one ship is trading for another one, any day you lose at sea is a day lost. That is what no one wants.

Senator SULLIVAN. Let me ask one final question to you, General Smith. I want you to respond to some of the criticism. I mentioned in my opening statement that the MAGTF [Marine Air-Ground Task Force] ability to kick in the door anywhere in the world and sustain itself for weeks in heavy combat to enable the Marine Corps to continue to be the Nation's 911 force is being somehow degraded or de-emphasized by Force Design.

I know you don't agree with that. It is a criticism that is out there from some very respectable marines. What is your argument against that? Doesn't that argument have some weight when we are looking, again no offense, Admiral, at a Navy that is not supporting you guys, at a Navy that won't get the amphibs that you need, a Navy that won't get you the LSMs that you need?

I mean, the Marine Corps does become less effective as the number of amphibs decreases. That is a fact. What is your response to those kind of questions that I am raising, that others have raised, including the amphib component?

General SMITH. Thanks, Senator. The Marine Corps is ready. So, sir, we have and have retained the same——

Senator SULLIVAN. The critics are saying, well, you just—and I listed some of it. You just divested an enormous amount of combat power. I said, I used a line like that. The Commandant didn't agree it was enormous. I think it is pretty enormous, but maybe not enor-

mous, let's just say significant. I don't think anyone would disagree with the numbers I read are significant.

General SMITH. So, let me focus the part on expeditionary force and readiness, and kicking in the door, as you said, because I agree, both the——

Senator SULLIVAN. And sustainability——

General SMITH. And sustainability. The 82d and 114th Congress both gave a sense of the Congress that we should be most ready when—a position of the Congress, pardon me, most ready when the Nation is least ready.

We firmly believe that. So, we have seven new headquarters. We have the infantry battalions. We have the fixed wing squadrons, the combat engineer platoons, reconnaissance platoons, HIMARS [High Mobility Artillery Rocket System] batteries, artillery batteries.

We have those to deploy, heel to toe Marine Expeditionary Force, but what we do not have is the amphibious ships. So, when you are talking global crisis response kicking in the door, you have to get there.

Those amphibs are absolutely vital because we have the forces that are ready to go to the pier, but they have to have the amphibious shipping to deploy. That is what makes us ready, those combinations. But the marines are, in fact, ready to go, sir.

Senator SULLIVAN. Madam Chair, can I ask one more question? I didn't want General George to be so lonely over there in the corner, so——

Senator HIRONO. Only if he can respond in less than a minute.

Senator SULLIVAN. General, two initiatives, one that is taking place in Alaska that I think is going well is a stand up of the 11th Airborne Division, and your work on multi-domain task force. Said in some ways, I don't know who is mimicking who, but in some ways, it does look like Marine Corps Force Design and littoral regiments.

Your multi-domain task force, how are both of those initiatives going? I talked to General McConville. I know you are looking at a third multi-domain task force for deployment. We think Alaska is a very strategically important place that you might want to look at those there. Can you just give the Committee an update on those two initiatives that are important for our Nation's defense?

General GEORGE. Senator, I will start with the 11th Airborne, and I know you—we just had a very big Arctic exercise. I mean, really what we are focused on is reestablishing ourselves as Arctic experts up there.

I think, General Eifler and that whole team up there is doing great things. They just did a Joint Force entry up there, had 8,000 people. We have given them the new Arctic equipment and they have got CAT Ds. So very good training up there, and then, you know, working some of that with our partners.

Senator SULLIVAN. Is that still the number one requested unit in the U.S. Army?

General GEORGE. It is up there as far as places that people want to go. Definitely, we saw a definite uptick on that up there. So, the other thing is on the multi-domain task force, and we stood up—

I stood up the first one several years ago as the First Corps commander.

Very capable units that are exercising right now across the Pacific. We have the other one that is out in Europe supporting EUCOM [United States European Command] and is very active out there. We have one temporarily stationed right now down in Hawaii.

There is two more that we are actually are part of our Army structure that is coming up, that we are standing up with those capabilities. We haven't made any final decisions. Those are forthcoming on where those assets and those capabilities would go.

Senator SULLIVAN. Thank you, Madam Chair.

Senator HIRONO. I thank each of you for your time today, and we will continue to dialog with you, and I also want to thank you, Ms. Maurer. This hearing is adjourned.

[Whereupon, at 4:53 p.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

## QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

### AMPHIBIOUS SHIP READINESS IMPACTS

1. Senator HIRONO. General Smith, amphibious ship readiness is well below stated goals at a time when the Office of the Secretary of Defense seems intend to discontinue landing platform dock (LPD) production. I am concerned that we are losing the ability to conduct amphibious operations. For example, the 31st Marine Expeditionary Unit could not get underway for training in the Pacific earlier this year, we could not provide the best option to help earthquake victims in Turkey, and we did not have marines on ships to respond to the escalating crisis in Sudan. General Smith, what is the geo-political impact when marines are unable to get underway for training with our allies, disaster relief, or even contingency operations?

General SMITH. The geopolitical impact is significant. When we are present at the time of need it helps build and expand relationships with our allies and partners. When there are gaps in global Amphibious Ready Group/ Marine Expeditionary Units (ARG/MEU) coverage, the Nation risks not having the right assets capable of getting to the crisis in time to matter. If the U.S. is not able to perform this role, our adversaries would likely step in with their forces and their messaging. Marines deployed forward as sea-based expeditionary forces, and regularly on amphibious warfare ships, allow us to train with our partners in peace and support them when they need help. In recent crises, like the earthquake in Turkey and the non-combatant evacuation (NEO) in Sudan, the Marine Corps had the ready-trained force with the right equipment; however, the readiness of amphibious shipping was not available to provide options for our COCOMs.

2. Senator HIRONO. Admiral Franchetti, what does the Navy need to meet the Marine Corps' requirements for amphibious ships that are able to get underway?

Admiral FRANCHETTI. Readiness continues to be one of the Navy's top priorities. Accordingly, the Navy continues to emphasize its focus on achieving measurable performance improvements across the enterprise, especially with respect to surface vessel maintenance. In the fiscal year 2024 budget, Navy has requested to fund ship maintenance to 100 percent, including amphibious ships. Funding this request in fiscal year 2024 with on-time appropriations would help ensure maximum benefit for this investment.

### MAINTENANCE AND SUSTAINMENT

3. Senator HIRONO. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, the Government Accountability Office (GAO) reported this year that 10 classes of ships faced persistent and worsening sustainment challenges over the last decade. Specifically, the number of maintenance cannibalizations, casualty reports, and days of maintenance delay have each increased, while steaming hours have decreased. What are your Services' maintenance and sustainment challenges and how are your efforts to address them proceeding?

General GEORGE. Watercraft fleet readiness is currently one of the Army's biggest maintenance and sustainment priorities. Diminished fleet readiness is a result of four major drivers, including On-Condition Cyclic Maintenance; the Service Life Extension Program performed at the depot level; below-depot level repair; and field level maintenance and repair.

To mitigate the shortfalls of the current fleet, the Army is establishing an Army Watercraft Enterprise governance structure to serve as a formal mechanism for oversight and synchronization of fleet maintenance and readiness management. The Army anticipates increasing prioritization for depot-level maintenance funding across the Future Year Defense Program.

In addition to Watercraft readiness, the Army has prioritized Army Pre-positioned Stock (APS) program to set the theater, which yielded a decisive advantage in Europe, as well as in the Pacific supporting the Operations Pathways series of exercises over the last year. The Fiscal Year 2024 President's Budget request includes over $900 million for the Army's APS and strategic mobility efforts, which will help us maintain essential readiness for sustainment on the battlefield in today's conflicts. The Army is also focused on modernizing our Organic Industrial Base (OIB) facilities with our OIB Modernization Implementation plan, and the Army is planning the Enterprise Business System Convergence effort that will modernize our business systems to generate the data the Army needs to support large-scale combat operations.

Admiral FRANCHETTI. The Navy is focused on addressing maintenance and sustainment challenges in its surface ship fleet as discussed in the GAO report, and the results of these efforts are being realized in decreasing Days of Maintenance Delay (DOMD) across the fleet.

There are several factors that impact the ability to get a ship out of an availability on time, and the Navy is making targeted efforts and leveraging data analytics to target key areas to improve timeliness and continue to drive down DoMD. Performance to Plan (P2P) Surface, Naval Sustainment System—Supply, and CNO's NAVPLAN Implementation Framework are senior leader forums that track key metrics, enabling regular leadership engagement and barrier removal when needed.

Improvement of surface ship depot maintenance requires sufficient resourcing and encouragement of private sector investments through clearly articulated requirements and forecasted workload. To support these efforts, the Navy publicly posts workload forecasts for each port quarterly that includes workload projections through 3 years out, allowing industry to understand current and future planned work in the port. The Navy is also working to further help enable a healthy industrial base and workforce by awarding contracts 120 days prior to availability start, reducing workload variability, and increasing government project team health to enable robust partnership with industry on the waterfront.

A healthy ship repair industrial base and workforce will help improve Navy maintenance and sustainment outcomes and will support improved operational availability across the surface fleet. The Navy is reviewing multiple opportunities to also address private repair shipyard aging infrastructure, facilities, and equipment, and the Navy looks forward to working with Congress as these plans and programs mature.

General SMITH. Readiness and sustainment challenges presented by the Amphibious Warfare Ship fleet continue to impact the Marine Corps in a multitude of ways. Over the past two calendar years there have been 82 incidents in which the fleet's readiness impacted the Marine Corps' training and operations. To offset emergent or extended maintenance availabilities of our Amphibs, we prioritize our upcoming Marine Expeditionary Unit deployers, with a particular emphasis on the most complex shipboard operations such as flight deck and well deck operations. Despite lacking available ships to routinely train on, the Marine Corps continues to ensure our deployers are certified for the full range of military operations by executing an average of 48–58 training days at sea prior to deployment.

General ALLVIN. The Department of the Air Force (DAF) continues to seek opportunities to divest capabilities that are not consistent with pacing challenges and focus our limited resources on the key capabilities required to execute the National Defense Strategy (NDS). Many platforms in the inventory have exceeded their intended service lives or require outsized resourcing support unjustified by their impacts to capabilities against peer adversaries. Additionally, due to Diminishing Manufacturing Sources and Material Shortages (DMSMS), many important aircraft parts are no longer produced and have no replacement part that will fit the aircraft without major modification, so the AF is forced to manually manufacture parts, which is expensive, time-consuming, and short-lived.

Moving away from these legacy platforms redirects manpower to our newest aircraft/platforms. Time is not on our side as the pacing challenge continues to move

forward with an aggressive modernization program. Each day the U.S. chooses not to invest in the capabilities needed for the future gives our adversaries a competitive advantage and increases risks of failure in conflict for the United States.

The DAF prioritizes finite resources to sustain current force structure relevant to the future fight, in parallel with modernizing force structure. In fiscal year 2024, the DAF is investing in threat-informed warfighting capabilities against China with an overall objective of balancing modernization, recapitalization, and readiness in support of the NDS.

To address sustainment challenges, including supply supportability (obsolescence and low-demand parts) and aging aircraft structure concerns, the DAF is leveraging initiatives and emerging technologies like Condition Based Maintenance Plus (CBM+) and digital engineering.

CBM+ turns costly unscheduled maintenance into more predictable planned activities—saving time, increasing equipment availability, and improving mission readiness. Digital Engineering (i.e., digital blueprint or digital twin) allows persistent insight into the supplier base, increasing supply chain resiliency and allowing the use of advanced manufacturing techniques to source hard-to-find parts. OSD's Rapid Sustainment Improvement Process (RSIP) and the Air Force Rapid Sustainment Office (RSO) are leveraging digital tools developed in new weapon systems and applying them to solve aging fleet issues.

Based on the fiscal year 2024 budget request, the DAF does not anticipate significant degradation to aircraft availability and mission capable rates.

General THOMPSON. Space Force maintenance and sustainment challenges are rapidly evolving, and the largest challenge is keeping up with rapidly changing technological advancements. Here, the Space community experiences a variety of challenges in sustaining legacy ground systems, which are heavily relied upon across Combatant Commands and a wide user base. These challenges include Diminishing Manufacturing Sources and Material Shortages (DMSMS) and the inability to procure Commercial-Off-The-Shelf (COTS) parts in a timely manner to ensure seamless sustainment and operations of systems. Space Force does not have organic depot capability and as a result, heavily leverages and relies upon our commercial partners and Air Force depots to ensure continuity of operations through sustainment. Often, reverse engineering efforts are employed and though costly, these efforts to buy-down DMSMS risks are essential.

Cyber security and hardening of systems present an array of challenges as well when integrating new technology and software with legacy systems and platforms. Cyber requirements often place cost and other resource constraints on the sustainment community that take time to implement in a rapidly evolving environment. Additionally, ensuring supply chains are hardened and resilient poses challenges. Ensuring that the numerous suppliers and vendors who enable space capability are trusted and secure is a resource-intensive task.

Actions Space Force takes to mitigate these risks and challenges include: working with organic Air Force depots and commercial vendors to identify viable supply support initiatives regarding DMSMS and legacy system concerns, as well as delving into emerging technologies like digital engineering and predictive analysis for maintenance, technologies that are very similar to Condition Based Maintenance Plus (CBM+). Furthermore, Space Force is working to implement a service-wide maintenance scheduling and planning tool through use of the Basing & Logistics Analytics Data Environment (BLADE) platform, with the goal of enabling a high-level Space Enterprise maintenance deconfliction tool that will be used to ensure operations and maintenance are aligned to provide both optimal warfighting capability and senior-leader visibility.

4. Senator HIRONO. Admiral Franchetti, specifically, what is the Navy doing to address the negative trends in ship readiness addressed in the GAO report mentioned above, and how is the Navy prioritizing funding for the sustainment of its ships?

Admiral FRANCHETTI. Readiness generation continues to be a top Navy priority as demonstrated by the Administration's request of $14 billion in funding for fiscal year 2024 ship maintenance. This request represents a $1.9 billion increase over last year's request for ship maintenance with an additional $330 million requested for spares. Over the last several years, the Navy has used data analysis from the Navy's Perform to Plan (P2P) initiative to identify key areas as having substantial leverage for reducing Days of Maintenance Delay (DOMD). These maintenance planning and execution improvement initiatives are:

- Reducing workload variability to enable stable and predictable workload for our industry partners.

- Awarding contracts 120 days before the start of a maintenance availability (A–120). A–120 supports having Long Lead time Material on time, developing effective integrated production schedules, and contracting for services that improve on-time completion of ship availabilities.
- Executing Total Ship Readiness Assessments to enhance the understanding of the material condition of each ship prior to availability starts, resulting in less unplanned growth work during the availability.
- Expanding Directed Maintenance Strategies for periodic and recurrent work to proactively address expected sustainment issues.
- Standardizing work practices to achieve greater learning and improve cycle times.
- Managing Integrated Master Schedules to better identify an availability's critical path through a time-based schedule that is integrated, networked, and details tasks necessary to ensure successful program/contract execution.
- Executing Project Team (PT) Health initiatives that help identify the key attributes and skill sets required of each PT member based on the complexity of the work package for each availability.

The Navy is focused on continued success through the use of data and analytics. The aforementioned focus areas are helping improve surface ship readiness trends. From 2019 to 2022, private shipyard DOMD for CNO availabilities decreased by 39 percent. However, improving private shipyard performance remains a challenge and the Navy is committed, through the use of P2P approaches, to drive maintenance delays down to the only acceptable number—zero.

TRAINING ACCIDENTS

5. Senator HIRONO. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, training accidents continue to be a challenge for each Service and has recently led to tragic loss of life as a result of two Army helicopter crashes. Recent GAO reports have pointed to issues related to accident data collection, safety and risk management processes, and training. What causes for training accidents have you observed, and how is your service addressing those causes?

General GEORGE. The safety of Army personnel is our top priority. On April 28th, in response to the recent aviation training accidents, the Secretary of the Army ordered an aviation safety stand-down. During the stand-down, Army aviation units focused on risk management and training protocols. Our objective is to ensure Army pilots, crews, and supporting organizations have the knowledge, training, and awareness to accomplish challenging tasks and return safely.

Despite systems in place to reduce risk, military aviation remains inherently dangerous. Anytime the Army observes an increase of accidents, the Army assess accident trends and quickly institute measures to mitigate contributing factors. Recent incidents are still under investigation, so the Army is not able to provide the cause of those incidents at this time. Over the past 24 months, however, the Army implemented 24 recommendations from aviation accident investigation findings to include: sharing annual sustainment training vignettes; changing the Aircrew Training Manual to standardize formatting, terminology, and references across all airframes; publishing training support packages for hoist training and the UH–72 control collar; and revising the Aviation Branch Standard Operating Procedures

Admiral FRANCHETTI. Most mishaps, including training mishaps, are not caused by a singular factor. Mishaps are usually the product of a number of factors that, when combined, result in an adverse outcome. The Navy stood up the 4-star led Learning to Action Board and an independent 2-star Naval Safety Command that reports to the Chief of Naval Operations to identify and correct issues contributing to those factors to break the mishap chain and prevent mishaps. In broad terms, most Navy mishaps are caused by procedural compliance violations, unidentified hazards, complacency, and not performing as trained. The Navy has taken action through various assessment entities to identify areas of improvement and assess the effectiveness of prior corrective actions. Leadership is charged with implementing effective action to address these performance issues to close the gap between our best and worst performers. The Navy has emphasized the criticality of becoming a learning organization that adopts lessons learned from past events to effectively prevent recurrence.

General SMITH. The USMC has made great strides in improving data collection, safety, and risk management processes and training.

The new safety information management and reporting software, Risk Management Information (RMI) has increased the speed, responsiveness, and transparency

of all our tactical and installation safety reporting. Ground, installation, and aviation commanders can now quickly and simply search mishaps for lessons learned, or to analyze areas of risk in order to mitigate them properly.

USMC safety posture rests on a strong and adaptable Safety Management System, codified in MCO 5100.29C. Broken into Volumes 1–9, each volume focuses on a different aspect of safety to include risk management, aviation safety, reporting etc. This process allows for smooth revision and continuous agile improvement of policy.

*Aviation Safety*

In the past two fiscal years the USMC has had 13 Class A aviation mishaps. Class A mishaps are major aviation mishaps incurring over $2.5 million in damage to property or resulted in the death or permanent total disability of a servicemember.

Of those mishaps:

Two mishaps were fatal with the loss of 9 total servicemembers.
MV–22, 18 March 2022, four fatalities, aircraft destroyed
MV–22, 8 June 2022, five fatalities, aircraft destroyed

Two mishaps resulted from the ingestion of Foreign Object Debris (FOD)
F–35C, 24 March 2021, aircraft damaged
F–35B, 16 May 2023, aircraft damaged

One mishap resulted from taxing into another aircraft.
CH–53E, 16 February 2022, two aircraft damaged

One mishap resulted from the actuation of hangar fire suppression system.
AV–8B, 6 January 2023, multiple aircraft and equipment damaged

Seven Mishaps resulted from a system failure, and / or an inflight fire.
AH–1Z, 6 January 2022, Aircraft Damaged
F–35B, 27 January 2022, Aircraft Damaged
F/A–18D, 3 March 2022, Aircraft Damaged
CH–53E, 21 March 2022, aircraft damaged
CH–53E, 25 August 2022, aircraft damaged
MV–22B, 14 October 2022, aircraft damaged
CH–53E, 11 May 2023, aircraft damaged

All mishaps are thoroughly investigated to identify causal factors, as well as to collect and promulgate lessons learned. Such efforts are a priority for the USMC in order to prevent future mishaps and continuously improve our safety posture. We execute this process to investigate, analyze, and produce actionable after-action reports to the Marine Corps so that our pilots, aircrew, and those marines that are supported across the battlefield understand the circumstances and corrective actions the USMC is taking to mitigate risk within the Naval Aviation Enterprise (NAE). All mishap reports are filed in RMI. RMI allows for transparent access for all cleared and eligible USMC and USN personnel to read, analyze, and use mishaps as a lesson learned tool in order to improve our processes and tactical execution. Institutional mishap causal factors and mishap recommendations are assigned to offices of primary responsibility for analysis and action to mitigate the factors that led to a mishap. Mishap causal factors recommendations and corrective actions are available to all USMC / USN commanders and their safety staffs via the archives in RMI.

General ALLVIN and General THOMPSON. In the last 2 years, causes of major DAF training mishaps have encompassed aircrew cognition/human factors, material issues, poor risk management, and non-compliance with established guidance. Investigations identified the root causes in each of these training mishaps and generated numerous recommended actions to prevent reoccurrence including equipment/system modifications, revised training and procedures, and additional inspections. The DAF also employs numerous proactive safety efforts to identify and mitigate hazards before a mishap occurs. These efforts include mobile hazard reporting capabilities, recurring analysis of flight parameters in aviation platforms, and unit safety climate and cultural assessments conducted by the Air Force Safety Center.

6. Senator HIRONO. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, are there any changes your service has made to training in the past 2 years to help mitigate and prevent accidents?

General GEORGE. The Army continuously seeks to learn from past incidents and update training protocols to mitigate and prevent accidents. Over the past 2 years, the Army implemented several actions to promote safe aviation operations. These include implementing the Emergency Response Methodology (ERM) to ensure Army pilots prioritize “flying the aircraft first” in an emergency, then address emergency

procedures. The ERM shifts the focus from rote memorization of emergency procedures to using a checklist as the next step of an emergency response—aircraft control and aircrew coordination come first. Another example is the Unit Trainer and Evaluator (UT/E) program. The UT/E program leverages company-level pilots as UT/Es to train basic pilot tasks, allowing battalion and brigade-level instructor pilots to teach, and train mission tasks. It enhances readiness at the company and platoon levels by emphasizing and integrating mission training into proficiency training.

Admiral FRANCHETTI. Navy has focused on two major efforts to drive change in the training domain. The first is emphasizing and ensuring risk assessments accurately and thoroughly reflect the hazards for every course topic across all course identification numbers, with special attention on high and moderate risk courses of instruction. Along with identifying the hazards, Navy stresses identifying the specific controls to mitigate each hazard. Navy provides additional risk assessment training to all safety managers across the domain, and in turn, those safety managers provide training to their collateral duty safety officers. Additionally, the same training is provided to all Learning Standards Officers (LSOs) across the domain so they can ensure the quality of risk assessments during annual formal course reviews. The engagement with LSOs has provided a more comprehensive emphasis on risk assessments overall, and during triennial high and moderate risk training safety evaluations, Navy Education Training Command (NETC) evaluates course risk assessments and provides guidance for improvement.

General SMITH. USMC aviation has continued to close out tasks assigned due to the Consolidated Disposition Authority (CDA) Final Report in case of 1st Marine Aircraft Wing Aviation Mishap Incidents 28 April 2016 and 6 December 2018. The purpose of those tasks being to holistically make changes to Marine Aviation that would have prevented the mishaps which triggered the CDA. Some of these changes include:

- Reassessing the minimum NSS (grade) for strike aircraft assessment and graduation, as well as for fleet replacement squadron completion.
- Updated and synchronized all F/A–18 Training and Readiness manuals, standard operating procedures, and all publications that govern aerial refueling.
- Improved information management and safety training by more effectively capturing lessons learned and standardizing the publication of these lessons learned to the fleet through the creation of the Marine Corps Mishap Library on MarineNet.

In addition, USMC aviation tracked and monitored MV–22 hard clutch engagements (HCE) and ultimately decided to suspend flight operations on aircraft which had certain aircraft part lives of over 800 flight hours in order to prevent future HCEs and possible mishaps. This is the most recent example of USMC aviation acting from systems and safety data and highlights the fact that this data is tracked by HQMC. In addition:

- MAG–26 began focused HCE recognition and procedural training with case studies and reviewing the procedures in the Naval Air Training and Operating Procedures (NATOPS) with an emphasis on education.
- MAG–26 dedicated a week to simulator training that put each pilot through a 2-hour simulator training block allowing them to recognize the various ways that a HCE can manifest and test their procedural knowledge and application.
- Once all MAG–26 pilots across the flight line were complete with the sims they published a policy document within the MAG that requires all pilots to conduct quarterly emergency procedure training in the simulator focused on HCEs.
- Fleet Support Team (FST) and PMA–275 coordinated with fleet representatives to develop 6 specific simulator scenarios based on the technical understanding of the HCE, as well as from event recreation data from all previously experienced HCE events. The six scenarios were added to the MV–22 simulator software to replicate the various instantiations of the HCE. This provided a baseline for pilot standardization during emergency training. Additionally, the simulator provides some randomization such that the symptoms and resultant aircraft behaviors are not always the same—requiring a higher understanding of the emergency by the aircrew and ensuring that the diagnostic skills of the pilots is being trained, as well.
- HCE briefs prepared by PMA and Naval Air Systems Command (NAVAIR), as well as squadron-specific briefs, have been disseminated around the fleet. Overall knowledge and awareness of the issue is much higher than it was 2 years ago.

USMC undertook a comprehensive upgrade to its survival swimming preparation and Underwater Egress Training (UET) program for amphibious marines in response to the 2020 AAV mishap as captured in a forthcoming MCO. In the aftermath of the 2020 mishap, it was recognized that marines were not being sufficiently prepared for survival swimming situations, and although UET training was excellent, adherence to procedures taught by UET was poor. Survival swimming standards have been raised to improve survival swimming preparation/proficiency as well as improving adherence to UET procedures in the event of an evacuation or underwater egress. During the ACV capsizing mishap in Del Mar Basin last summer, all of the marines involved had been trained to the new standards during a trial run in late spring, and all were able to evacuate their ACVs correctly without serious injury demonstrating the efficacy of the improved standards to improve survivability in the event of an amphibious mishap. These efforts included discussions with the Naval Survival Training Institute.

USMC has also coordinated with safety personnel across all five branches to update and implement a new version of the Human Factors Analysis and Classification System (HFACS). This new version was updated to better encompass the spectrum of DOD operations and improve identification of trends in human factors that may lead to a hazard or mishap. Identification of these trends before they lead to a mishap will help to improve risk mitigations and training, ultimately reducing incidence of mishaps or the severity of mishaps.

II MEF has developed a program to improve Night Vision Goggle (NVG) training for ground force marines in II MEF, improving safety of operations (including training/range ops) at night. This includes the first ever USMC Night Imaging Threat Evaluation (NITE) Lab for ground force marines which is nearing completion at Camp Lejeune.

The Marine Corps has focused a significant amount of time in defining and increasing the understanding of high-risk training throughout the Service. High-risk training must be identified at every phase of the risk management process. This classification does not stop the training from being conducted, it just ensures that increased risk mitigation is being conducted and increases communication of training identified as high-risk to the appropriate level of commander, in order to ensure their awareness of the training event and implement appropriate risk mitigations.

General ALLVIN. Training programs are continually evaluated to ensure the most effective and safest environment possible. Recent training adjustments have included implementation of enhanced supervisory risk management practices, improved aviation communication procedures, and instructional improvements to procedural training, including aviation emergency procedures. DAF also mitigates accidents utilizing performance-based programs/processes (e.g., Crew Resource Management, Aerospace Physiology training). AETC's Comprehensive Readiness Aircrew Flying Training (CRAFT) is the DAF's latest effort underway to mitigate accidents.

General THOMPSON. As accomplished in other operational areas of the DAF, training across the continuum of space operations is continually assessed to ensure the most effective and safest outcomes possible. Our occurrence of major mishaps in space operations has been low, and mishap prevention remains a top priority and is reflected in our training efforts. For instance, we recently developed a Space Mishap Investigation Course at the DAF Safety Center to formally train investigators to respond to future space mishaps if they occur. This will ensure we can identify the root cause of an accident and allow the development of recommendations to prevent future occurrences. In addition, we're training a Chief of Mission Safety at each of our Deltas to oversee the various aspects and programmatic requirements of space safety, ensuring effective identification and mitigation of risk in operations.

DEPARTMENT OF DEFENSE (DOD) READINESS RECOVERY

7. Senator HIRONO. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, the overall demand for the Joint Force remains high. For each service, how has full spectrum readiness improved, or not improved, over the last several years and what challenges remain for each of you?

General GEORGE. Over the past several years, the Army has continued to build ready units to execute missions directed by the Secretary of Defense in support of national objectives. Recent missions included: sustainment of Immediate Response Forces (IRF) with elements committed on several occasions; the deployment of forces to assure Allies in response to Russian aggression; support to the Department of Homeland Security along the Southwest Border, and other planned and un-planned operations within the year of execution. Each fiscal year began under a Continuing Resolution, further complicated by the restrictions associated with COVID response. Demand has not stabilized for the Army despite the withdrawal from Afghanistan

in 2021. Each of these unforecasted commitments compete during for year-of-execution funding already programmed for other activities. The Army's force generation is further constrained by limits on the availability of Reserve component formations that are only available for pre-planned rotations with the requisite authorities and time to mobilize. Finally, recent shortfalls in end strength and accessions have begun to impact units. Army leaders are adjusting to account for shortfalls and prioritizing personnel to align with priority units and missions. The Army can provide a more detailed readiness discussion that highlights the changes and challenges in a classified forum.

Admiral FRANCHETTI. The Navy continues to prioritize readiness to sustain our Forces through better maintenance performance, more training, improved parts availability, and increased weapons inventories. Navy readiness begins with our people: the sailors, civilians and families who are the foundation of our true warfighting advantage. Navy readiness is also centered on the readiness of our platforms. Using data analytics, improving our planning processes, and procuring long-lead materials, we have decreased maintenance delays in public and private shipyards, but there is more work to be done. Our fiscal year 2024 budget fully funds public and private ship maintenance, aviation depot maintenance, increases parts and spares, and continues to grow our highly skilled public shipyard workforce. Navy readiness is also driven by the readiness of our bases. Shore infrastructure is critical and we continue to fund the once-in-a century recapitalization and optimization of our four public shipyards through the Shipyard Infrastructure Optimization Program (SIOP). Our budget request supports increased sustainment of our shore infrastructure, while prioritizing restoration and modernization for water, electrical and safety systems.

Across the Navy, we are seeing readiness improvements. We have taken a data-driven approach to address maintenance delays. With respect to ship depot maintenance, initiatives are underway to improve availability planning, on-time schedule performance throughput, and production performance. As an example, the Navy's fiscal year 2024 budget request includes $540 million to establish and support a rotatable pool of submarine parts to ensure long lead material and critical parts are on-hand at the start of the availability. The budget submission would also fund critical investments required to revitalize our public shipyards, by delivering dry dock repairs and upgrades to support current and planned future classes of submarines and nuclear-powered aircraft carriers, optimize workflow through significant changes to their physical layout, and recapitalize industrial plant equipment with modern technology that will substantially increase productivity and safety.

The Navy is committed to tackling the complex and multifaceted challenges impacting the readiness of our platforms, places, and people. We are making progress, but more work remains. The increased funding provided by Congress in the 2023 Defense Appropriations Act is helping us to turn the corner on readiness, but improving readiness is a continuous process, especially as new challenges arise.

General SMITH. The Marine Corps' general upward trend in readiness has been largely driven by slow increases in aviation readiness brought on by readiness recovery efforts that started in fiscal year 20I7. Increases in funding levels for Marine Aviation readiness accounts made possible by congressional support have yielded tangible and sustainable results, increasing mission capable rates by 12 percent since fiscal year 2017. Additionally, consistent Operations and Maintenance funding levels have allowed the Service to sustain ground equipment readiness. Cumulatively, increased Marine Aviation and sustained ground equipment mission capable rates correspond with the Operational Force's steady increase in readiness from 2018 to present.

*Challenges: Presidential Drawdowns (PD) and amphibious warship capacity are complicating the Marine Corps' ability to train and maintain readiness.*

General ALLVIN. Air Force readiness increased modestly over the last 4 years, but we project readiness to trend lower in the future as we transition from a focus on counterterrorism to competition with peer adversaries. The Air Force must modernize its force as we change our focus to Great Power Competition and readiness for a peer threat. We are taking calculated risk in several critical readiness accounts to fund this enterprise-wide modernization. This means that Weapon Systems Sustainment is underfunded at 87 percent in fiscal year 2024 President's Budget. There remains 5,307 (4,579 AD / 218 ANG / 510 AFRC) unfunded maintenance manpower positions.

There is a widespread shortage of spare parts due to multiple factors including supply chain disruptions. The Flying Hour Program (FHP) is underfunded. The Fiscal Year 2023 President's Budget was programmed at 8 percent below the minimum training requirement. The Secretary of Defense directed an additional $250 million (−18,700 hours) deducted from OOC funds in fiscal year 2024. Funding the FHP to

anything less than 100 percent of the requirement will continue to prevent readiness gains, as well as eroding the experiential training advantage historically held over adversaries. The AF will take increased risk in fight tonight capability; divesting less relevant forces to help sustain a smaller, more prepared force and accelerate modernization investment to grow the future force. Finally, restrictions to retiring legacy aircraft and shedding unnecessary infrastructure jeopardize the Air Force's ability to maintain current readiness and significantly constrict future readiness investments.

General THOMPSON. The Space Force raised the bar on readiness standards and is prioritizing readiness in all areas.

The Space Force continues to dramatically shift our training and readiness approach under the Space Force Generation model (SPAFORGEN), which reached initial operational capability on October 1, 2022. SPAFORGEN ensures we incorporate threat-informed training to prepare for the high-end fight while continuing to provide the space capabilities the Nation depends on every day of the year. Commanders are applying upgraded standards used to measure unit readiness based on the ability to undertake their wartime mission. We are also tailoring readiness reporting in the Defense Readiness Reporting System for our predominantly Employed-in-Place (EiP) forces.

To enhance training, develop and validate new tactics, and get after the readiness needs of the Space Force, we are developing the Space Force Operational Test and Training Infrastructure (OTTI) to provide an advanced, full-spectrum test and training enterprise for realistic, threat-informed training. These changes will ensure we are prepared to address NDS problem sets and more accurately report Space Force readiness to the joint community. We appreciate Congress's steadfast support.

8. Senator HIRONO. General George, Admiral Franchetti, General Smith, General Allvin, General Thompson and Ms. Maurer, what are the main reasons for the lack of progress in readiness recovery?

General GEORGE. The Army's new force generation model, the Regionally Aligned Readiness and Modernization Model (ReARMM), is designed to balance the Army's current readiness as well as provide units the time to build future readiness through modernization. ReARMM, while still in its Initial Operating Capability (IOC) year, organizes units into life cycles and providing them predictable phases for modernization, training, and mission. These unit life cycles allow the Army to plan/predict readiness activities further out into the future in order to address potential readiness pitfalls sooner. The Army continues to assess and adjust ReARMM principles based on lessons learned ahead of Full Operating Capability (FOC) in fiscal year 2024.

Admiral FRANCHETTI. The Navy is building today on the positive readiness gains achieved over the last several years, while recognizing that much work remains to be done. The Chief of Naval Operations' (CNO's) "Get Real, Get Better" call to action remains a key engine for accelerating readiness performance. The Get Real, Get Better call to action is designed to scale the learning Navy has accrued over several years of force generation improvement, spanning significant progress in aviation mission capable numbers and the execution of ship maintenance, aircraft maintenance, and supply chain reform. Get Real, Get Better is designed to attack the variability between our best and weakest performers with clear standards for decision-making behavior and problem-solving, combined with tools, education and performance incentives. The essential element is fostering a healthy ecosystem—a culture—that assesses, corrects, and innovates better than the opposition, accelerating our warfighting advantage in this critical decade. As Get Real, Get Better becomes ingrained in our Navy culture, and we have consistently strong performance across the Navy enterprise, we will achieve the highest levels of readiness.

Navy is also providing the necessary resources to support our readiness initiatives to include funding 100 percent of the ship depot maintenance account in our fiscal year 2024 budget submission. Continued stable, and predictable funding will be essential to maintain readiness levels for force generation and industrial base health.

General SMITH. Post OIF/OEF readiness recovery has not been an issue. Our current focus is balancing readiness with two critical requirements in mind:

(1) providing operationally ready forces to meet current global force management requirements.
(2) modernizing the force to meet the demands of the future operating environment.

General ALLVIN. Despite short-lived readiness success in 2018 to 2020, the combined effects of three decades of high operations tempo, consisting of continuous combat verses low-end adversaries, aging legacy aircraft, and delayed modernization continues driving down readiness against near-peer or peer threats. The Air Force

must modernize its force as we change our focus to Great Power Competition and readiness for a peer threat. We are taking calculated risk in several critical readiness accounts to fund this enterprise-wide modernization. This means that Weapon Systems Sustainment is underfunded at 87 percent in Fiscal Year 2024 President's Budget. Finally, restrictions to retiring legacy aircraft and shedding unnecessary infrastructure jeopardize the Air Force's ability to maintain current readiness and significantly constricts future readiness investments.

General THOMPSON. We appreciate the work performed by the Government Accountability Office (GAO) on this topic and agree with their assessment. The GAO reported a decline in mission capability for units in the ground, air, and space domains while reporting improvements for resource readiness. The decline in unit mission capability readiness was expected when we implemented the new Space Force Generation model (SPAFORGEN). SPAFORGEN implements more stringent readiness standards to account for the increased threats to Space Force capabilities on orbit, on the ground, and in the electromagnetic spectrum.

However, we believe we are on the right path to improve readiness under SPAFORGEN and with investments in the Operational Test and Training Infrastructure. The Space Force continues to work closely with DOD to develop the right metrics, thresholds, models, and data bases to measure and track readiness to support informed resource and budget decisions.

Ms. MAURER. In April 2021, we reported that DOD had identified a wide range of challenges it faces as it seeks to recover readiness across the warfighting domains, for example:[1]

GAO, Military Readiness: Department of Defense Domain Readiness Varied from fiscal year 2017 through fiscal year 2019, GAO–21–279 (Washington, DC: April 7, 2021).

We discuss each of these challenges in more detail within the report. GAO, Military Readiness: Improvement in Some Areas, but Sustainment and Other Challenges Persist, GAO–23–106673 (Washington, DC: May 2, 2023).

- Sea domain. The Navy cited limited maintenance capacity at private and public shipyards as the primary challenge for recovering ship and submarine readiness.
- Air domain. The military services reported a variety of challenges related to air domain force elements including the effects of trained pilot shortages on the Army's AH–64 attack helicopter; and the effects of limited depot repair capacity on the Marine Corps' light attack helicopters.

In May 2023, we highlighted our own findings on readiness challenges in each domain.[2]

READINESS CHALLENGES IDENTIFIED BY GAO IN AIR, SEA, GROUND, AND SPACE DOMAINS


[1] GAO, *Military Readiness: Department of Defense Domain Readiness Varied from fiscal year 2017 through fiscal year 2019,* GAO–21–279 (Washington, DC: April 7, 2021).

[2] We discuss each of these challenges in more detail within the report, GAO, *Military Readiness: Improvement in Some Areas, but Sustainment and other Challenges Persist,* GAO–23–106673 (Washington, DC: May 2, 2023).

Source: GAO analysis of Department of Defense information; U.S. Air Force/ Senior Airman T. Gordnier; U.S. Navy; U.S. Marine Corps/Master Sgt. C. Matt; NASA (photos). GAO-23-106673

Our statement for the record included 37 reports, with over 100 open recommendations. Fully implementing our recommendations will help the services bolster military readiness.

RETENTION CHALLENGES

9. Senator HIRONO. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, in June 2021, the GAO identified several concerns related to the Surface Warfare Officer (SWO) career path and community. This report highlights retention issues that are applicable for each Service and military career path. What are your service's retention challenges?

General GEORGE. Over the past 20 years, Army Active Component Officer retention has not significantly changed. However, a tight labor market and low unemployment may be contributing to a slight decline in retaining officers to the 10th year of service. While some specialties, such as Cyber and Information Operations Officers, are more challenged than others, the Army continues to seek innovative ways to retain talent. The Army Talent Management Task Force and Human Resources Command are in the process of standing up the Active Component Officer Retention Program, with the goal of holistically developing and piloting initiatives that retain the Army's top officers, such as offering an assured mid-career pathway and other non-monetary incentives.

Admiral FRANCHETTI. All Navy unrestricted line communities face the additional responsibility of trying to ensure that its talented officers continue service in the Navy amidst increased competition from the private sector creating a challenging retention environment. At the end of fiscal year 2022, the Service held a deficiency of 790 control grade (O–4 to O–6) officers across the unrestricted line.

Naval Aviation experienced a decrease in overall retention in fiscal year 2022 with persistent challenges remaining in certain Type/Model/Series communities. While 11 of 14 communities met selectivity goals for department head (DH) on the fiscal year 2022 Aviation DH Screen Board, opt-out rates remained above the historical average and bonus take rates decreased. The Strike Fighter (VFA) community remains the priority concern with all squadrons facing officer manning deficits and insufficient LCDR pilot inventory for DH, resulting in gapping 25 percent of VFA pilot DH billets.

The Surface Warfare Officer (SWO) community continues to face challenges in retaining the necessary talent to meet control-grade requirements. SWO retention to DH rose slightly in fiscal year 2022 and the 3-year Department Head Retention Bonus take rate is at 35.1 percent, near the 10-year average of 35.6 percent.

The Submarine Community missed its accession goal for the last 3 years resulting in the extension of average Division Officer tour lengths by 2 months. Since fiscal year 2014, DH retention has declined reaching a low over the past 2 years. As a result, DH tour lengths now average 35 months which is an increase of 3 months.

The Sea Air and Land (SEAL) officer community sustained overall manning of 104 percent in fiscal year 2022, a modest improvement from fiscal year 2021. Despite overall positive community health, Naval Special Warfare Command (NSW) still experiences LCDR shortfalls due to above average LCDR losses. The DH bonus take rate declined for the fourth year in a row, with NSW meeting only 64 percent of goal (30 of 47). Total fiscal year 2022 SEAL officer losses were in-line with the 3-year average, but LCDR losses were the highest on record at 165 percent (22) of the 3-year average (13.3).

In fiscal year 2022, Explosive Ordnance Disposal (EOD) faced two challenges to community health: high attrition in Junior Officer inventory and a growing demand for future DHs and control grade officers. EOD separation numbers for LTs doubled (25) in fiscal year 2022 and LCDRs increased 167 percent (10). The take rate for the 4-year EOD Officer Retention Bonus declined to 36 percent in fiscal year 2022, well below historical average.

General SMITH. Marine Corps retention has been exceptional. As a result of FD2030—and before the COVID pandemic hit—we shifted from a "recruit and replace" to an "invest and retain" model with immediate, positive results. To be clear, although our recruiting conditions are challenging, once your marines become marines, they want to "stay marine." We exceeded our retention goals in fiscal year 2022 and have already done so again in fiscal year 2023, resulting in a more mature force with enhanced warfighting capability. Despite these successes, the retention environment is competitive. We continue to have challenges retaining certain communities like aviation, cyber, information, and some of our intelligence specialties.

We must continue to retain these marines due to the significant up-front investment and the unique capabilities they provide. To retain these highly skilled marines, we request continued support from Congress—especially this Subcommittee—for flexible incentives and special pays. The current and future environment necessitates employment of non-traditional approaches, skillsets, and talent management systems to enable the Marine Corps to prevail and win against peer competitors, while competing with industry and others to attract and inspire the highest quality of individuals to serve.

General ALLVIN. The Air Force values experience and focuses on retaining talent using both monetary and nonmonetary incentives focused on quality of service. In the aggregate, Air Force enlisted, and officer retention has remained consistently strong over the last 5 years, with a tight range of 89.5 percent to 91 percent for enlisted and very close range for officers of 93.1 percent to 94 percent. Comparatively, the current and 5-year retention is in a favorable trend space with the 20-year average for enlisted and officer retention ranging between 85 to 95 percent. Current Regular Air Force (Active Duty) retention for enlisted is 89 percent and officers is 92.2 percent, indicating that Air Force retention is normalizing. Peak retention occurred in 2021 in the immediate wake of COVID–19 pandemic, with 90.5 percent for enlisted retention and 94.5 percent for officer retention.

When we analyze individual communities, we see a few communities in which retention levels are trending lower than the Air Force average and lower than we need for the Regular Air Force. These career-fields include pilots, cyber professionals, and aircraft maintenance. The continued support of Congress with aviation, cyber and selective reenlistment bonuses will assist the Air Force in retaining talent in these critical skill sets in the future.

In addition to monetary incentives, we continue to focus on maintaining and improving quality of service. Over the past few years, we launched a talent marketplace platform to enable officers and certain enlisted career fields to request assignment consideration for open positions and are in the process of expanding the talent marketplace platform to include additional enlisted career fields. We are excited about adding a new approach to pilot bonuses that includes assignment preferences such as installation of choice, as an option, which will be a new addition to our talent management portfolio. The Air Force is also researching development of a Technical Track to offer a select portion of the officer & enlisted workforce an opportunity to build greater depth in a particular mission, functional area, and/or emerging technology. The beta test program aims to develop additional career pathways for airmen serving in some of our most high-demand, low-density positions such as cyber. The Air Force continues to partner with our Reserve components and when we are not able to retain an airman on Active Duty, we seek to affiliate talent into the Guard or Reserve and look for ways to improve permeability to achieve this goal more easily.

General THOMPSON. The fiscal year 2023 Expected Annual Retention for military guardians is 91 percent for officers and 88 percent for enlisted. While we are seeing positive retention rates, we know guardians are electing to separate or retire due to challenges such as childcare and family support issues. Many guardians are "employed in place" working 24x7, no-fail missions and require support outside normal installation childcare service hours. The USSF needs guardians' family childcare circumstances addressed to ensure appropriate focus on our national security missions.

The USSF is also seeking your support on the proposed approach to military talent management, the Space Force Personnel Management Act (SFPMA). If enacted, SPFMA would efficiently and effectively combine existing Regular and Air Force Reserve units and people that support the space mission and allow guardians to move between part-time service allowing for more efficient, unified management of the Space Force. This construct would improve quality of life, retention and allow the DOD to capitalize on skill sets developed outside the military.

10. Senator HIRONO. Admiral Franchetti, how is the Navy evaluating the SWO career path's effectiveness and addressing retention challenges, particularly with respect to female officer retention, which is almost a quarter of male retention at the critical 10-year mark?

Admiral FRANCHETTI. Retention behavior, inventory, milestone tours, sea/shore rotation, pipeline training, mariner skills assessment performance, as well as administrative and promotion board performance are regularly considered in evaluating the effectiveness of the SWO career path. Survey results and fleet feedback are factors that the community consider to determine efficacy.

As it pertains to female officer retention, feedback from the Fleet suggests family considerations—specifically the ability to start and maintain a family—are primary drivers for retention as measured from accessions source through Department Head

which occurs around 10 years of commissioned service (YCS 10). Currently female officer retention rate is 58 percent of male officer retention at the 10-year mark.

The Surface Warfare community has made several career path changes designed to add flexibility and (where appropriate) increase shore duty with intent to expand opportunity for individual personal desires such as starting a family—all without negative career impacts. The community encourages officers to build tailored, individualized career paths that align to their personal desires and maintain upward mobility for promotion and milestone screening.

More broadly, the Navy continues to address the challenges facing our sailors with families. The Navy has fully implemented the OSD policy changes extending parental leave to 12 weeks after the birth, adoption, or accepted placement of a child for long-term foster care. In addition, we remain committed to providing quality and affordable childcare programs that are available to meet the needs of our families. With the help of Congress, Navy is adding new Child Development Centers (CDC) in fleet concentration locations where demand for childcare exceeds current capacity. Additionally, Navy has increased fee assistance capacity by over 3,000 spaces, and the program increased the monthly fee assistance subsidy cap to $1,700 per child making the program more cost effective for military members.

SLEEP CONCERNS

11. Senator HIRONO. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, in May 2021, the GAO reported that sailors were not receiving adequate sleep and that the Navy lacked information on both the extent of fatigue and the factors causing it. For all the services, what are the root causes of fatigue, what are you doing to address them and better manage this problem?

General GEORGE. Sleep has traditionally been self-reported to inform fatigue risk management, but decades of sleep research has demonstrated that self-reported sleep has little correlation with an objective report of sleep. Current Service Risk Management Strategies are based on subjective self-reporting and are not appropriately designed to adequately compare fatigue risks against task requirements.

To remedy this, the Military Operational Medicine Research Program (MOMRP) has invested in research efforts to address the root cause of fatigue in the Department of Defense. Principally, MOMRP has researched the utility and acceptance of Fatigue Risk Management Software used in commercial transportation organizations and federally required in aviation, for relevance and effectiveness in military settings, such as surface ships. In parallel, MOMRP has resourced research evaluating strategies and technologies that reduce reliance on self-report of sleep by leveraging the incorporation of physiological sensors in Army and Navy formations for the seamless objective report of sleep durations. These objective measures of sleep are being seamlessly inserted into Fatigue Risk Management Software, reducing administrative burden and data management burdens on servicemembers, and providing commanders and leaders an objective fatigue status of their units. These strategies aim to remove subjectivity, and reporting challenges, while enabling objective management of unit fatigue in the face of required task completion.

Admiral FRANCHETTI. The root causes of fatigue are well understood and may include factors such as interrupted sleep cycles, length of workday, shipboard operations at sea, and individual consideration. The Navy has several initiatives underway to monitor fatigue near real-time, alert Sailors and their commands of the associated operational risks, provide interventions, and improve the shipboard sleep environment. Based on extensive work with research partners and feedback directly from the sailors on the Navy's ships, the Surface Force has established clear policy goals that include:

- A 24-hour work and sleep cycle for all hands, every day;
- 7.5 hours of sleep opportunity for all hands each 24 hour period;
- Limits to the length of the work day;
- A shipboard routine that supports both rest and work;
- Specific consideration of the risk of fatigue in our planned and unplanned work.

Although more work is ongoing, the Navy's Surface Force currently reports an average of 6.22 hours available to sleep per day based on fiscal year 22 annual climate assessments conducted on various commands. This is an improvement from the baseline assessment taken in 2018, which implemented recommendations of the 2018 Comprehensive Review and Strategic Readiness Review to implement governance structures to monitor and measure efforts to improve the readiness and safe operations of the Fleet.

General SMITH. USMC aviation has a robust fatigue management system through CNAF 3710.7 that units are required to strictly adhere to. Those standards include: crew rest, defined as free time for meals, transportation, rest and shall include an opportunity for 8 hours of uninterrupted sleep for every 24-hour period; mandated non-flying days for aircrew who cross greater than three time zones, and consistent scheduling of aircrew so as not to interfere with their circadian rhythms. Operations departments adhere to these standards when writing flight schedules. These schedules dictate what specific aircrew are flying which missions at which times. To verify flight schedules are written to these standards, they are routed through the unit's Department of Safety and Standardization who ensure the CNAF 3710.7 fatigue management standards are being adhered to. Sleep data is input into the safety investigation reports of all major mishaps.

USMC ground tactical vehicle standard operating procedures for the Marine Forces, Marine Expeditionary Forces, Marine Divisions, Marine Logistical Groups, and Marine Air Wings ensure that vehicle operators must be provided an opportunity for 8 hours of continuous rest/sleep within a 24-hour operational period. Many of the SOPs State that tactical vehicle operators will not exceed 10 hours of driving per day of movement and that commanders will establish rest-recovery guidance, in order to combat any fatigue issues.

Safety Division partnered with the GAO to complete their ongoing (soon to be completed) survey of fatigue and the causes of fatigue in military populations. This effort will inform future fatigue mitigation efforts for all marines. Additionally, Safety Division is working with the GAO to evaluate the implementation of fatigue mitigations in the Navy Fatigue report previously completed by GAO.

We ensure our commanders understand that are, and will be held, accountable for ensuring sufficient sleep for the marines and sailors in their charge.

General ALLVIN and General THOMPSON. Root causes of fatigue are multifactorial and can include medical conditions, military readiness, the dynamic tempo and work schedules of military work environments, and life stressors/lifestyle choices. The Government Accountability Office has conducted a tri-service audit to investigate servicemember fatigue with results pending. DAF/SG addresses sleep status at multiple levels to include individual, unit/group/installation, and high-risk unit.

Periodic Health Assessment (PHA): individual

- PHA is an annual screening tool used my medical professionals to evaluate the individual medical readiness of servicemembers and includes questions regarding the amount and quality of sleep.
- Individuals reporting suboptimal sleep receive recommendations which may include a Primary Care Behavioral Health provider or other support referral for further evaluation.

Health and Readiness Optimization (HeRO) Report: unit/group/installation

- HeRO is a worksite wellness model to provide educational, behavioral, policy, and environmental evidence-based strategies to make healthier food choices, increase physical activity, optimize sleep, and reduce smoking.
- Analyzes lifestyle, sleep affecting performance data obtained from the PHA and changeable risk behaviors to include adequate sleep.
- Data is analyzed and organized by unit with other relevant factors to calculate estimated workdays lost due to modifiable health behaviors.
- Data is provided to commanders annually with recommendations to address problem areas.

Operational Support Team (OST): high-risk unit

- The OST is a five-person medical support staff team that rotates through squadrons every 4–6 months, working to improve musculoskeletal fitness, mental health, enhance overall workplace health and safety, and build relationships within the unit to make health care more accessible.
- OSTs are driven by a unique data analytic capability through 711 Human Performance Wing enabling visibility on the highest-risk units.
- Each OST is comprised of a physical therapist, strength and conditioning specialist, psychologist social worker and team specialist.
- Sleep and operational fatigue are presented several ways during the team's training.
- OSTs develop an evidence-based Unit Action Plan to target needs-based trends/stressors.

Guardian Resilience Teams (GRTs):

The USSF Holistic Health Approach (HHA) is being established to deliver a ready, fit, professional force that protects the Nation's interests in space, and to foster a healthy lifestyle approach supporting the wellness of each guardian through, Education and Training, Performance Health Optimization (e.g. preventive medicine), and Continuous Fitness supported by Guardian Resilience Teams (GRTs).

The USSF ICW the Air Force Research Lab is conducting a voluntary Continuous Fitness Assessment Study (CFA) to study the effectiveness of moving away from episodic testing to promote regular, purposeful physical activity.

CFA Study Components:

- o Guardian Well-Being—Evaluate how CFA participant fitness and job satisfaction compares to guardians electing to take the USAF PFA test (e.g., injuries/ lost duty days, reported well-being, retention).
- o Mission Performance—Assess CFA impact on mission performance.
- o CFA Parameters—Fine tune post-study CFA program parameters (e.g., Guardian-GRT team interactions), based on participant data and surveys.
- o Technology Effectiveness—Assess effectiveness of wearable technology in monitoring prescribed fitness factors and informing USSF-specific fitness programs.

PRIVATIZED HOUSING AND ENLISTED BARRACKS

12. Senator HIRONO. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, just last month, the GAO found a number of management and oversight issues that need improvement with the Military Housing Privatization Initiative. For each service, where do you think you can do better and how are you going to address lingering concerns with both privatized housing and enlisted barracks?

General GEORGE. The Army has established several policies and procedures as directed by the 2020 National Defense Authorization Act (NDAA) to improve management and oversight of the Military Housing Privatization Initiative (MHPI), but acknowledges the need for further improvement, including at the execution level at the Army installations. Additional training is required for housing office personnel to clearly understand their roles in assisting tenants with housing issues, leading tenants through the dispute resolution process and inspecting housing. The Army is planning additional training on dispute resolution and on roles and responsibilities at the installation level, along with the development of job aids, to ensure that all Army housing personnel are prepared to be the best advocates for soldiers and families. The Army developed a rapid delivery inspector course and trained 167 personnel in conducting inspections. The Army will refine this training going forward to ensure the remaining MHPI inspectors are trained over the next 2 years and that a robust annual training plan is established to capture enduring training requirements. The Army noted the continued lack of knowledge amongst residents on the Tenant Bill of Rights and confusion on the mechanics of the dispute resolution process. While both are covered in detail during the Plain Language Brief that is given to every Army tenant signing a lease, the spouses and families of the soldiers may not attend the brief and are not informed on the information covered. The Army is developing quick reference for residents regarding the dispute resolution process. These materials will include points of contact, a list of issues eligible for the formal dispute resolution process, and Tenant Bill of Rights advertising. All Army MHPI companies have published this information on each project's website.

The Army intends to invest over $1 billion per year in unaccompanied housing. This includes construction, facilities sustainment, restoration, and modernization across the FYDP. Such investment will help to improve conditions for unaccompanied soldiers across all types of barracks—permanent party, individual training, and collective training. Issues such as facility condition, functionality and deficit are the main factors that are weighed when identifying barracks projects for investment. Earlier this year, Army Senior Leadership directed all three components to inspect all barracks for life, health, and environmental safety conditions. As concerns are observed and identified, the Army is implementing corrective actions. The Army continues to evaluate all opportunities to provide quality housing for soldiers.

Admiral FRANCHETTI.

*Public-Private Venture Housing*

The Navy has made great strides in improving the privatized housing program. Thanks to Congress, we have the funds and tools to perform better oversight of PPV partners, as well as analysis of our processes, policies, and overall program to ensure higher levels of service and satisfaction for our sailors and their families.

Navy worked with PPV partners to ensure the partners fully implemented the Tenant Bill of Rights to include Dispute Resolution, Rent Segregation, and providing the Seven Year Maintenance History to residents. All PPV Partners implemented the Universal lease as of January 2023. Navy project oversight efforts include actions to resolve issues identified during Tenant Satisfaction Surveys and key metrics related to project sustainment.

*Unaccompanied Housing*

To improve living condition in unaccompanied housing (UH), the Navy currently is focusing on several efforts to increase ownership, advocacy and visibility of issues. To that end, on 2 May 2023, Navy released NAVADMIN 102/23, "Navy Unaccompanied Housing Resident Bill of Rights and Responsibilities." This bill of rights and responsibilities outlines what residents may expect while residing in Navy controlled UH and their responsibilities.

Last fall, Commander Navy Installations Command (CNIC), the Navy Housing program manager, standardized the inspections program that includes semi-annual preventive medicine unit to ensure the health and safety of residents, and the installation UH management staff conducts monthly inspections for adequacy and habitability of facilities. The standardized inspections conducted by UH staff identify issues requiring correction to provide safe, reliable housing for sailors. In addition, as part of our UH improvement efforts, we reinvigorated the Command inspection program to better monitor daily living standards. This enhanced oversight offers UH management and unit command leadership the ability to proactively identify any relevant maintenance, health or safety issues in UH.

Navy rolled out a QR code program across the enterprise in an effort to improve the maintenance process. The QR code initiative allows residents to report routine maintenance issues at any time of the day or night using their cell phones. Since the rollout, there has been an increase in the volume of service calls, while completion times have remained steady. As there has not been an increase in staff within UH or Public Works, CNIC is monitoring operational metrics closely to determine optimal staffing requirements.

The Navy requested $165 million in President's Budget 2024 ($400 million FYDP) to renovate and replace poor and failing UH. We appreciate Congress' support for these investments in Navy UH.

General SMITH. The Marine Corps inventory of unaccompanied housing (UH) is comprised of 672 facilities, of which 16 percent (108) are below an acceptable condition level (rated as Q3 or Q4 facility condition index). We want every Marine living in facilities that meet acceptable condition standards. Accordingly, we have embarked upon a path to improve overall quality of UH to Q2 or higher by 2030, prioritizing barracks facility renovations. For example:

- In fiscal year 2022, the Marine Corps renovated 14 barracks, totaling $117.8 million, to improve the quality of life of an estimated 3,353 marines.
- In fiscal year 2023, the Marine Corps is on track to execute the renovation of an additional 16 barracks, totaling $262.2 million, to improve the quality of life of an estimated 4,763 marines.
- In fiscal year 2024, the Marine Corps plans to renovate 13 barracks, totaling $116 million, to improve the quality of life of an estimated 4,339 marines.

We are also focusing on oversight procedures to improve the condition of inadequate UH and more broadly provide for high quality facilities in a predicable, sustainable manner. For example, we are testing QR codes on the doors of our barracks rooms at Marine Corps Air Station Miramar and Camp Pendleton for marines to scan and report maintenance concerns. Additionally, on the laundry rooms doors of these test barracks, we have placed QR codes there to enable marines to report which washers and dryers require maintenance. The goal of QR codes access to maintenance reporting is to ensure a more responsive, accurate, and connected reporting and remedy system.

We are also making targeted investments using MILCON projects like P158, which in the fiscal year 2024 base budget for a $131 million Bachelor Enlisted Quarter and Support Facility aboard Marine Barracks Washington.

Of course, the Marine Corps can accelerate the pace at which we get all barracks assets to Q2 or higher, should the President or Congress decide to make additional funding be available. The Marine Corps has 12 additional "shovel-ready" barracks renovations projects totaling $155 million to improve the quality of life for an additional 4,178 marines.

*[Public-Private Venture Family Housing]* The Marine Corps is striving to educate tenants on the dispute resolution process (DRP) and the chronological steps to take. The Marine Corps has developed flyers as outreach materials to provide to tenants

to inform them when they are supposed to enter into the Formal DRP. Additional instructions were included on the DRP Request Form to assist the tenant in completing the Request Form. The Marine Corps is actively working on a Tenant Guide (to be released in the later part of 2023) to clearly identify how the process works and communicate roles and responsibilities.

The Marine Corps intends to review and update existing guidance on the formal dispute resolution process and/or create supplemental materials to better clarify for Military Housing Office personnel the requirements, processes, and procedures for the formal dispute resolution process as well as how and when they may use the formal dispute resolution process. Additionally, the Navy has drafted a desk guide and it is currently under review. The Marine Corps intends to follow suit. Estimated completion 30 September 2023.

The DON will review existing policies and supplemental guidance and make updates as needed to improve clarity regarding roles and responsibilities of the Military Housing Office staff. Estimated completion 30 September 2023.

Marine Corps is awaiting notification of the Navy Manpower Analysis Center's approval of the updated Housing Manpower Model. Once approved, CNIC Housing and Marine Corps plans to use the model to further analyze the staffing requirement.

Once the DOD establishes department-wide guidance, the DoN will update the Navy's "Conducting Navy Housing Inspections" training course which is available to Marine Corps too, as needed, to clarify requirements and incorporate any changes or additions to existing DON inspection policies and information products.

The Marine Corps understands the importance of the tenant advocate at the installation level and will be developing a framework to address this recommendation in the near future.

*[Enlisted Barracks—Unaccompanied Housing]* The SECDEF's Suicide Prevention and Response Independent Review Committee (SPRIRC) issued its final report on February 24, 2023 and made 127 recommendations. One of those recommendations included providing access to high-speed internet in military barracks to improve quality of life. Several recommendations call for improvements to barracks, dorms, and military housing. The Marine Corps is working with the Office of the Secretary of Defense to develop potential implementation plans and identify any barriers to implementation for each SPRIRC recommendation.

Separately from the SPRIC recommendations, the Marine Corps continues to focus on improving housing for our services members. For example, every unaccompanied housing (UH) facility offers high speed internet services and all new UH have internet service capabilities incorporated into the design and construction of the facility. As part of I&L 2030, the Marine Corps is conducting a stem-to-stern review of barracks management and exploring UH privatization options. One the most recent results from the Marine Corps review was the development of the Marine Corps UH Guarantees and Resident Responsibilities. The Marine Corps created the Guarantees and Responsibilities as UH has been identified as an improvement that positively impacts marines' morale and overall quality of life within Marine Corps strategic efforts. Representatives from across the Marine Corps drafted these guarantees to address marines' needs and concerns in UH. The Guarantees and Responsibilities also defines clear expectations for residents to sustain and maintain high quality housing. By codifying these guarantees, the Marine Corps has strengthened its dedication to providing quality housing, and by extension, quality of life for our marines and sailors. These guarantees are integral to recruitment and retention.

General ALLVIN and General THOMPSON. The Department of the Air Force (DAF) has made significant progress implementing reforms to enhance oversight of privatized housing and holding our privatized housing companies accountable for providing quality housing, and positive living experience for our members and their families. Most of our private partners meet or exceed the DAF standards as prescribed in our metrics. However, when we identify concerns with operational performance, we place project owners on Community Action Plans or Performance Improvement Plans to remedy deficiencies. We are committed to financially restructuring privatized housing projects to ensure they remain financially stable.

In order to maintain quality housing conditions, installation housing offices and leadership conduct dormitory inspections on a routine basis to identify issues with life, health and safety so they can be addressed. The DAF is committed to continuing to train leaders at all levels and monitoring the State of our housing and dormitories to ensure we address the individual issues of our members while we provide program oversight.

STRATEGIC READINESS EFFORTS

13. Senator HIRONO. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, over the years, DOD and the services have updated their readiness models and reporting in order to get the most accurate picture of the readiness of the force to better inform force management and budgetary decisions. It is equally important that Congress get the most accurate picture of readiness so we can also make informed resourcing decisions. How have each of you improved strategic readiness reporting to track your progress and report to Congress?

General GEORGE. In 2014, the Army published Army Regulation 525–30, "Army Strategic Readiness" (revised in April 2020), to qualitatively define and assess the strategic readiness of the Army. Each quarter, the Army conducts a holistic assessment of Army strategic readiness which goes beyond the typical core mission (C-level) ratings of tactical units. This assessment takes into consideration title 10 functions, War Planes, and assessments from each Army Command, Theater Army, and Direct Reporting Unit. The Army uses this assessment to inform the Semi-annual Readiness Report to Congress (SRRC), Joint Force Readiness Review (JFRR), and the Chairman's Risk Assessment (CRA) that are required by law. On a monthly basis, Army senior leaders host the Total Army Readiness Review (TARR) which examines the Active and Reserve components by function at both tactical and strategic echelons.

Admiral FRANCHETTI. The Navy is leveraging the lessons learned from its driver-based performance management process known as Perform to Plan (P2P). P2P was originally instituted to address known critical readiness gaps such as aircraft mission capable rates. It has improved overall Navy readiness reporting through its better use of data, the use of data analytics to prioritize Navy efforts where they will have the most positive impact, adding rigor in definitions to allow a common understanding of issues and potential solutions, and the designation of a single accountable 3-star Flag Officer for each key readiness issue.

Navy provides their strategic readiness issues via the Semi-Annual Readiness Report (SRRC) and the Joint Forces Readiness Report to Congress via Office of Secretary of Defense and the Chairman of the Joint Chiefs of Staff. These reports keep a running dialog of issues and trends.

General SMITH. The Marine Corps has enhanced functionality within the Defense Readiness Reporting System that has automated as much data entry as possible, while reinforcing policy compliance. These enhancements have reduced errors and provide a more accurate picture of operational readiness, which is just one dimension of strategic readiness.

The Marine Corps along with other the Services, Joint Staff, and OSD have been working together to improve the Department's understanding of the comprehensive and cumulative impacts of Senior Leaders' decisions on future readiness. This cooperative effort has been codified in policy, and once approved, will establish a strategic readiness framework that combines a comprehensive assessment of readiness with advanced data analytics. Strategic Readiness Assessment findings will inform the development and preparation of the National Defense Strategy, the Defense Planning Guidance, the Program and Budget Review process, the Global Force Management Board, and the Global Force Management Allocation Plan.

General ALLVIN. The Air Force conducted a service-wide review and revamped unit mission essential tasks (METs) required to execute against a peer competitor. These METs help align DRRS reporting to strategic priorities & can ID/measure relevant capability gaps. Five months of reports have been assessed with these new METs and a baseline is still being established. Additionally, in conjunction w/ OSD readiness initiatives, the Air Force is developing its baseline model contributing to the Readiness Decision Impact Model which will feed the Strategic Readiness Assessment and Cumulative Impacts to Strategic Readiness. Finally, the Air Force transitioned to the Force Element (FE) construct to more consistently present forces to Joint Force commanders; FEs contain both a Readiness and Availability assessment, which will feed USAF"s RDIM baseline model.

General THOMPSON. The USSF is implementing its Space Force Generation (SPAFORGEN) model to service retain a portion of the force to perform threat-informed training and readiness activities to generate combat-credible forces, ready for the high-end fight. In addition, the USSF is developing the Space Force Input Tool (SFIT) to more accurately report the readiness of our predominantly employed-in-place forces into the Defense Readiness Reporting System—Strategic. Specifically designed to use our new readiness standards, tying together mission-essential equipment and infrastructure with personnel and threat-informed training, SFIT will provide a more accurate and comprehensive portrayal of USSF readiness to the Joint Community.

FORWARD DEPLOYED NAVAL FORCES (FDNF) JAPAN AMPHIBIOUS SHIP BASING

14. Senator HIRONO. Admiral Franchetti, how many amphibious ships are currently apart of the Forward Deployed Naval Forces (FDNF) in Sasebo, Japan?

Admiral FRANCHETTI. There are currently four amphibious ships homeported in the FDNF in Sasebo, Japan after the departure of USS *Ashland* (LSD–48) earlier this year for her new homeport in San Diego, CA.

15. Senator HIRONO. Admiral Franchetti, what are the expected changes to the number of FDNF-Japan amphibious ships in Sasebo in the next 5 years?

Admiral FRANCHETTI. In support of the Navy and Marine Corps expeditionary forces, the Navy is committed to maintaining 4 forward deployed Amphibious ships in Sasebo, Japan.

16. Senator HIRONO. Admiral Franchetti, does the current number of amphibious FDNF ships in Sasebo, Japan prevent the deployment of three-ship Amphibious Ready Groups (ARG) made up of one landing helicopter dock (LHD) or landing helicopter assault (LHA), an LPD, and an dock landing ship (LSD)?

Admiral FRANCHETTI. No, the Amphibious ships forward deployed to Sasebo, Japan when employed together do make the ARG as listed in the question.

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QUESTIONS SUBMITTED BY SENATOR TIM KAINE

FIRE SAFETY

17. Senator KAINE. Admiral Franchetti, the Naval Enterprise averaged a loss of 108 lives and $1.4 billion in property damage and injuries each year over the last decade. In 2022, the Navy re-established the Naval Safety Center as the Naval Safety Command (NAVSAFECOM) to create an enterprise lead for the Navy's Safety Management System (SMS) and to better collect and share lessons learned that could prevent future losses. Additionally, at the end of 2021, the Naval Sea Command (NAVSEA) established an Industrial Fire Safety Assurance Group to "focus on preventing future industrial shipboard fires and reducing risks highlighted in the investigations of previous fires." How do these organizations differ, and how do they coordinate for improved outcomes?

Admiral FRANCHETTI. The Navy is committed to protecting sailors and property. Both organizations are focused on improving safety and reducing unnecessary risk. NAVSAFECOM is responsible for the safety management system and effective accountability across the Naval Enterprise. NAVSEA 00FS (Industrial Fire Safety Assurance Group) is responsible for improving fire safety of ships during industrial periods (CNO Availabilities, sustainment, and other maintenance activities). With personnel specifically educated/focused on fire science, prevention, and response, the organizations coordinate on fire reporting and analysis of shipboard industrial fires to develop metrics analysis and solutions for preventing fires and protecting our Navy sailors and fleet.

18. Senator KAINE. Admiral Franchetti, what role can technology play in collecting, assessing, and sharing information for real-time response during ship fires and for informing lessons learned?

Admiral FRANCHETTI. The Navy is implementing technological solutions that improve real time collection and analysis of response and informing lessons learned. This includes using technological solutions to share a common operational picture during response, application based data collection to improve fire reporting, and improved data visualization tools for seamless integration and display for the purposes of sharing lessons learned and data.

19. Senator KAINE. Admiral Franchetti, to what extent is NAVSAFECOM and NAVSEA considering artificial intelligence and digital twin technology as tools to improve decision making during emergencies?

Admiral FRANCHETTI. The Navy is exploring artificial intelligence and digital twin technology as tools to improve decisionmaking. For example, the NAVSEA Data Science Summit, a 3-day summit of presentations and panel discussions, planned for August 2023 will discuss advances in AI technology and its implementation and integration to improve decisionmaking. NAVSEA will continue to leverage technology to identify root causal commonality to be more predictive.

20. Senator KAINE. Admiral Franchetti, how does the Navy plan on fusing human factor data and shipboard data to improve decisionmaking during emergencies?

Admiral FRANCHETTI. The Navy has developed a new data science capability that serves to improve data collection, ingestation, management, and dissemination of operational safety and human factors data to help enhance the fleet's ability garner lessons learned and inform decisionmaking.

The Navy has mandated Afloat Surface Climate Assessment Surveys (ASCAS), to be completed annually. These data are routinely collected to assess shipboard team dynamics, crew information sharing, firefighting capabilities, human performance, as well as several other human factors related psychometrics. The ASCAS data serves to inform decisionmaking at all echelons across the Surface enterprise as well as inform training requirements.

MUNITIONS SUPPLY IMPACTS TO TRAINING READINESS

21. Senator KAINE. General George and General Smith, how is training readiness in your service being impacted by the reduced availability of ammunition and equipment due to the war in Ukraine, especially in artillery units?

General GEORGE. There are no impacts to Army training readiness due to ammunition provided to Ukraine. The Army has maintained sufficient ammunition inventories to support weapons training for the weapon systems. The Army has not curtailed weapons training for artillery units.

General SMITH. Overall, the Marine Corps remains concerned with the impacts to munition inventories due to the continued support to Ukraine. We have implemented mitigations to limit short-term impacts to the service; however, continued support for certain high demand munitions may require the service to assume additional risk to training and readiness in the long-term.

Marine Corps artillery readiness has not been significantly impacted by providing ammunition to Ukraine due largely in part to residual training proficiency and short-term mitigation strategies. The service will continue to assess artillery unit readiness and take appropriate measures to ensure operationally ready forces to meet GFM requirements.

22. Senator KAINE. General George and General Smith, even if there are no current impacts to training and readiness due to current reduced ammunition and equipment availability, how are you monitoring the situation and do you anticipate any future impacts to training readiness?

General GEORGE. The Army has prioritized weapons training as a critical consideration when assessing the impacts of supporting Ukraine ammunition requests. The Army conducts an assessment for each Presidential Drawdown Authority (PDA) to determine the impact to Army ammunition requirements. The Army conducts an in-depth review for any PDA munitions request that may impact training and provides an assessment to either not support the request or provide alternatives to mitigate risk to Army training. Currently, the Army does not anticipate ammunition availability to impact future training readiness.

General SMITH. The Marine Corps uses two thresholds to assess Ukraine support impacts. First, for equipment, the service uses the Authorized Acquisition Objective (AAO) as a benchmark. The service raises concerns with any equipment request that will cause the service to go below AAO and impact operational force equipment inventories. Second, for munitions, the service uses the Total Munition Requirement (TMR). As with equipment requests, the service raises concerns with Ukraine munition requests that will negatively impact training and war reserve requirements. In addition to the two thresholds listed above, coordination between the supporting establishment and operational forces via the USMC Institutional Readiness Working Group provides additional information required to analyze readiness impacts and determine associated risks created by equipment and munitions shortages.

At this time, it is difficult to ascertain future impacts to training readiness without knowing the equipment and munitions quantities that will be required by Ukraine in the future. Ultimately, impacts to training and operational readiness will vary by munition and equipment type. The service will continue to assess readiness and associated risks for all equipment and munitions requested in support of Ukraine. We will also continue to minimize short-term impacts through various mitigation efforts to include simulation training and the use of training rounds.

SHIP READINESS

23. Senator KAINE. Admiral Franchetti, where is the Navy planning to stand up the first pilot of the surface ship readiness squadron?

Admiral FRANCHETTI. To simplify, streamline and align oversight responsibility for surface ship readiness, Navy is establishing Naval Surface Groups (CNSGs), commanded by a post major command Captain (O–6) in Fleet Concentration Areas

(FCAs) with oversight responsibility of Maintenance and Basic Phases. This will be a multi-year effort to induct the Surface Force into CNSG administrative chain of command (ADCON) structure. CNSG organizations are already established in Japan (CNSGWP), Hawaii (CNSGMIDPAC), and Mayport (CNSS–14). CNSS–14 will undergo a name change to conform with the CNSG model. This is being expanded in San Diego, CA, Norfolk, VA, Everett, WA, and forward in Rota, SP and Bahrain.

24. Senator KAINE. Admiral Franchetti, will the fleet-wide implementation of surface ship readiness squadrons be accompanied by a review of the required crew size and composition for ships undergoing complex maintenance periods?

Admiral FRANCHETTI. The Fleets have recently established minimum manning thresholds during the maintenance phase of the Optimized Fleet Replacement Plan to provide sufficient manning (and supervisory manning) to ensure safe and timely completion of maintenance. In April 2023, US Fleet Forces Command established a maintenance phase threshold of 75 percent fill and a supervisory threshold for Chief (E–7) manning at sea of 70 percent fill. All of these threshold efforts are efforts to optimize an overall manning shortfall of requirements on surface ships. This threshold will be continually reviewed to ensure ships are adequately manned to carryout assigned maintenance. It is expected that Readiness Squadrons will be a key input into these reviews.

HUMAN PERFORMANCE FACTORS & SAFETY

25. Senator KAINE. Admiral Franchetti, how does Naval Safety Command plan to be more effective and holistic in its approach than its predecessor, the Naval Safety Center?

Admiral FRANCHETTI. The Navy established the Naval Safety Command on 4 February 2022 to support continual organizational learning across the enterprise to understand actions/behaviors that directly contribute to mishaps and prevent their future occurrence. Additions were made to the Naval Safety Command's mission to more holistically and effectively identify leading indicators of risk by not only assessing the Navy's frontline unit safety performance, but also evaluating and holding the entire chain of command accountable for how they support subordinate units in managing risk and building a strong safety culture. Discrepancies and areas for improvement provide the Enterprise with leading indicators and "free" opportunities to evaluate deficiencies and apply effective corrective action prior to a pinnacle event. Naval Safety Command communicates their findings directly and transparently to the senior commanders allowing leadership to directly prioritize and address risk within their organizations. The Naval Safety Command works directly with the 4-star led Learning to Action Board to elevate risk for Navy action and to test the efficacy of prior corrective measures to ensure those actions are delivering their intended effect.

26. Senator KAINE. Admiral Franchetti, how is Naval Safety Command going to provide oversight and ensure that commands comply with elements of human performance that not only affect ship safety but the health and well-being of sailors, such as sleep regulations and physical fitness?

Admiral FRANCHETTI. The Naval Safety Command's newly developed three tier assessment process provides direct assessment of risk management practices from Echelon II through unit level commands to assure proper risk management and the success of the Safety Management System. Assurance evaluates organizational drift to evaluate deviation between system design and execution. The Naval Safety Command directly evaluates the execution of force policies affecting the well-being of sailors. These assessments often include risks to our sailors based on manning shortfalls, excessive deployment rotations, inadequate facilities, and medical service availability. The Naval Safety Command promotes enterprise transparency by ensuring senior leadership are informed of all assessment results allowing them to take informed action to improve the enterprise's risk posture and sailor readiness.

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## QUESTIONS SUBMITTED BY SENATOR TAMMY DUCKWORTH

HUMAN RESOURCES CAPACITY AND CAPABILITY

27. Senator DUCKWORTH. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, I am heartened to hear that your Services are considering new ways to retain talent in all career fields and in aviation in particular. However, it seems that many of the Services' human resources organizations are ill-equipped to process basic pay, leave, and permanent change of station (PCS)

orders, let alone administer new bonus or retention programs. How do you assess your human resources personnel, organizations, software, etc. are equipped to support your personnel?

General GEORGE. The Integrated Personnel and Pay System—Army (IPPS-A) is the critical enabler for The Army People Strategy. On December 20, 2022, the Army began a phased deployment of IPPS-A Release 3 to the Human Resources (HR) professionals of all three Army components (Active (AC), U.S. Army Reserve (USAR), and Army National Guard (ARNG)). Beginning January 3, 2023, commanders and leaders were integrated onto the system, culminating on January 17, 2023 with all Soldiers Army-wide integrated into the system. Today there are over 1.1 million active users in IPPS-A.

IPPS-A does not process basic pay at this time. The current release processes limited pay actions, one of which is absence requests (leave), allowing servicemembers to submit the absence request from their personal mobile device. Accuracy rates for absence processing since Go-Live in January is above 98 percent.

IPPS-A also produces Permanent Change of Station (PCS) orders for servicemember. These Permanent Change of Station (PCS) orders look different than legacy orders, to address this concern the IPPS-A office continues to work with key stakeholders at U.S. Army Human Resources Command (HRC), Defense Finance Accounting System (DFAS), Installation Management Command (IMCOM) and U.S. Army Financial Management Command (USAFMCOM) to inform appropriate organizations on the changes. The IPPS-A team and these same stakeholders work together to address any concerns to ensure servicemembers receive the correct PCS entitlements. As with any new modernized way of doing business, it takes time to institutionalize procedures. IPPS-A has a robust training program that is readily accessible to the entire Army, and the Army deploy assistance teams to locations that require help.

The Army will continue to administer bonus and retention programs using legacy processes. IPPS-A will not subsume the Army's retention software, Keystone Retain, but does have an inbound and outbound interface with Keystone Retain to record contracts. This ensures servicemember's records are up to date with their contract and bonus information as well as their updated projected separation date.

To support H.R. professionals, commanders, and all soldiers during this transition, the Army built robust customer support resources to include customer relationship management software, in-person over the shoulder support sites across the globe, virtual management software, in-person over the shoulder support sites across the globe, virtual management software, in-person over the shoulder support sites across the globe, virtual support through MicrosoftTeams channel, a comprehensive user manual, a constantly updated frequently asked questions database, and 24/7 technical support help desk.

Admiral FRANCHETTI. The Navy encountered inefficient processing of Sailor Personnel and Pay (Pers/Pay) transactions along with delivery of these service to the Fleet due to a slower than anticipated transition out of legacy information technology (IT) systems, premature manpower reductions across the Pers/Pay network, and inconsistent Command Pay and Personnel Administrator (CPPA) training.

MyNavy Career Center (MNCC) was established in September 2021 with the mission of addressing Human Resource service delivery to provide sailors the service they expect and deserve. Shifting high volume transactional work into six locations under the Transaction Service Center (TSC) construct delivers standardized processing and streamlines more timely accurate payments. Further consolidation and establishment of 13 Regional Support Centers provides assistance for Pers/Pay matters, CPPA training, and supports special circumstances like pre-deployment briefings, home port changes, and passport services.

The formation of MNCC and the realignment of the old Personnel Support Detachments into the TSCs have resulted in tangible achievements. Timelines are improving and most meet the Department of Defense timeliness standards. MNCC is completing all travel pay within 30 days of receiving the transaction and completing all separation and retirement DD–214s that are submitted at least 60 days prior to the start of the Member's terminal leave as outlined in Military Personnel Manual 1900–015. MNCC is working toward reducing these processing times even further to better meet sailors' needs.

For the first time in Navy history, the MNCC team and the Fleet have the ability to track the time from when a sailor originates a claim through the entire Pers/Pay pipeline until they have received the payment by using the CPPA Dashboard Authoritative Data Environment.

MNCC also coordinated with the Defense Financial Accounting Service to develop an enhanced Unit Commander's Financial Report that offers individual commands

with increased visibility and transparency of monthly pay and entitlements for every sailor.

General SMITH. The Marine Corps remains well-positioned to continue to reliably provide accurate and timely military pay and travel support to our servicemembers and families. Our Integrated Pay and Personnel System, known as the Marine Corps Total Force System, is flexible, agile, and able to effectively implement new bonus and retention programs. The Defense Finance and Accounting Service performance metrics show that the Marine Corps leads the DOD in both timeliness and accuracy of Military Pay and Travel transactions year over year. We are confident in our ability to maintain military pay and travel service while simultaneously introducing new enhancements as mandated by changes to law, policy, or regulations. That said, we require predictable resourcing to upgrade our hardware and related systems to ensure that they are secure and reliable moving forward.

General ALLVIN and General THOMPSON. We acknowledge that management of the military and civilian personnel system is a complex endeavor, but the DAF is absolutely committed to ensuring that our Human Resources IT enterprise is capable of supporting our personnel and their families for now and for the future.

Our Human Resources specialists continue to work tirelessly to support and pay airmen and guardians timely and accurately. We routinely assess human capital programs through our inspection program and conduct audits and analyses of frequency and types of pay issues. For example, an audit on the use of the leave request software for the new leave types is in progress by AF/A1PA; a Basic Needs Allowance (BNA) audit is planned for fiscal year 2024 through the Air Force Audit Agency. Similar audits and inspections occur within each H.R. program to assess personnel, organizations, leadership, and resources. Similarly, the Air Force actively monitors the case management system to assess pay which historically impact less than 2 percent of our personnel. OSD pay timeliness goal is 97 percent, and the DAF is at ?96 percent, so we are focused on improving to meet and exceed DOD standards.

Systems wise, we have recently successfully implemented the Basic Needs Allowance, Military Parental Leave, and Bereavement Leave implementation almost immediately upon the release of OSD's guidance. Our organizations are also focused on ensuring proper pay and support for our servicemembers. The Air Force Personnel and Pay (PersPay) Council meets monthly with Personnel, Financial Management, Major Command and Field Command representatives to identify pay issues and trends and discuss initiatives to resolve Total Force pay issues; the PersPay council has a sub-working group which meets with the Major Command and Field Command functional representatives monthly to focus on aged cases, root cause analysis, and streamline processes. Headquarters financial management personnel visit Major Commands and Field Commands to work hand-in-hand with onsite team members to address challenging pay issues and train to prevent future issues; finally, we realigned the Military Pay operations from DFAS to the Air Force in October 2021 to allow us to work these pay issues directly as a Service.

We recognize that additional work needs to be done to modernize our pay system and for the future, and we anticipate developing the introduction of the Air Force Integrated Personnel and Pay System (AFIPPS), which will help us improve our pay timeliness and reduce the errors impacting our members.

28. Senator DUCKWORTH. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, can you share timelines, plans, and funding levels for any updates to human resources software?

General GEORGE. Work will continue to expand the IPPS-A functionality and add additional capability through a series of improvements out to 2030 and beyond. The Army's H.R. Information Technology modernization efforts support a talent management system designed to engage with and retain the personnel essential to sustaining the all-volunteer-force. Going forward, IPPS-A will integrate a Total Army (AC, USAR, and ARNG) pay solution focusing on leveraging the full potential of modern software. This will enable the Army to obtain an audit opinion on the Army's largest account (MILPAY). The updated architecture will enable flexibility for future enhancements and compliance with frequently changing law, policy, and regulation while minimizing maintenance and support costs.

In the last 4 months IPPS-A received feedback from industry on multiple requests for information concerning continued modernization of both H.R. and pay functionality in IPPS–A. This insight will drive future capabilities for new development and award of a capabilities support contract. The Army anticipates awarding the capability support contract in the next 9 to 12 months.

Admiral FRANCHETTI. A modernized MyNavy H.R. IT system will drive sustained Fleet readiness. The Navy is tracking 59 major H.R. systems. The transformation

efforts to date have enabled the Service to transfer capability and to sunset 19 legacy systems. The Fiscal Year 2024 President's Budget request is $420 million. This includes $282 million in Operation and Maintenance, and $138 million in Research, Development, Test and Evaluation.

Since 2019, Navy has been transforming from legacy Manpower, Personnel & Training systems to a modernized MyNavy Human Resource (HR) enterprise that provides improved service delivery to all Active component / Reserve component (AC/RC) sailors, their families and future recruits. As part of this transformation, the Navy is modernizing its H.R. software to provide a MyNavy H.R. System to enhance Fleet readiness, reduce cost, drive data-informed workforce decisionmaking, and change how human resources services are offered. The transformed MyNavy H.R. System includes one modernized system that consists of five interlocking business process improvement and IT modernization lines of effort.

General SMITH. The Marine Corps plans to modernize its human resources information technology landscape through a methodology of continuous iteration and delivery. In fiscal year 2023, we will deliver the inaugural iteration of our Talent Management Engagement Platform to help the Corps match the right marine, with the right job, at the right time to deliver the best outcome for the individual and the service. Concurrently, we are piloting machine learning software platforms to build predictive models that use data to drive retention, accession, staffing, and other human capital management outcomes.

In fiscal year 2024, the Marine Corps will invest in a prototype to automate the reenlistment process. This marks the beginning of our efforts to wholistically digitize and automate our human resource development process and provide more agency and transparency to marines and their families.

The Marine Corps will use these near-term efforts to help refine our fiscal year 2025 to fiscal year 2029 investments. These investments will be used to deliver human resource solutions that enable marines to manage their human resource needs independently and transparently. Our goal is to build a device-agnostic, data driven, and dynamic human capital management solution that meets the evolving needs of the Marine Corps' talent-based workforce.

General ALLVIN and General THOMPSON. The Air Force has targeted two major software platforms to support airmen and guardian basic pay, leave, and permanent change of station (PCS) functions: Air Force Integrated Personnel and Pay System (AFIPPS) with a go-live set for January 2025 will modernize Air Force and Space Force pay to provide a full pay lifecycle to the airmen and guardians. AFIPPS is funded for $38.6 million in fiscal year 2023.

The Air Force MyVector platform is the target platform for all military assignments and will be our "one-stop-shop" for Total Force airmen and guardians. To date, we've migrated officer assignments into the Talent Marketplace application within MyVector. For our enlisted force, we've migrated special assignments, overseas jobs, Hot Jobs, and 365 Extended Deployments, and this summer, the Enlisted Quarterly Assignments list (EQUAL) will migrate to Talent Marketplace; we target the remainder of enlisted assignment activities to migrate in fiscal year 2024. MyVector is funded for $21.3 million in fiscal year 2023.

29. Senator DUCKWORTH. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, can you describe any other efforts underway to ensure service-members of all ranks have no pay, leave, PCS issues in the very near future?

General GEORGE. The IPPS–A now provides PCS orders for servicemembers. These PCS orders look different than legacy orders, and in order to address this concern the IPPS–A office continues to work with key stakeholders at HRC, DFAS, IMCOM and USAFMCOM to message appropriate organizations on the changes. The IPPS–A team and these same stakeholders work together to address any concerns to ensure servicemembers receive the correct PCS travel entitlements. The IPPS–A team continues to lead weekly sessions with organizations that touch the PCS process to synchronize updated guidance for the new environment and identify where system modifications are required.

IPPS–A is currently looking at modern pay solutions for integration with the existing H.R. baseline. Under the legacy business process, there are thousands of manual transactions that occur in the Defense Joint Military-pay System resulting in significant overhead and introducing opportunities for human error. Leveraging emerging technology, the future pay solution that is automatically triggered by H.R. transactions will streamline and automate functionality. The pay solution will also provide a guided self-service portal and empower servicemembers to prevent pay issues. Leveraging a modern pay solution will greatly reduce the opportunity for payroll errors and provide transparency and visibility to servicemembers.

Admiral FRANCHETTI. MyNavy Career Center (MNCC) recently transformed the legacy, decentralized Personnel Support Detachment (PSD) model of 27 locations to align around the work and eliminate variability. It now consists of a Human Resources Service Center (HRSC) with call center locations in Millington, TN and Little Creek, VA; 6 Transaction Service Centers (TSC); a Travel Processing Center (TPC) in Millington; and 13 Regional Support Centers (RSC) to improve efficiency, accuracy, and training.

Each TSC functions as a Center of Excellence (COE) for a specific major transaction type and is led by an O–5 or above commanding officer for accountability, transparency, responsiveness and to uphold a higher standard for Sailor Pay. RSCs are designed as the principal point of contact for leadership teams who are working through personnel and pay issues and to train Command Pay and Personnel Administrators (CPPAs).

HRSC operates 24/7/365 and provides a wide range of assistance to sailors and their families. HRSC provides up-to-date information and resolves issues at the Tier 1 level. HRSC conducts "warm handoffs" to subject matter experts in our TSCs and one TPC if the situation requires action beyond the authority of HRSC agents.

Additionally, the MNCC HRSC is a transactional call center that operates all year round to provide a wide range of assistance to sailors and their families who in the process of a Permanent Change of Station (PCS). HRSC utilizes Knowledge Articles (KA) to provide up-to-date information on topics about which customers may inquire and strives to resolve issues at the Tier 1 level to the maximum extent possible. HRSC conducts "warm handoffs" to external subject matter experts if the situation requires action beyond the authority of HRSC agents. All HRSC general floor agents are trained to assist members executing a PCS move, and a special section has been designated to help with critical issues.

The MNCC HRSC continues to adjust procedures and update KAs to appropriately handle PCS-related calls. HRSC also conducts regular training sessions and schedules team discussions to review actions taken, deliberate areas upon which to improve, and collect lessons learned of special cases. HRSC remains committed to working with all stakeholders to ensure that the needs of the sailors and their families are a priority and that they have an incident-free PCS.

General SMITH. The Marine Corps has a mature, fully operational Integrated Personnel and Pay System (IPPS). Our core system contains over 16,000 business rules that ensure accurate and timely pay, travel, and leave transactions. Our core system continuously evolves with emerging human resource policies and processes with a focus on data quality and auditability. We exploit the full capability of the system by leveraging emerging technologies to virtually eliminate manual human resource processes. Over the last few years, we have created smart transactions to reduce keystrokes to further reduce avoidable errors. We are working on automating the Permanent Change of Station (PCS) end-to-end process to allow each Marine to independently complete the PCS process electronically. Concurrently, we are modernizing our systems and processes without jeopardizing the core capabilities. Continued support from Congress is essential to maintain this effort.

General ALLVIN and General THOMPSON. The Department is firmly focused on developing a modern and agile pay system to replace outdated systems that cannot effectively manage our personnel pay. The Air Force Integrated Personnel and Pay System, (AFIPPS) will streamline personnel and pay functions, which are highly disaggregated, into a single IT system, affording efficiencies not possible using current systems. In addition, AFIPPS will have more robust audit, reporting, and analytic capabilities, allowing pay specialists to identify military pay issues earlier and expedite resolution while maintaining accurate and timely pay. AFIPPS is scheduled to Go-Live in January 2025.

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## QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

### ARMY WATERCRAFT

30. Senator SULLIVAN. General George, the Army is close to receiving its first Maneuver Support Vessel (Light) (MSV(L)) to replace its Vietnam-era LCM–8s. It is shaping requirements for a Maneuver Support Vessel (Heavy) (MSV(H)), which may replace the existing *Besson*-class Logistics Support Vessels. What are the current Army watercraft readiness rates, by type?

General GEORGE. The Army Watercraft fleet is currently at an overall 41 percent operational readiness (OR) rate. This percentage includes 11 percent of the fleet currently undergoing On Condition Cyclic Maintenance (OCCM) and 9 percent undergoing Service Life Extension Program (SLEP) upgrades. The maximum achievable

OR rate for all classes of vessels is 75 percent based on Fleet Density, and Statutory Cyclic maintenance requirements.

The current and forecasted OR rate by major systems is as follows:

- The Logistical Support Vessels (LSV) OR rate is 25 percent and projected to increase to 62.5 percent by 4th quarter fiscal year 2023.
- The Landing Craft Utility (LCU) OR rate is 35 percent and projected to increase to 47 percent by 4th quarter fiscal year 2023, and 52 percent by 2d quarter fiscal year 2024.
- The Modular Causeway System OR rate is 46 percent. This system is in limited use due to Technical Manuals (TM) not being fielded post Service Life Extension Program (SLEP). The 10 level TM is projected for release November 2023, and 23&P TM is projected December 2024. The fielding of both manuals will allow units to fully utilize equipment without limitations.

To mitigate the shortfalls of the current fleet, the Army is establishing an Army Watercraft Enterprise governance structure to serve as a formal mechanism for oversight and synchronization of fleet maintenance and readiness management. The Army anticipates increasing prioritization for depot-level maintenance funding across the FYDP.

31. Senator SULLIVAN. General George and General Smith, the Maneuver Support Vessel (Heavy) and the Navy's Landing Ship Medium (LSM) seem to have similar dimensions and capabilities. What coordination has occurred between the Army, Navy, and Marine Corps about watercraft development, specifically the MSV(H) and the LSM?

General GEORGE. The Army is still working through its requirements for the Maneuver Support Vessel (Heavy) (MSV(H)). Issues regarding the vessel's size, speed, and other capabilities are still under discussion. As part of those efforts, coordination between the Army, Navy, and Marine Corps (USMC) started in 2021 and is ongoing. These meetings are frequent and well-attended by all parties. The Army and Navy have a bi-weekly working group to include the USMC requirements team. There are working groups with the USMC's experimentation group which has ongoing efforts pertinent to both MSV(H) and Landing Ship Medium (LSM). The Army has leveraged lessons learned and market research conducted for the LSM.

General SMITH. The Navy and Marine Corps team continues to collaborate with the Army regarding its Army Watercraft Systems and how it plans to evolve to become more operationally relevant in support of Multi-Domain Operations. The Marine Corps will use littoral maneuver, mobility and sustainment platforms to support Distributed Maritime Operations (DMO), Expeditionary Advanced Base Operations (EABO), and other operations in littoral environments. The Army will use its Army Watercraft to support its Multi-domain Task Forces. The Navy, who own the requirements and resources for the LSM, and Army meet bi-weekly to find synergies in programmatic and in requirements. Appropriate Marine Corps staff participate in these meetings to assist in informing the necessary requirements for littoral mobility. The purpose-built Medium Landing Ship (LSM) will be a key enabler of the Marine Corps' EABO concept. This concept involves adaptable forward-bases which enable U.S. Naval and Joint forces to persist, partner, and operate within range of adversary long-range weapons. LSM supports the Joint Force by operating in direct support of littoral expeditionary forces or operating independently and in collaboration with a Navy task group as required in a naval campaign.

LSM will be a beach-able platform capable of operating over intra-theater ranges in the Indo-Pacific region. It will provide distributed maneuver, mobility, and logistical support for littoral expeditionary forces such as Marine Littoral Regiments in contested littoral environments as described in naval concepts. It will fill the gap in capability between the U.S. Navy's globally deployable, long-duration, multipurpose amphibious warfare ships and smaller complementary landing craft to support regional engagement logistics to the Combat Logistics Force (CLF), and maneuver of forces that provide power projection in the Operational Environment.

Army watercrafts provide a robust capability for material transport for the Joint Force. The Maneuver Support Vessel (Heavy) will be capable of operating at intra-theater ranges and is a replacement for its logistics support vessels (LSV) that are currently operating in support COCOM requirements, but it is not currently able to beach for offload. Both departments will continue to collaborate on capabilities to add the needed littoral maneuver and sustainment capacity to the Joint Force.

32. Senator SULLIVAN. General George, why is the Army developing new watercraft?

General GEORGE. The Army is developing new watercraft because the current fleet lacks the capability and capacity needed to meet Army maritime requirements as outlined in U.S.C. Title 10, DODI 5100.01, National Defense Strategy, and Joint and Army Doctrine. In both the Active component and prepositioned stocks, there are only 70 total systems in the Army today. Of those 70 systems, 38 are landing craft that do not possess the speed, range or capacity required. In any future U.S. Indo-Pacific Command (USINDOPACOM) operation, the Army will play a pivotal maritime role in enabling Joint Force operational reach, empowering freedom of action, and prolonging endurance in an multidomain operation, large-scale combat environment.

33. Senator SULLIVAN. General George, concerns have been raised about the survivability of the proposed Landing Ship Medium. Are you aware of similar concerns about the MSV(L), MSV(H), and the existing logistics support vehicles?

General GEORGE. The Army acknowledges the current gap in the Logistics Support Vessel's ability to defend against level two threats. As a result, the MSV(L) and MSV(H) program development deliberately considered the need to increase vessel survivability and self-protection against level two threats, to include vessel signature. The concept of employment for Army Watercraft Systems (AWS) leverage joint force support to combat higher level threats.

ARMY RECRUITING

34. Senator SULLIVAN. General George, you testified before the House Armed Services Committee 2 weeks ago that the Army would miss its recruiting goal of 65,000 by 10,000 soldiers. You pointed to a smaller number of Americans being qualified to serve and fewer being interested in serving. The Army deserves credit for creating the Future Soldier Prep Course in July 2022, which has successfully brought 5,614 recruits willing to serve up to the physical and aptitude standards necessary to do so. Even with that program, the Army is far from reaching its recruitment goal again this year. How is the Army approaching the linked issues of being qualified to serve and inclined to serve?

General GEORGE. The Army is approaching this issue on all fronts by remaining focused on keeping the quality bar high while encouraging those who desire to serve to raise their qualifications to meet and even exceed that standard with initiatives like the Future Soldier Prep Course for academic skill development and the Army Assessment of Recruit Motivation and Strength Program (ARMS 2.0) for physical fitness improvement. In coordination with the other Services, the Army has championed Office of the Secretary of Defense (OSD) to update rules on pre-existing conditions based on what the Army sees across the U.S. to determine if old practices still apply and are relevant in assessing the fitness of future applicants.

The Army is changing the messaging of the Army story through "Possibilities," which is new advertising campaign that reinvents the Army's "Be All You Can Be" mantra, introducing the Army to a new generation and better connecting with American youth through effective outreach to communities critical to the Army's success.

35. Senator SULLIVAN. General George, who was the target audience for the May 4, 2021 commercial "Emma" from the Calling Series?

General GEORGE. The target audience for "The Calling" campaign was youth aged 17 to 24, "Gen Z." "The Calling" included a total of five story-telling videos as a series on the GoArmy YouTube channel.

36. Senator SULLIVAN. General George, did Senior Army uniformed leadership, specifically you and General McConville, review and approve this commercial before it was released?

General GEORGE. The Chief of Staff of the Army was not aware of and did not approve of the commercial prior to its release. I was not in position as the Vice Chief of Staff of the Army at that time, and was therefore not aware of the commercial prior to its release.

AIR FORCE MISSION READINESS

37. Senator SULLIVAN. General Allvin, last November GAO released a study which found that the DOD spends tens of billions of dollars annually to sustain its aircraft fleets but only four out of the 49 types of military aircraft reviewed met annual mission readiness goals from fiscal year 2011 through fiscal year 2021. A large proportion of the aircraft that did not make mission readiness goals were United States Air Force fighters including the F–15C, F–16, F–35, and F–22. Further out of all

186 F–22 fighters, only 93 were found to be mission ready. The F–22 performs a critical homeland defense mission and is essential to any conflict with China, Russia, Iran, and North Korea. What near-term steps is the Air Force taking to ensure increased mission readiness in its fighter fleet?

General ALLVIN. Headquarters Air Force has been prohibited from divesting our oldest and least capable aircraft. The DAF continues to seek opportunities to divest capabilities that are not consistent with pacing challenges and focus on the key capabilities required to execute the NDS.

Many platforms in the inventory have exceeded their intended service lives or require outsized resourcing support unjustified by their impacts to capabilities against peer adversaries. Additionally, Diminishing Manufacturing Sources and Material Shortages (DMSMS); many important aircraft parts are no longer produced and have no replacement part that will fit the aircraft without major modification, so the Air Force is forced to manually manufacture parts, which is expensive, time-consuming and short-lived.

This budget cycle focused on the DAFs seven Operational Imperatives which address critical warfighting capability gaps that are necessary to deter and, if necessary, defeat Chinese aggression. Not addressing these gaps today drastically increases the risk to future warfighters. While there is still work to be done, the fiscal year 2024 President's Budget makes great strides to place the Air Force on a sustainable path toward modernization by divesting the most expensive USAF platforms that do not significantly contribute to deterring or combating the pacing threat.

Headquarters Air Force is spearheading several initiatives to overcome compounding risks of sustainment challenges that impact mission readiness such as aging aircraft, under-experienced workforces, and adequate levels of Weapon System Sustainment funding.

Condition Based Maintenance (CBM+), Advanced Manufacturing, and Ready Aircraft Metric (RAM) are initiatives intended to target these sustainment challenges.

CBM+ turns costly unscheduled maintenance into more predictable planned activities—saving time, increasing equipment availability, and improving mission readiness. The USAF CBM+ program currently consists of 16 platforms and monitors a fleet of over 3,000 aircraft which includes legacy and fifth generation fighters and has executed 1,500 predictive maintenance component replacements prior to failure.

Advanced Manufacturing empowers supply chain management across the DAF to ensure continuous warfighter advantage. As of January 2023, the Advanced Manufacturing program office has provided over 4,600 parts across 29 supported platforms with a projected return on investment of $78 million.

RAM is an effort to shift aircraft maintenance to a more proactive model. Legacy readiness metrics such as MC rate are point-in-time, disincentivizing proactive maintenance. The forward-looking RAM family of metrics will assist frontline maintainers in prioritizing and reporting sustainable readiness, improving overall mission readiness while providing leaders a quantitative measure of current readiness for near-future events, giving time to address readiness shortfalls before they become critical.

DEPARTMENT OF AIR FORCE RECRUITING

38. Senator SULLIVAN. General Allvin and General Thompson, the Department of the Air Force has two very different recruiting stories this year. The Air Force is set to fall short of recruiting goals by 10 percent while the Space Force continues to turn away potential candidates for lack of openings. I understand the size discrepancy and mission variance between both branches but I think there is something to be learned here about creating an effective culture and finding the right people which does not have to do with decreasing standards as the Air Force has recently done. What do you think the Air Force can learn from Space Force's recruiting successes?

General ALLVIN and General THOMPSON. The Air Force Recruiting Service recruits for both services. Furthermore, a symbiotic relationship exists between the Air Force and the Space Force. When recruiting is strong for the Air Force, it benefits both services. While the Space Force recruiting requirements are small (?500); attracting the top-quality candidates the Space Force requires will become increasingly challenging, into the future.

Thanks to Congress, we have seen a significant increase to our marketing budget for this year ($150 million) and we urge continued support in the future. While we have multiple initiatives underway to increase both the eligibility and propensity to serve, which is beginning to produce some results, we also look to partner with Con-

gress to reinforce the value and benefit of Service and to continue our efforts to highlight Service opportunities to the American people.

39. Senator SULLIVAN. General Allvin, during our hearing you mentioned the Air Force had begun falling behind on its recruiting goals. You said the Air Force is now adhering to DOD-wide entry requirements whereas previously it had more stringent requirements. What are the differences between the old and new Air Force entry requirements?

General ALLVIN. The Department has stood up a Cross-Functional Team (CFT) to lead efforts in the recruiting arena. In line with our comprehensive review of the recruiting enterprise, a major focus has been removing artificial barriers to entry. In line with that, we adjusted previous policies where we did not see relative value, to bring them in line with DOD and the other Services. One specific area was body fat measurements (BFM). DOD policy authorizes a max BFM of 26 percent for males and 36 percent for females while DAF policy only allowed 20 percent and 28 percent respectively. Studies based upon implementation by the other Services—as well as and our own review—indicated that there is no appreciable difference in health and retention at the higher level, while opening the door to thousands of potential new recruits. We will track these individuals over the course of their first enlistment to identify any potential trends and align our future efforts accordingly.

Additionally, we have undertaken numerous other initiatives to increase accession and retention while not impacting quality, all within, or in concert with DOD policy. These initiatives include a modernizing our accessions Strength Assessment Test, authorizing certain Hand and Neck Tattoos, and Medical Standards Waivers (atopic dermatitis and astigmatism). The CFT continues to explore and work other initiatives that will also positively impact fiscal year 2023 and out year recruiting and accessions opportunities all while maintaining our high standards for service.

MARINE CORPS LITTORAL REGIMENTS

40. Senator SULLIVAN. General Smith, as we discussed during the hearing, in January the Center for Strategic and International Studies released a war game focused on a fight with the People's Republic of China (PRC) in defense of Taiwan, which found multiple launch rockets (MLRs) to be of limited value. You stated the Marine Corps had conducted 14 of its own studies, two of which were unclassified, which came to different conclusions on the effectiveness to MLRs. Please provide the Senate Armed Services Committee copies of these classified and unclassified wargames to review.

General SMITH. The Marine Corps has approached modernization and specifically the employment of the Marine Littoral Regiment (MLR) within the Joint Stand in Force through an iterative Campaign of Learning. This campaign integrates activities across multiple pillars to include studies and analysis, wargaming, and experimentation. There are currently unclassified and classified SECRET studies, wargame reports, and experimentation reports that have been produced that either identified the need for modernization, explored future concepts of employment or have spurred future Campaign of Learning activities to aid Force Design decisions. The below reports can be made available to the Senate Armed Services Committee upon request.

- MAGTF Warrior 17, 12–16 Jun 2017 (pre-FD 2030) o Purpose: Define Marine Corps capabilities required to conduct sea control and power projection within a joint campaign against a peer adversary.
  - o Reports available: Secret final report.
- Expeditionary Warrior 18, 2–6 April 2018 (pre-FD 2030) o Purpose: Examine operational level logistics support to Marine expeditionary forces in the western Pacific in an anti-access/area denial environment.
  - o Reports available: Secret final report.
- Naval Services Game 18, 9–12 July 2018 (pre-FD 2030) o Purpose: Explore command relationships, tasking, capabilities, and employment implications of Marine Corps and Navy forces task-organized for littoral combat across the full range of naval missions.
  - o Reports available: Secret final report.
- MAGTF Warrior 18, 17–21 Sep 2018 (pre-FD 2030)
  - o Purpose: Inform future logistics operating concepts of support and how the MEF will be organized, trained, and equipped to support and sustain operations as part of an inside force.
  - o Reports available: Secret final report.

- POM22, 7–11 Oct 2019 o Purpose: Identify capability roadmap changes required to support Force Design 2030.
  - o Reports available: Unclassified summary.
- Strategy 2030, 16–17 Oct 2019 o Purpose: Inform CMC Force Design construct and identify potential service-level risks associated with directed force reductions and reorganizations.
  - o Reports available: Unclassified summary.
- Pacific Surprise, 21–31 Oct 2019 (MLR-focused)
  - o Purpose: Operational level test of Force Design force in context of extended joint, maritime campaign against the pacing threat.
  - o Reports available: Unclassified summary, Secret final report.
- Ghost Fleet 1, 14–17 Jan 2020 (MLR-focused)
  - o Purpose: Examine the extent to which proposed FD 2030 MLR and MEU can support a given sea denial mission within the context of JFOS 2.2
  - o Reports available: Unclassified summary, Secret final report.
- Black Sheep Squadron, 31 Dec 2019–28 Jan 2020
  - o Purpose: Explore concepts of employment and capabilities for manned and unmanned Marine Corps aviation assets to inform future force design and development.
  - o Reports available: Unclassified summary.
- Ender's Shadow, 15 April and 21 Aug 2020 (MLR-focused)
  - o Purpose: Inform FD 2030 decisions and the development of the Tentative Manual for Expeditionary Advanced Base Operations (TM-EABO) through tactical employment of and MLR capabilities as part of a joint maritime campaign conducted in the SCS.
  - o Reports available: Unclassified summary, two Secret final reports.
- Ghost Fleet 2, 20–24 July 2020
  - o Purpose: Examine the value of proposed sustainment vessels and existing Military Sealift Command ships in sustaining the Joint Force during a joint maritime campaign.
  - o Reports available: Unclassified summary.
- Provident Forge, 23 September–6 October 2020
  - o Purpose: Evaluate the FD 2030 infantry battalion against selected mission requirements to assess capability when executing global crisis response and contingency missions.
  - o Reports available: Unclassified summary, Secret final report.
- Naval Services Game 20, 18–23 October 2020
  - o Purpose: Explore fleet integration of Navy and Marine Corps force design initiatives to inform command and control relationships to fight effectively.
  - o Reports available: Unclassified summary, Secret final report.
- Crown Jewel, 2 Feb–23 Apr 2021
  - o Purpose: Evaluate proposed FD2030 MEU construct and concept of employment against selected missions to gauge the formation's ability to execute proposed mission essential tasks.
  - o Reports available: Unclassified summary, Secret final report.
- ENIGMA, 21 February–18 April 2021
  - o Purpose: Explore design and development considerations of Marine Information Detachments in support of forces operating in the information environment.
  - o Reports available: Unclassified summary, Secret final report.
- Stand-in Force, 29 Mar –2 Apr 2021 (MLR-focused)
  - o Purpose: Inform design of a Stand-in Force that is optimized to conduct reconnaissance and counter-reconnaissance as part of a Joint Force campaign in SCS that can transition seamlessly between competition and conflict.
  - o Reports available: Unclassified summary.
- Ender's Rise, three-game series between February–25 July 2021 (MLR-focused)
  - o Purpose: Inform revisions and enhancements to the TM-EABO and recommend DOTMLPF-P actions to support organizing, training, and equipping Marine Littoral Regiments and Littoral Maneuver Squadrons in preparation in competition.
  - o Reports available: Unclassified summary, Secret "quicklook" report.
- Littoral Logistics (Expeditionary Warrior 21), 9–13 August 2021
  - o Purpose: Inform the development of concepts required to posture and sustain a naval force-in-readiness executing theater-level expeditionary advanced base operations in a contested environment.

- o Reports available: Unclassified summary, Secret final report.
- Littoral Maneuver, 30 Aug–3 Sep 2021
  - o Purpose: Develop and assess boat capabilities and concepts of employment in order to inform requirements documents.
  - o Reports available: Unclassified summary, Secret final report.
- Ground Warrior 22, 7 October 2021–17 February 2022
  - o Purpose: Refine and clarify the concept of employment for, and examine the composition of, the FD 2030 infantry battalion set against global mission requirements.
  - o Reports available: Unclassified summary, secret "quicklook" report.
- Aviation Wargame, 13–17 Dec 2021
  - o Purpose: Review and refine Marine aviation requirements in support of the Stand-in Force of 2030 and beyond.
  - o Reports available: Unclassified summary, TS/SCI final report.
- Expeditionary Warrior 22.1, 7–11 March 2022 (MLR-related)
  - o Purpose: Explore Marine Corps means of contributing to naval, joint, and national objectives in competition below the threshold of major armed combat.
  - o Reports available: Unclassified summary, Secret "quicklook" report.
- Expeditionary Warrior 22.2 / Global 15, 16–20 May 2022 (MLR-related)
  - o Purpose: Examine Navy and Marine Corps afloat and ashore integration opportunities which enable a Joint Task Force scheme of maneuver and scheme of fires in a high-end conflict against a peer threat.
  - o Reports available: Unclassified summary, TS/SCI report (under classification review)
- MLR Game 2022 Agile Competition/Agile Response (collaboration w/SAW), 23–27 May 2022 (MLR-focused)
  - o Purpose: Assess concepts related to the employment of Stand-in Forces and the Marine Littoral Regiment at the operational level of war during transition from competition to conflict.
  - o Reports available: Unclassified final report published in United States Naval Institute journal Proceedings
- MLR Game 2023 (collaboration w/Krulak Center), 17 Jan and 24 Mar 2023, (MLR-focused)
  - o Purpose: Identify alternative COAs to the current Littoral Combat Team construct.
  - o Reports available: Secret
- Azure Dragon, 9–13 Jan 2023 (MLR-related)
  - o Purpose: Explore III MEF ability to transition from day-to-day operations to major armed combat operations and explore MEF Major Subordinate Commands' ability to serve as Naval Task Group Headquarters.
  - o Reports available: Secret "quicklook" report, Secret final report (final review).
- Ground Warrior 23, 13 Dec 22–6 Jan 23
  - o Purpose: Explore employment of the FD2030 infantry battalion in offensive operations and assess the sufficiency of the battalion's composition.
  - o Reports available: Secret final report (in review).
- Posture and Prepositioning in the Pacific, Ongoing, Projected Completion July 2023
  - o Purpose: Given the current threat and its capabilities, is the current prepositioning network suitable as it currently exists in the INDOPACOM AOR? What changes in the current prepositioning network do we have to make to best address the 2030 requirements and threats in INDOPACOM?
  - o Reports: Secret

41. Senator SULLIVAN. General Smith, during the hearing you stated the MLRs still have some advancing to do and some future pieces that needed to get added. Can you provide more detail and context about what the MLRs do not currently have that they will in the future?

General SMITH. The Marine Corps activated Hawaii based 3d MLR and will reach its initial operating capability (IOC) in the 4th quarter of fiscal year 2023. Activating and reaching IOC of our MLRs are heavily reliant on the ability to be appropriately resourced. Current planning envisions the Okinawa-based 12th MLR, and Guam-based 4th MLR to be similar positioned in fiscal year 2025 and fiscal year 2027, respectively.

The Marine Corps is fielding modernized capabilities to MLRs today. (21) Ground/Air Task-Oriented Radars (G/ATORs) were fielded across the fleet, to include 3d

MLR by the end of 2022, (29) will be fielded by the end of September 2023, and (57) will be in the fleet by the end of 2027. The initial increment Navy Marine Expeditionary Ship Interdiction Systems (NMESIS) will be deployed to outfit the Medium Range Missile Battery in 3d MLR in 4th quarter fiscal year 2023, providing 3d MLR with the capacity to begin exercising the capability to contribute to sea denial and control operations. (13) Marine Air Defense Integrated Systems (MADIS) will begin fielding in fiscal year 2024. (31) Network on the Move (NOTM) systems will be mounted onto ultra-light tactical vehicles (ULTVs), a portion of which will be fielded to the MLR. This system will provide threat informed enhanced multi-orbit satellite communications capabilities as well as Link 16 capabilities to support Joint Kill webs in a package that meets USMC organic lift requirements for the Stand In Force. NOTM ULTV is funded for procurement of 10 systems in fiscal year 2024 and 21 systems in fiscal year 2025. The MLR is currently equipped with Low Earth Orbit commercial terminals and conducting field user evaluations. These terminals will be replaced with militarized terminals being procured under the Wideband Satellite Communications program in fiscal year 2024 which offer enhanced resiliency. In fiscal year 2024, 104 of these terminals will be procured and 107 in fiscal year 2025 under the SCAR initiative.

However, the current programmatic timeline for the Medium Landing Ship (LSM) does not support delivery of the first (9) platforms to provide the Naval force with organic littoral mobility for one Marine Regiment until fiscal year 2033. To meet our current IOC timelines, the Marine Corps is investing in bridging solutions such as the Stern Landing Vessel (SLV) that will be delivered in Q2 fiscal year 2023 for experimentation. Additionally, the Marine Corps has sustained its approved acquisition objectives (AAO) for assault support aircraft to optimize modernization ISO future MLR mobility.

42. Senator SULLIVAN. General Smith and General George, both MLRs and Army Multi-Domain Task Forces (MDTF) seek to provide small, light, and mobile options to target ships and collect intelligence on the enemy with a strong emphasis on the PRC. What are the key differences between MLRs and MDTFs?

General SMITH. The Marine Corps' Marine Littoral Regiment (MLR) and the Army's Multi-Domain Task Force (MDTF) represent innovative and thoughtful approaches to compete and win on the modern battlefield, against peer adversaries. Both formations offer unique, yet complementary, capabilities that present multiple dilemmas for adversaries and generate options for the Joint Force commander in both competition and conflict. Currently, the Marine Corps and Army are working through complementary objectives between the MLR and MDTF. Marine and Army units just completed joint exercise Northern Edge (NE) in Alaska to experiment Joint Force sensor and kill web integration. The Marine Corps continues to integrate with MDTF units during experimentation exercises in Project Convergence focusing on interoperability of sensor networks focusing on connecting kill webs.

The MLR is designed specifically to operate in the littorals. Its mission is, as part of the Stand-in-Force, to disrupt the adversary in a contested littoral environment through reconnaissance, counter-reconnaissance, and sea denial operations. Additionally, the MLR operates below the threshold of armed violence by strengthening relationships with allies and partners, reassuring them of U.S. security commitments, and fostering access in times of crisis or conflict. It is designed to support the Joint Force in the contact and blunt layers of the Global Operating Model. In crisis, forward posture and access enables the MLR to hold adversary assets at risk, contribute to the Joint Forces' sea denial and sea control operations via organic lethality and the closing of joint kill webs, and provide other critical enabling actions to the naval and Joint Force. Finally, the MLR is purpose-built and designed to rapidly transition from competition, to conflict, and back to competition as escalatory or de-escalatory dynamics dictate.

The MLR is distinguished by its forward posture, its ability to rapidly deploy with organic Marine Corps and Navy assets, and its capabilities to persist within an adversary's weapons engagement zone. These capabilities are underpinned by naval concepts to include Littoral Operations in a Contested Environment, Distributed Maritime Operations, Expeditionary Advanced Base Operations, and the Concept for Stand-In Forces.

The MDTF provides complementary theater-level maneuver elements focused on anti-access/area denial (A2/AD) networks through the conduct of multi-domain operations (MDO). The MDTF does not generally possess organic mobility, rather it relies on strategic lift and commercial vessels for inter-theater mobility within a distributed maritime environment, such as the Indo-Pacific region.

In the Indo-Pacific region, a clear necessity exists for the MLR and the MDTF, particularly in time of conflict. Both units leverage a similar multi-domain ap-

proach, in some cases using like systems. However, the MLR has a unique mission requirement to operate forward postured in the Indo-Pacific region within a contested area. This necessitates balancing lethality with mobility—through lighter, expeditionary equipment and the employment of organic and Navy mobility assets. The expanse of USINDOPACOM and the combatant commander's need for forces make both units a priority for the theater.

General GEORGE. The United States Marine Corps' Marine Littoral Regiment (MLR) and the Army's Multi-Domain Task Force (MDTF) serve distinct purposes that drive unique capabilities in each organization. The primary difference between the MLR and the MDTF lies in the doctrinal purposes underpinning the two organizations. The MLR is designed to support Fleet Operations, working for the Maritime Component Commander to enable maritime control by providing a ground based anti-ship capability within a specific area of operations (AO). The MDTF enables joint operational maneuver by synchronizing kinetic and non-kinetic effects across all domains through the entire Joint Operational Area (JOA) for the Joint Force or Theater Commander. Ultimately, the MLR and MDTF are complimentary and mutually supporting formations.

43. Senator SULLIVAN. General Smith and General George, do you expect MLRs and MDTFs to conduct training together over the next year?

General SMITH. Yes, I do. Recently, the Marine Corps' 3d Marine Littoral Regiment (MLR) and the U.S. Army's 1st Multi Domain Task Force (MDTF) both supported exercise Balikatan 23 in May 2023 where both units supported the overall exercise and interacted to support training objectives. 3d MLR and both 1st and 3d MDTF have a good working relationship and there will be at least one more deliberate joint engagement with exercise Marine Aviation Support Activity (MASA) in July 2023. Additionally, 3d Marine Division is exploring interactions with 3d MDTF for an August exercise—Pololu Strike. To date, there is currently no plan for other concrete touchpoints for scheduled exercises, but exercise objectives will likely bring MLRs and MDTFs together. Future potential training opportunities include Force Design Integration Exercise (September 2023), Kamandag 7 (Oct 2023), Joint Pacific Multinational Readiness Center (November 2023), and Balikatan 24 (May 2024).

General GEORGE. Yes, recently one of the Army's MDTFs, working in conjunction with the 3d Marine Littoral Regiment, participated in an exercise where the MDTF developed targets for the joint force and used their capabilities to support maneuvering maritime assets. USINDOPACOM will conduct similar exercises in the future, which is why the Army has already dedicated two MDTFs to the Pacific Theater.

MARINE EXPEDITIONARY UNITS

44. Senator SULLIVAN. General Smith, based on the current amphibious ship readiness rates, do you anticipate any instances in fiscal year 2023 and fiscal year 2024 when a Marine Expeditionary Unit (MEU) will be ready to deploy but the Amphibious Readiness Group will not?

General SMITH. We experienced delays due to ship readiness for four of our last five MEU deployments. We currently project maintenance delays for our next two ARG/MEU deployments. One maintenance delay was so significant that the Marine Corps had to replace the MEU's Infantry Battalion, as many of the battalion's marines did not have enough time on contract to execute the entirety of the deployment.

45. Senator SULLIVAN. General Smith, hundreds of American citizens recently stranded in Sudan as fighting broke out between two armed factions of the military were not evacuated by the Marine Corps. Instead, those American citizens were evacuated on contracted buses on a 500 km journey from Khartoum to Port Sudan, where they boarded an auxiliary vessel and sailed to Saudi Arabia. No U.S. military forces provided a ground escort for the buses, although I understand armed intelligence, surveillance and reconnaissance (ISR) was overhead. This mission would be standard fare for an ARG/MEU but the Marine Corps did not participate in the evacuation. Why the Marine Corps not conduct a Noncombatant Evacuation Operation for American citizens in Sudan?

General SMITH. Geographic Combatant Commanders determine how best to employ their assigned or allocated forces. The Marine Corps provided security forces and aerial refueling capabilities in support of the NEO. However, at the time of the evacuation, there were no ARG/MEUs in the vicinity of Sudan. Both the 31st MEU and the 13th MEU were in INDOPACOM area of responsibility. 26th MEU was ashore at Camp Lejeune, North Carolina preparing for a summer 2023 deployment.

AMPHIBIOUS SHIP REQUIREMENTS

46. Senator SULLIVAN. Admiral Franchetti, during this year's Navy posture hearing, the Secretary of the Navy promised he would came back to the Senate Armed Services Committee with the Navy's plan to meet the 31 amphibious ship requirement. When will he deliver on this commitment to the Senate Armed Services Committee?

Admiral FRANCHETTI. The Navy delivered an updated Battle Force Ship Assessment & Requirement (BFSAR) report to Congress in June 2023 that reinforced the requirement for 31 Amphibious ships. The Navy and Marine Corps team are committed to this requirement and are currently working within the Department to help inform the fiscal year 2025 budget process.

47. Senator SULLIVAN. Admiral Franchetti, during my line of questioning to you on the 31 amphibious ship requirement you referred to the Navy conducting another study on the subject. What new information is this study considering that previous studies did not consider?

Admiral FRANCHETTI. The Navy delivered the updated Battle Force Ship Assessment Requirements Report (BFSAR) in June 2023. This report continued to validate the requirement for 31 amphibious ships. The OSD led LPD 17 Flt II study is assessing the cost and capabilities required for the next-generation medium deck amphibious ship to inform the procurement strategy and way ahead for this platform. I would have to defer to OSD on the delivery of this report. However, the Navy and Marine Corps team are committed to a force of 31 amphibious ships and are working within the Department to help inform the fiscal year 2025 budget process.

48. Senator SULLIVAN. Admiral Franchetti, Congress already studied the requirement for amphibious ships, the results of which were passed into law in the fiscal year 2023 National Defense Authorization Act (NDAA). If Congress and the Senate Armed Services Committee studied the issue in depth and concluded in law that we need 31 amphibious ships, why do we need more studies on this requirement?

Admiral FRANCHETTI. It is my understanding the OSD directed study was focused on assessing the cost and capabilities required for the next-generation medium deck amphibious ship to inform the procurement strategy and way ahead for this platform, to include any requirements that may have changed as a result of new constructs and/or based on changes in the strategic environment. The recent Battle Force Ship Assessment and Requirement Report (BFSAR) delivered to Congress in June 2023 reinforced the validated requirement of 31 Amphibious ships as contained in the law.

49. Senator SULLIVAN. Admiral Franchetti, who requested this new amphibious ship study and when did they request it?

Admiral FRANCHETTI. The Office of the Secretary of Defense Cost Assessment and Program Evaluation office (OSD CAPE) requested the LPD 17 Flt II amphibious ship cost/capability study in January 2023.

50. Senator SULLIVAN. Admiral Franchetti, during the hearing you mentioned the Navy was conducting a strategic laydown review. What topics is this review covering?

Admiral FRANCHETTI. The Navy's annual Strategic Laydown and Dispersal (SLD) process reviews the laydown of both existing and future capabilities of the Navy's operating forces and provides strategic rationale, guidance, and direction for approving and implementing individual homeport, home base, and hub shifts. The SLD process can also be leveraged to analyze shore support for forward deployed and rotational forces assigned in support of combatant command requirements.

51. Senator SULLIVAN. Admiral Franchetti, when will the Navy strategic laydown review be delivered to the Senate Armed Services Committee?

Admiral FRANCHETTI. The 2023 Strategic Laydown and Dispersal (SLD) Plan was delivered to Committee Staff of the Senate Armed Services Committee (SASC), on 27 June 2023. We would be happy to brief you and your staff on the plan.

52. Senator SULLIVAN. Admiral Franchetti, do Marine Corps leaders have input on the Navy's strategic laydown review?

Admiral FRANCHETTI. Yes. The Marine Corps briefs the Navy's Strategic Laydown and Dispersal (SLD) working group on Marine Corps concepts and basing requirements to facilitate awareness between the Navy and Marine Corps.

53. Senator SULLIVAN. Admiral Franchetti, why did the Navy prioritize completing its Climate Action Plan before its 30-year shipbuilding plan?

Admiral FRANCHETTI. The Department of the Navy works several efforts concurrently with subject matter experts relevant to each effort. Both the 30-Year Shipbuilding Plan and Climate Action Plan are priorities in the Department, and one was not prioritized over the other. The Climate Action Plan was released in 2022 prior to release of the Fiscal Year 2024 President's Budget. The fiscal year 2024 30-year shipbuilding plan is required to be aligned with the President's Budget, and was completed in conjunction with the release of the Fiscal Year 2024 President's Budget.

54. Senator SULLIVAN. Admiral Franchetti, is fighting climate change a higher Navy priority than building, procuring, and deploying U.S. warships?

Admiral FRANCHETTI. The Department of the Navy works several efforts concurrently. Given the operational environment that the Navy operates in around the globe, understanding the impact of climate change on operations is important in building, procuring, and deploying U.S. warships for the Navy. As the Vice Chief of Naval Operations, my focus is ensuring that we develop and sustain ready, combat credible forces capable of all-weather operations, while at the same time being mindful of actions required to mitigate the results of increasing sea level rise, extended fire seasons, or other weather-related events so we can continue to operate effectively.

55. Senator SULLIVAN. Admiral Franchetti, did the Navy complete its 30-year shipbuilding plan after the Fiscal Year 2023 NDAA was signed into law?

Admiral FRANCHETTI. Yes, the Navy completed the 30-year shipbuilding plan after the Fiscal Year 2023 NDAA was signed into law.

The Fiscal Year 2023 NDAA was signed into law December 23, 2022, the 30-year shipbuilding plan was signed by the Secretary of the Navy March 30, 2023 and approved by the Secretary of Defense on April 14, 2023.

56. Senator SULLIVAN. Admiral Franchetti, if the Navy completed its 30-year shipbuilding plan after the Fiscal Year 2023 NDAA was signed into law, why did the plan fail to maintain 31 amphibious ships as the Fiscal Year 2023 NDAA requires?

Admiral FRANCHETTI. The fiscal year 2024 30-year shipbuilding plan reflected a pause in LPD procurement while the DOD led cost and capability study was completed to assess if alternatives to medium deck amphibious ship were required. The analytic results will inform the fiscal year 2025 30-year shipbuilding plan. Concurrently, the Navy completed and updated Battle Force Ship Assessment and Requirement Report (BFSAR) that assessed force structures required to support the directed Defense Planning Scenarios. The assessment reinforced the validated requirement of 31 Amphibious ships as contained in the law.

MARINE CORPS AVIATION

57. Senator SULLIVAN. General Smith, during the hearing you stated the Marine Corps had provided the Commandant with the wrong number of aviation assets that would go into inventory management/storage over the course of the Program of Record. Can you provide my office with Program of Record timelines for each aircraft in the Marine Corps inventory, indicating how many aircraft have been/will be procured in each fiscal year of the Program of Record?

General SMITH. The Marine Corps POR is 420 for F–35 (353 F–35B and 67 F–35C); 200 for CH–53K; 360 for MV–22B (final procurement in fiscal year 2023); 349 for H–1 (189 AH–1Z and 160 UH–1Y, procurement completed in fiscal year 2019), 86 for KC–130J (final procurement in fiscal year 2024), and 20 for MQ–9A (final procurement in fiscal year 2024).

The following chart is the DON PB24 aircraft/UAS procurement Future Years Defense Program (FYDP) plan.

| Aircraft (QTY) | FY22 Actuals | FY23 Enacted | FY24 PB | FY25 PB | FY26 PB | FY27 PB | FY28 PB | FYDP PB |
|---|---|---|---|---|---|---|---|---|
| Fixed Wing | 55 | ~~48~~ 64 | 63 | 69 | 47 | 50 | 53 | 282 |
| FA-18E/F (Navy) | 12 | ~~0~~ 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| F-35C JSF CV (Navy) | 12 | ~~9~~ 13 | 15 | 15 | 15 | 15 | 15 | 75 |
| F-35C JSF CV (USMC) | 3 | ~~4~~ 6 | 4 | 4 | 4 | 3 | 0 | 15 |
| F-35B JSF STOVL (USMC) | 17 | 15 | 16 | 16 | 16 | 17 | 20 | 85 |
| E-2D AHE (Navy) | 5 | ~~5~~ 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| T-45TS (Trainer) (Navy) | 0 | 0 | 0 | 7 | 12 | 12 | 12 | 43 |
| Multi-Engine Training System (Navy) | 0 | 6 | 14 | 15 | 0 | 0 | 0 | 29 |
| Multi-Engine Training System (USMC) | 0 | 4 | 12 | 12 | 0 | 0 | 0 | 24 |
| KC-130J (USMC) | 6 | 5 | 2 | 0 | 0 | 0 | 0 | 2 |
| E-XX (TACAMO) (Navy) | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 9 |
| Rotary Wing | 59 | ~~36~~ 43 | 15 | 21 | 21 | 21 | 21 | 99 |
| CH-53K (USMC) | 11 | ~~10~~ 12 | 15 | 21 | 21 | 21 | 21 | 99 |
| CMV-22 COD (Navy) | 3 | ~~0~~ 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| MV-22B (USMC) | 9 | ~~0~~ 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| TH-73A (Navy) | 27 | 21 | 0 | 0 | 0 | 0 | 0 | 0 |
| TH-73A (USMC) | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| UAV | 10 | ~~12~~ 9 | 10 | 4 | 4 | 4 | 7 | 29 |
| MQ-4C (Navy) | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 2 |
| MQ-25 (Navy) | 0 | 1 | 3 | 4 | 4 | 4 | 7 | 22 |
| MQ-9A (USMC) | 8 | 5 | 5 | 0 | 0 | 0 | 0 | 5 |
| TOTAL | 124 | ~~96~~ 116 | 88 | 94 | 72 | 75 | 81 | 410 |

The Marine Corps is an expeditionary force in readiness that is most ready when the Nation is least ready. Through the generous support of Congress, every taxpayer's dollar appropriated to the Marine Corps is used to man, train, and equip marines to enable the Corps to remain the country's expeditionary force of choice.

58. Senator SULLIVAN. General Smith, can you provide my office with a timeline of the expected service life of each aircraft type in the Marine Corps inventory?

General SMITH. DOD defines a weapons system's service cycle as all phases of the system's life, including research, development, test and evaluation, production, deployment, operations and support, and disposal. These estimates are confirmed, planned for, utilized, and adjusted by the program office as required over time to meet requirements.

*F–35:* The expected service life for the Marine Corps F–35 is 8,000 hours (both variants). The F–35B program is projected to sundown in 2066, and the Marine Corps F–35C program is planned to sundown in 2053.

*MV–22B:* The expected service life for MV–22B is to 2055.

*CH–53K:* The expected service life for the CH–53K is 10,000 hours or an estimated 30 years.

*H–1:* The expected service life for the H–1 (AH–1Z and UH–1Y) is 10,000 hours or an estimated 30 years.

*KC–130J:* The expected service life for the KC–130J is 79,000 hours or an estimated 150 years.

*MQ–9A:* The expected service life for the MQ–9A is 35,000 hours or an estimated 14+ years.

Across all platforms, Force Design (FD) modernization efforts have integrated readiness initiatives, incorporated advanced technologies, and ensured the capabilities procured meet or exceed those of their preceding platform. FD has expanded, optimized, and enhanced Marine Aviation's ability to continue to deliver more lethal, effective, and survivable capabilities to enable naval and joint campaigning in all domains across the continuum of conflict. As an example, the FD2030 effort resulted in an increase in the number of MV–22B squadrons from 14 to 16 and a change from 12 to 10 aircraft per squadron; this effort led to decreased utilization while still maintaining the same capability, and an increase in the expected service life from 2037 to 2055. The is the classic reason why Primary Aircraft Authorization

changes often and is not a valid metric for readiness when used as an independent data point.

59. Senator SULLIVAN. General Smith, in response to my questioning on the storage of Marine Corps aviation assets you explained previous attrition models did not suitably account for hard landings and other factors. Can you provide the attrition models for all aircraft in the Marine Corps inventory?

General SMITH. Primary Aircraft Authorization (PAA), plus Backup Aircraft Authorization (BAA) and Attrition Reserve (ATT) combine to determine a Program of Record (POR) request. Once a POR is bought, all Services conduct inventory management to ensure the Service employs the aircraft to its maximum service life and, in many cases, beyond its projected service life.

Services manage inventory through various means; two common tools for managing inventory are squadron organization (flags) or squadron composition (number of aircraft per squadron). To provide historical context on inventory management through organizational and composition practices:

Between 1990 and 2015, CH–53 Active component Marine Heavy Lift Helicopter Squadrons (HMH) fluctuated from nine to ten, to nine, to ten, to eight squadrons.

Between 1990 and 2016, H–1 Active component Marine Light Attack Helicopter Squadrons (HMLA) fluctuated from six to eight, to nine, to eight, to seven squadrons.

Between 2011 to 2014, MV–22 Active component Marine Medium Tiltrotor Squadrons (VMM) fluctuated from 18 to 16 to 18 squadrons.

Between 1990 to 2016, F/A–18 Active component Marine Fighter Attack Squadrons (VMFA) changed organizational construct and composition nine times.

In 2007, F35's organizational and composition was planned to be 14 squadrons of 10 aircraft and seven squadrons of 14 aircraft.

- In 2009, it increased seven of the squadron's allocations to 16 aircraft.
- In 2011, F–35C was incorporated.
- In 2013, the plan changed to nine squadrons of 16 aircraft and nine squadrons of 10 aircraft.
- All these changes were done without adjusting POR.

Aircraft inventory management for the Marine Corps is defined by SECNAVINST 5442.3, the Management of the Naval Aircraft Inventory and Unmanned Aircraft Systems Instruction, which provides the framework for how the Service determines the appropriate quantities of BAA and ATT. Each airframe type uses different percentages based on historical data to calculate BAA and ATT.

Per SECNAVINST 5442.3, as a planning factor, ATT is a prediction of the number of aircraft that will cease operating due to a mishap or damage to the extent that restoration is uneconomical or impractical. ATT does not factor in wartime attrition. Attrition planning factors are computed using a 5-year running average from the Aircraft Inventory and Readiness Reporting System (AIRRS) data base. AIRRS provides the Offices of the Secretary of Defense, the DON, and subordinate commands with comprehensive information on Navy and Marine Corps aircraft.

Per SECNAVINST 5442.3, the ATT number may be adjusted using professional judgment when agreed upon by the Chief of Naval Operations, Director, Air Warfare (OPNAV N98), Commander, Naval Air Forces (COMNAVAIRFOR), and the Program/Project Management, Air (NAVAIR) when required to factor out unusual circumstances such as an unusually high mishap rate in a particular year and as a method to predict attrition rates for new aircraft, which have not established an attrition rate. Attrition rates are expressed as a percentage of PAA projected to attrite from the operating inventory annually.

*F–35:* ATT calculated using an attrition planning factor of 0.9 percent.

*CH–53K:* ATT calculated using an attrition planning factor of 0.5 percent.

*MV–22B:* ATT calculated using an attrition planning factor of 0.74 percent.

*H–1:* ATT calculated using an attrition planning factor of 1.0 percent.

*KC–130J:* ATT calculated using a planning factor of 0.

*MQ–9A:* ATT calculated using a planning factor of 0.

In sum, ATT is a prediction calculated using the historical strike average (previous 5 years) or the best professional judgment for unusual circumstances and new aircraft. Strategic inventory management is vital to ensure the Service has enough backup and attrition aircraft needed to support the operational forces for the program's lifetime.

FORCE DESIGN 2030

60. Senator SULLIVAN. General Smith, in June 2022, I wrote an op-ed expressing three concerns about Force Design. The first was that "the Marine Corps must carefully manage the gap between divestment of current combat capability and future combat capability development—and the significant risk that entails—specifically, the Marine Corps has gotten rid of its tanks and bridging units as well as a significant portion of its cannon artillery and aviation units so it could buy mobile antiship missiles, anti-aircraft systems, loitering munitions and unmanned aerial vehicles. But many of these systems have not been purchased yet and some are still going through testing and development and field integration with newly developed Marine Corps units." The second was that "Force Design's success depends on the U.S. Navy, both in terms of greater Marine Corps-Navy integration and the Navy's critical role in delivering and sustaining Marine Corps stand-in forces to fight from remote littoral areas in the Indo-Pacific and across the world." The third was that "Force Design must deliver what the American people have come to expect from the Marine Corps: a global force ready to deploy to any clime and place on Navy ships to deliver a lethal combined arms, kick-in-the-door capability in response to a major national security crisis." Senior Active Duty and retired Marine officers agreed with this assessment. In his prepared testimony for the April 18, 2023 Department of the Navy posture hearing, the Commandant said "[t]here is a misperception by some that Force Design might create a gap in Marine Corps capabilities between divestment and fielding new capabilities." In your personal opinion, has the Marine Corps experienced a gap in capabilities between divestment and fielding new capabilities?

General SMITH. No, the Marine Corps has not divested of any equipment or structure that prevent its ability to meet its Title 10 requirements. Most of the capabilities the Service has invested in are either being transitioned or modernized rather than being divested of without a fielded capability. The threat environment and strategic guidance requires divestment of platforms less relevant for the future operating environment to ultimately increase the lethality of the Joint Force. The Pre-Force Design 2030 MAGTF was capable of fighting in three domains—land, air, and sea. Today, the MAGTF is capable of fighting in all five domains with the investments in space and cyber capabilities. The Marine Corps has primarily invested in these capabilities at the Command Element (CE) level with the increase in cyber and space military occupational specialties and the establishment of the Marine Information Group (MIG) (a product of Future Force 2025) within the MEF. We have significantly increased the lethality of the Ground Combat Element (GCE) with precision fires and sensor capabilities to track and detect adversary targets at distance. The Aviation Combat Element (ACE) has increased both operational reach and lift capacity with investments in the CH–53K, MV–22B, and an increase of one Active component KC–130C squadron. The ACE has also increased its ability to sense and make sense of the environment with fifth generation F–35 platforms. As the pacing function the Logistics Combat Element (LCE) is developing new concepts for afloat and shore sustainment capabilities that are tethered within a network of appropriate command arrangements that expedite logistics in a contested environment.

Today, the Marine Corps is better prepared as a naval expeditionary force-in-readiness and to operate inside actively contested maritime spaces in support of fleet operations and joint campaigns. The Marine Corps is already standing-in alongside allies and partners within reach of enemy weapon systems during competition. During crisis the Marine Corps also continues to be the premiere global crisis response force. Critical to this is maintaining no less than 31 L-Class amphibious warfare ships and delivering 35 Medium Landing Ships (LSMs) to posture forces forward to provide the Marine Corps the required maritime maneuver and mobility. During conflict the SIF is prepared to seize and defend key maritime terrain, support sea control and denial operations, and maintain custody of maritime targets in support of projecting combat power from the Joint Force back into an anti-access, area denial environment.

Last, our initial investments in lethality are already bearing fruit. With the support of Congress, III Marine Expeditionary Force will be receiving the first delivery of the Navy Marine Corps Expeditionary Ship Interdiction System (NMESIS). This is a significant milestone. Within 3 years since Force Design 2030 started, we will be operationalizing a new capability we did not have before—a ground-based antiship capability.

61. Senator SULLIVAN. General Smith, one criticism of Force Design is that the Marine Corps divested too much combat capability too quickly, creating a combat capability gap before new capabilities are integrated into the force. I highlighted this issue last year in an op-ed where I stated "The risks inherent in this combat

capability gap could be substantially mitigated if the Marine Corps had a more robust budget, allowing them to modernize the force before getting rid of proven weapon systems. The commandant recently acknowledged this fact during a May 2022 Senate Armed Services Committee hearing. But the Biden administration continues to send Congress inflation-adjusted budget cuts for the Marine Corps and all other services, forcing the commandant to substantially divest current capabilities to pay for future ones." In your opinion, in a less constrained budgetary environment would a better approach have been to test, invest, and then divest combat capabilities?

General SMITH. It is important to note that budget alone does not determine decisions related to divestment and force structure. Strategic considerations, service priorities, the threat environment and operational needs also play important roles in these decisions. The decision to divest certain capabilities resulted from a threat informed, strategy driven, concept-based capability analysis.

Pre-Force Design, the Intelligence Community (IC) Annual Threat Assessment characterized threat environment as " . . . driven in part by China and Russia as they respectively compete more intensely with the United States and its traditional allies and partners. This competition cuts across all domains, involves a race for technological and military superiority, and is increasingly about values." The 2023 Annual Threat Assessment described China as " . . . working to meet its goal of fielding a military by 2027 designed to deter U.S. intervention in a future cross-Strait crisis." Additionally, the 2022 National Security Strategy (NSS) identified the People's Republic of China (PRC) as the only competitor with the intent and the capacity to reshape the international order.

The Marine Corps follows the Planning, Programming, Budgeting, Execution, and Analysis (PPBEA) process for all investment decisions. One of the constraints associated with this process is prolonged acquisition strategies that result in delayed fielding of advanced capabilities. As result, by the time the platform is delivered to the marines employing it the capability may be outdated due to technological advancements and is less relevant. Over the past five President's Budget (PB) cycles from fiscal year 2020 through fiscal year 2024, Force Design accelerated modernization efforts by divesting in $18.2 billion of legacy equipment and invested $15.8 billion in modernization.

With the drawdown of forces supporting operations in CENTCOM in 2014, the Marine Corps identified the necessity to transition from sustaining a land campaign to modernizing the force in support of maritime campaigning inherent in our title 10 requirements. To maintain operational and tactical relevance on a modern battlefield due to the evolution of technology, the Marine Corps divested of programs that were of lesser relevance for a naval expeditionary service. Additionally, budget constraints were identified by NDS architects and Marine Corps' Force Design 2030 planners with the underlying assumption that the department's topline budget would grow modestly at a 2 percent inflation rate. The Marine Corps' divestment strategy followed the 2018 and 2022 NDS and the associated Defense Planning Guidance that directed the divestment of legacy capabilities and modernization at the speed of the pacing threat.

62. Senator SULLIVAN. General Smith, the Marine Corps divested combat capability and force structure with Force Design 2030 in a rapid amount of time. For example:

- Close to 10,000 Active Duty marines and 6,000 Reservists.
- 21 percent of Active Duty infantry marines and 16 percent of Reserve Infantry Marines
- 67 percent of cannon artillery
- 33 percent of AAVs
- 100 percent of Tanks (7 Companies)
- 100 percent of Bridging (3 Companies), along with breaching, clearing, and proofing equipment
- 100 percent of Law Enforcement/Military Police (3 Battalions)

As Force Design has progressed, the Marine Corps had adjusted some of its planned divestments. For example, Force Design originally planned for only five cannon artillery batteries in the Active component but that number subsequently increased to seven. Cannon artillery remains highly relevant on the battlefield in Ukraine and perhaps another increase in the number of batteries is wise. What divested combat capability and force structure would you return to the force if able and funding was available?

General SMITH. Budget is not the only factor in the decision to divest and restructure. If the Marine Corps had a larger budget, we would accelerate Force Design

priorities to include additional investments in retention, infrastructure, and quality of life.

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## QUESTIONS SUBMITTED BY SENATOR ANGUS KING

### CELESTIAL NAVIGATION

63. Senator KING. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, please describe how your service conducts celestial navigation training at the basic, intermediate, and advanced levels. If not employing celestial navigation, how is your service training to properly navigate and target without access to the electromagnetic spectrum or modern tools?

General GEORGE. The Army reinforces basic land navigation training (from basic combat training) with enlisted soldiers in the Advanced Individual Training (AIT) and in officer and noncommissioned officer professional military education. Soldiers are graded on their ability to self-locate with only a map and compass to within 200 meters. This is a critical skill for the Army's forward observers who locate and engage targets with indirect fire systems. While the Army does not train soldiers to navigate by celestial bodies, the Army teach soldiers during the officer and noncommissioned officer professional military education courses how to utilize survey to gain directional control from celestial bodies and to transfer that to adjacent units. These skills are part of Army doctrine. This ensures that firing units are on common directional control even in a degraded or denied environment.

In terms of the Army's ability to target in a degraded or denied environment, the Army spends sign]ificant training time in AIT and basic officer leader course teaching soldiers to locate targets with only a map, compass, and binoculars. They are graded on their ability to locate targets to within 250 meters. Fire Support Soldiers are trained on vehicle recognition and must pass this as part of their semi-annual qualification. Air Defense Soldiers are trained on manual engagement with the Patriot system, but this is considered high risk due to the potential for fratricide. For Man-portable Air-defense System (MANPADS) and Avenger engagements, operators are trained in visual aircraft recognition which enables them to identify and engage targets in a denied or degraded environment. The MANPADS and Avenger systems are designed for manual emplacement and engagement.

Admiral FRANCHETTI. The Surface Navy conducts and maintains a capability to carryout celestial navigation (CELNAV) skillsets that include basic, intermediate, and advanced levels for both Officers and Enlisted personnel. Additionally, the Navy has invested in a Future Naval Capability automating CELNAV. The planned Automated Celestial Navigation System (ACNS) is scheduled to be fielded in first quarter fiscal year 2025 on surface ships and consists of a passive sensor and processing equipment. ACNS uses ephemeris data from stars and other heavenly bodies to determine the ships position in the absence of the global positioning system. The inherent advantage of using ACNS is that it cannot be spoofed or jammed. The ship's quartermaster will oversee the quality of data by observing system inputs to the Electronic Chart Display and Information Systems.

General SMITH. While the Marine Corps does not conduct celestial navigation training, every marine does learn the fundamentals of land navigation. At the basic level, enlisted marines receive training on basic land navigation during recruit training and at the school of infantry. Marine officers receive basic land navigation training at Officer Candidates School and the Basic School. Basic land navigation includes, but is not limited to terrain association, use of map and compass, chart plotting, and navigation between points. In addition to basic land navigation, enlisted marines at Advanced Infantry Training are instructed in the use of Global Positioning Satellite equipment. Targeting is also taught, with and without the aid of technology. Additionally, for military occupational specialties (MOS) that have a movement mission, marines receive intermediate through advanced level training based on their billet and/or MOS requirements, which builds on the foundational level requirements learned during initial entry-level schools.

General ALLVIN. USAF aircrews no longer utilize celestial navigation. To ensure navigation without access to the electromagnetic spectrum or modern tools, aircrews receive basic, intermediate, and advanced training in visual navigation and dead reckoning. These skills enable aircrew to be on time and on target anywhere in the world. As an example, mobility aircrew train, practice, test and evaluate their ability to operate in GPS denied environments by mission planning routes using identifiable features, ingressing via low level flight, and comparing visual references to maps and using timing to back up turn points. These techniques also incorporate

use of Night Vision Devices. Additionally, mobility aircraft can use inertial navigation units (INUs) in order to navigate in a GPS-denied environment.

While the INUs are susceptible to drift depending on inaccurate wind data and instrumentation error, pilots are trained and able to periodically make INU updates based on radio navigational aid (NAVAID) positioning or Latitude/Longitude updates based off of known positions.

General THOMPSON. Space Force satellites have used star trackers and celestial navigation for decades and expect to do so well into the future. At the same time, the USSF understands the importance of service ability to operate in an EMS-denied environment. Our personnel are trained to operate our weapons systems, sensors, and communications in an EMS-denied environment. We are happy to provide details on resiliency of specific USSF weapons systems, sensors, and communications in a closed setting.

ALTERNATE POSITION NAVIGATION AND TIMING (APNT) MAN, TRAIN, AND EQUIP

64. Senator KING. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, how is your service manned, trained, and equipped to operate in a Global Positioning System-denied and emissions control (EMCON) environment at each level of unit employment?

General GEORGE. The Army's Assured Positioning, Navigation and Timing (APNT) transformation and modernization incorporates three domains: ground, air, and munitions. Based on Combatant Commander Operational Needs Statements, the Army fielded recent quick reaction capability (QRC) equipment that provides enhanced Global Positioning System (GPS) protection compared to current equipment. The Army will begin fielding the first ground Mounted Assured PNT System (MAPS) and Dismounted Assured PNT System (DAPS) with Military-Code (M-Code) capable GPS receivers in 2024. The Army's aviation and artillery platforms also require especially robust PNT solutions to operate in GPS-denied and EMCON environments. To meet this requirement, the Army will begin fielding M-Code Capable GPS receivers to aviation platforms in 2024, as well. The PNT community is also focused on providing a complementary anti-jam and strong anti-spoof capability inherent in M-Code GPS. End-users must be able to "hear" and validate the signals from space.

In order to train, equip and integrate effectively, soldier touchpoints and experimentations are critical to emulate the threat and experiment with technology in an operationally relevant environment. The Army conducts the annual PNT Assessment Experiment (PNTAX), using threat-based equipment in an open-air GPS degraded/denied environment. This event, first conducted in 2018, facilitates rapid test/fix/test methodology to "harden" PNT robustness across ground, air, and munition domains. Findings and lessons learned from PNTAX have enabled the Army to focus on small anti-jam antennas for munitions and receivers capable of alternate non-GPS sources of PNT, better inertial navigation components, and Modular Open System Architecture (MOSA) Sensor-fused solutions. Additionally, there is a need for realistic live training at home stations and Combat Training Centers (CTCs), as well as continued support of the Army's PNT-related modernization efforts as they are fielded to the force.

The Army has populated the force with trained Electromagnetic Warfare (EW) and Electromagnetic Spectrum Manager personnel at maneuver and signals units from battalion to Army Service Component Command (ASCC). EW and Navigation Warfare (NAVWAR) capabilities are important in order to bolster APNT knowledge and capability across the force. NAVWAR situational Awareness, NAVWAR Attack, and EW capabilities will deliver warfighters actionable information to support Army multidomain operations and provide agility, speed and confidence to enable PNT overmatch.

Admiral FRANCHETTI. The Navy has made significant advancements over the past 4 years to train our force to operate in a GPS denied and EMCON environment at each level of unit employment. The Navy employs specific tactics, techniques, and procedures (TTPs) in Navigation Warfare (NAVWAR) in every large-scale Fleet exercise and operation. These deliberate defensive and offensive actions assure friendly use and prevent adversary use of Positioning, Navigation, and Timing (PNT) information through coordinated employment of space, cyberspace, and electronic warfare (EW) capabilities.

In January 2020, the Navy established the Assured Positioning, Navigation, and Timing (PNT) Cross-Functional Team (CFT) to improve Navigation Warfare (NAVWAR) readiness. The Assured PNT CFT refined the Navy's NAVWAR TTPs based on current and evolving threats, and ensured NAVWAR operations were integrated in the Navy's planning process at each level of unit employment. The Naval

Information Warfighting Development Center (NIWDC) is partnering with the U.S. Space Forces' Joint Navigation Warfare Center (JNWC) for all our large-scale Fleet exercises and operational planning. The Assured PNT CFT also prioritized the Navy's investments in resilient capabilities to ensure the Fleet is able to operate in a GPS-denied and EMCON environment.

General SMITH. The Marine Corps' Project Tripoli, which is our initiative to modernize our training systems into an all-domain, all-echelon, integrated live, virtual, and constructive training environment, is designed specifically to address this very challenge among many others. We will have the ability recreate the effects of a denied, degraded, or disrupted electromagnetic spectrum by manipulating our simulations and by synthetic means without effecting the local electromagnetic spectrum, or in some cases, by using low-power systems to have a direct impact on marines and their equipment on our ranges and training areas.

Project Tripoli is adopting the Space Systems Generator-Global Positioning System (GPS) Environment Generator (SSG-GEG). This simulation provides realistic replication (i.e., effect) of signal generation integrated with domain simulations. GPS jamming affects aircraft navigation and accuracy of long flight of GPS guided munitions. GPS noise jamming models the electronic emissions from jammer platforms that aircraft and national systems collect against and generates reports.

On 21 November 2022, the Service finalized the development of the Electromagnetic Warfare Ground Instrumented Range (EWGIR) Requirements Memorandum. EWGIR will be employed at standing ranges and training areas approved for specific device usage to replicate adversary EW capabilities, (e.g., GPS spoofing, jamming tactical radios, direction finding, etc.) thereby creating a degraded, disrupted, and denied environment for ground-based unit training. In addition, will depict real-time emissions monitoring to create a visual depiction of the training unit's electromagnetic spectrum footprint, enabling units to learn, implement, and rehearse tactics, techniques, and procedures to counter current pacing threat capabilities.

Force Design 2030 aims to create a more agile, flexible, and lethal force that is better equipped to operate forward, compete, project power and influence as directed (meet the requirements) by the National Defense Strategy and other strategic guidance documents. This includes enhancing the Marine Corps' ability to conduct expeditionary and amphibious operations, improving its ability to operate in contested and denied environments, and increasing its capacity to conduct distributed operations with joint and allied partners.

To operate in denied and emission-controlled (EMCON) environments, marines must possess organic systems that counter the effects of adversarial systems or continue to provide positioning, navigation, and timing data. Secure Expeditionary Resilient Positioning, Navigation, and Timing (SERPNT) provides marines with the ability to navigate reliably and acquire precise timing information for both themselves and their platforms. Positioning, Navigation, and Timing (PNT) capabilities across the enterprise will be maintained and future PNT capabilities supported by funding proposals in the Fiscal Year 2024 President's Budget Request. The Marine Corps will update its Military-Code PNT capabilities, which offer improved defenses against hostile jamming and spoofing threats, as part of the SERPNT program. A crucial component of the program is that it further enables the Marine Corps' ability to participate in Joint All-Domain Command and Control efforts across the Department of Defense.

The Service-Level Training Exercises (SLTE) sponsored by the Marine Air-Ground Task Force Training Command (MAGTFTC) trains the Marine Corps in EMCON environments at multiple echelons of employment across the aviation, ground, and logistics combat elements. SLTE provides contested-spectrum training environments from the individual to infantry division level across five exercises: Integrated Training Exercise (ITX), Adversary Force Exercise (AFX), Mountain Training Exercise (MTX), Weapon and Tactics Instructor (WTI) Exercise, and the MAGTF Warfighting Exercise (MWX). All five exercises train and validate Marine Corps unit's tactics, techniques, and procedures (TTP) for operating in a contested-spectrum environment in live fire, non-live fire, and force-on-force events.

*Integrated Training Exercise:* ITX is a 28-training day exercise training a regimental task force consisting of two infantry battalions, mechanized detachments, one artillery battalion, a combat logistics battalion, a composited aviation squadron, and other specialty enablers within the information warfare community. The exercise builds on the exercise force's Unit Level Training (ULT) in EMCON, signature management (SIGMAN), and other information warfare-related skill sets from the squad to regimental echelons while incorporating the same principles in aviation and logistics operations in collective training events. Units are assessed, coached,

and mentored by the information warfare section of the Tactical Training and Exercise Control Group (TTECG) throughout the entirety of ITX.

*Adversary Force Exercise:* AFX is a 36-training day exercise training a battalion task force with mechanized detachments, one artillery battalion, a combat logistics battalion, a composited aviation squadron, and other specialty enablers within the information warfare community. Much like ITX, AFX builds on the exercise force's ULT program while integrating additional attachments and special capabilities to reinforce their role as the adversary force within MWX. These attachments add capabilities in electronic warfare (EW), information warfare, unmanned aviation systems (UAS), as well as other emerging employment concepts. The AFX task force trains and fights within their TTPs in an urban environment while integrating the mentioned attachments and special capabilities related to EMCON and information warfare. Units are also assessed, coached, and mentored in information warfare skills by the TTECG information warfare section.

*MAGTF Warfighting Exercise:* MWX is a 5-day non-live fire force-on-force exercise between the ITX and AFX exercise forces. MWX is unique to incorporating EMCON and operations in a contested-spectrum environment as the premise of the exercise is for Marine Corps units to plan and execute military operations against a thinking adversary that actively operates with real-world TTPs. Beyond the capabilities, processes, and TTPs outlined in bullets (b) and (c), MAGTFTC includes additional EMCON training opportunities and considerations through the Exercise Control (EXCON) Staff for both exercise task forces. EXCON incorporates Marine Corps, Joint Force and contractor supported EMCON capabilities to enhance training during MWX.

*Weapons and Tactics Instructor Course.* Marine Aviation Weapons and Tactics Squadron One (MAWTS–1) produces WTIs through advanced qualification in all six functions of Marine Corps Aviation in a 56-training day course. One of the specified functions of aviation operations is spectrum warfare, leading the course to develop students to master the function in order to train the rest of the Aviation Combat Element (ACE) across the Fleet Marine Force (FMF). Students are trained in individual skills, which are validated in collective training events that include ground, logistics, and aviation combat elements that incorporate spectrum warfare. Most live collective training events are executed in a simulated GPS-denied or degraded environment, challenging students to navigate and deliver ordinance in real-world contested environments. Students will be trained in the characteristics of the electromagnetic spectrum (EMS), recognizing the challenges in a contested EMS environment, and mitigation techniques to operate in a contested EMS environment. A capstone training event within WTI includes battle drills for multiple functions of Marine Corps aviation in a live-fire non-illuminated raid in a spectrum-contested environment. Communication students are trained and evaluated in spectrum fundamentals as it relates to Marine Corps aviation. WTI also executes a training exercise for aviation command, control, and communications (C3) that trains students in the monitoring and reporting of Joint Spectrum Interference Resolution (JSIR) occurrences. Throughout WTI, students of varying specialties are trained and evaluated in the principles of Electronic Warfare (EW) in written exams and collective training events.

*Marine Littoral Regiment Training Exercise (MLRTE).* MAGTFTC completed the MLRTE in February 2023 to validate the employment concept of the 3D Marine Littoral Regiment (MLR). The non-standard exercise provided collective training opportunities to the unique task organization of the MLR, to include training their robust information warfare capabilities. The exercise focused on training targeting and C2 in a contested spectrum environment in the maritime domain, validating 3D MLR's ability to support a naval campaign against the pacing threat. The exercise used live and simulated adversary capabilities, specifically emulating cyber, electronic warfare, and space threats against 3D MLR while executing naval kill chain operations.

General ALLVIN. The United States Air Force funds and operates ground-based navigational aids, both at fixed installations and that can be deployed. These systems operate independently of Global Positioning System (GPS) and can provide alternatives to navigation should GPS be denied. From an EMCON standpoint, none radiate low probability of interception or detection signals, but all can be quickly turned off. All can be jammed by emitters with sufficient power and relative proximity to airfields.

The Air Force also funds and operates Airport Surveillance radars that can provide range and azimuth information to that Air Traffic Controllers can vector aircraft toward their destination. These radars do use GPS signals for timing purposes but can continue to operate without them.

General THOMPSON. Space Force understands the importance of service ability to operate in an EMS-denied environment, and so our personnel are trained to operate

our weapons systems, sensors, and communications in a GPS-denied environment. Additionally, Space Force satellites use star trackers, sun sensors, limb sensors, as well as INUs for guidance and station keeping. Last, as the provider of GPS to the other Services, the Space Force works to minimize the impact of GPS denial. The GPS service provided by the USSF also does not require user transmissions, so can be utilized by warfighters in EMCON environments.

65. Senator KING. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, how resilient are each of your service's currently employed and deployed position navigation and timing systems?

General GEORGE. The inception of Army Future Command reinvigorated a focus on rapid prototyping, particularly in the area of position, navigation, and timing, that has accelerated the Army's ability to inform requirements and deliver not only hardened GPS protection across the force structure, but also to expand the focus on alternate sources of PNT across all domains for resilient and survivable PNT solutions. The majority of Army platforms and personnel currently rely on P(Y)-Code [pronounced "P" "Y" "Code"] GPS electronics to receive GPS. The Army is in the process of migrating to M-Code to be compliant and increase resiliency. During combat operations in a dynamic electronic warfare environment, receiver resiliency may be challenged; however, there are ways to mitigate and "fight through the effects" based on tactics, techniques, and procedures (TTPs) that soldiers have developed when confronted with similar effects during recent operations. As previously mentioned, there is a need for realistic live training at home stations and CTCs as well as the Army's PNT-related modernization efforts continue to field. The Army modernization efforts are based on direction from the numerous PNT-specific directives throughout the last decade of NDAAs, and most recently in the fiscal year 2023 NDAA. In a fiscally constrained environment, the Army will have a hybrid of current and M-Code compliant capabilities as it works toward continued modernization of this capability improving resiliency, survivability and delivering alternative navigation options to the commanders.

Admiral FRANCHETTI. Currently the Navy has a level of resiliency built in across its platforms with the Selective Availability Anti-Spoofing Module (SAASM) military GPS receivers, inertial navigation systems, and anti-jam (A/J) antennas. The ongoing transition to GPS M-code receivers and the improvements to platform inertial navigation systems and A/J antennas further enhances our resiliency. With the integration of alternative PNT capabilities, our systems have increased resiliency and survivability when GPS is completely denied/degraded.

General SMITH. The Marine Corps is currently utilizing the AN/PSN–13 (DAGR) which provides a Selective Availability Anti-Spoofing Module (SAASM) Code types Coarse/Acquisition (C/A), Precise (P), and Encrypted Y code. The Selective Availability Anti Spoofing Module (SAASM) enables the DAGR to resist jamming and to resist spoofing when crypto keys are installed.

General ALLVIN. The Air Traffic Control and Landing Systems that the Air Force operates can function without GPS and can serve as an alternative should GPS be denied. The Tactical Air Navigation System (TACAN), in particular, gives military aircraft the ability to navigate point to point and allows some aircraft to automatically update their internal navigation systems. TACANs can be used as an alternative to the current position, navigation and timing architecture.

General THOMPSON. The USSF maintains a healthy but aging constellation of up to 31 Global Positioning System (GPS) satellites, with inherent robustness in its large constellation size, altitude (11,550 miles), distribution in six orbital planes, and by-design redundancy in the onboard clocks and subsystems. The 2d Space Operations Squadron (2 SOPS) actively manages the constellation to ensure a reliable signal-in-space to users worldwide.

The distributed worldwide GPS Operational Control System (OCS) is inherently robust and resilient with geographically separate primary and alternate ground stations to command and control the constellation. The USSF has made significant investments in cyber defense improvements to the OCS and will sustain this legacy system until deployment of the Next Generation GPS Operational Control System (OCX).

Space Force satellites use star trackers and inertial navigation units for positioning and navigation. The Space Warfighter Analysis Center (SWAC) Force Design efforts include analyzing architectures that enhance resiliency of space-based Positioning, Navigation, and Timing (PNT) for the Joint Force, including the potential use of multi-Global Navigation Satellite Systems (M-GNSS) and Space Development Agency's (SDA) proliferated Low Earth Orbit (pLEO) constellation.

66. Senator KING. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, what is your service investing in to meet APNT operations?

General GEORGE. First and foremost, the Army has invested in enduring relationships with its sister services and partners within the intelligence community. The Army has signed a Memorandums of Agreement (MOA) with the United States Space Force (USSF) Space Systems Command (SSC) and the Space Development Agency (SDA), a USSF direct-reporting unit. The USSF will continue to operate, maintain, and control space-based systems, while the Army's interest will remain ensuring Army space-based requirements are integrated into future space systems and direct access to space-based data is maintained.

To build on the foundational investment in M-Code, the Army continues to invest in resilient and survivable APNT signals that can function when adversary effects limit the Army's GPS devices. Vision Based Navigation and the Army's Alternative Navigation (ALTNAV) program, which is funded to be included as part of Military GPS User Equipment (MGUE) Increment 2 are joint investments with the USSF. With respect to ALTNAV, the Army has funded its incorporation of MGUE INC 2 so future systems can readily access the ALTNAV signal as an alternative source of PNT. Recent successes include:

1. Successful Precision-Guided Munition (PGM) ALTNAV test.
2. Successful use of network power, or Network-Assisted Assured PNT (NA2), to "hot start" the Army's weapons and PGMs with "PNT truth."
3. Success using on-demand offensive Munition-Deployed NAVWAR payloads to control the adversaries' access to PNT.

The Army will employ both legacy and new GPS kit for the foreseeable future due to the sheer volume of platforms requiring GPS and the fiscal realities that come with modernizing that equipment. To combat those challenges, the Army is also investing in MOSA and software-defined PNT receivers which will enable us to rapidly update new capabilities needed to counter complex threats, versus traditional full hardware updates. This approach will greatly reduce future costs and integration timelines for the Army's platforms and equipment to meet the challenges of evolving APNT operations.

The Army is also investing in all pillars of Navigation Warfare (NAVWAR) in order to understand, decide and act/react faster than the enemy. NAVWAR situational Awareness, NAVWAR Attack, and EW capabilities will deliver warfighters actionable information to support Army multidomain operations. These capabilities allow leaders to be agile and able to move forces to adjust their disposition and tempo to gain advantage.

Admiral FRANCHETTI. *Non-GPS Aided PNT for Surface Ships (NoGAPSS) Future Naval Capability (FNC).* The Navy, through the Office of Naval Research (ONR), initiated development of alternate PNT capabilities for surface combatants in fiscal year 2017. Under the NoGAPSS FNC, the Navy is investing in the Automated Celestial Navigation System (ACNS) for surface combatants which provides an external day/night position fix when GPS is denied/degraded. Permanent ACNS installs are planned to begin in fiscal year 2025. The Navy is also investing in an improved timing source within GPNTS, which encompasses a calibrated Cesium (Cs) clock and a new interface with the Wideband Anti-Jam Modem (WAM) for Two Way and One Way Satellite Time Transfer. These alternate PNT capabilities will allow surface combatants to operate without GPS for extended periods of time (days to months).

*U.S. Naval Observatory (USNO)*—The Navy, in collaboration with other mission partners, is investing in a new Two-Way Satellite Time Transfer (TWSTT) modem for Next Generation Secure Satellite Time Transfer at the U.S. Naval Observatory. The new TWSTT modem will deploy initially to the USNO, the IC, and other DOD TWSTT sites and use the Wideband Global Satellite (WGS) constellation as a relay to receive alternate precise time from an authoritative timing source independent of GPS. The next generation TWSTT modem will achieve IOC in fiscal year 2026.

General SMITH. Funding will be allocated in fiscal year 2026 to research Alternate PNT capabilities. The Marine Corps is currently monitoring several efforts, leveraging everything from LEO and GEO satellites to cell towers being researched by Services Labs. We will be leveraging off the other services but are not funding any PNT Research. Currently Marine Corps Warfighting Lab Science and Technology (MCWL S&T) is tracking the SOCOM PANGEO development which is General Atomics designed solution on some small boats.

SkyView sponsored by ONR–35—provides GPS absent Navigation for Terminal Seeker Enabled PGMs. Affords Substantial Growth Opportunities in RF based PGM Capabilities.

In fiscal year 2024, the Marine Corps has requested the below assured position, navigation, and time (APNT) investments to ensure continuous operation in contested and denied environments.

- Marine Group 5 UAS Series o 1506N: APN / BA 05 / BSA 1: Modification of Aircraft / 0507
  - o President's Budget 2024 Request: $98.1 million
  - o This budget request supports the MQ–9A with the integration of modifications associated with Global Positioning System (GPS) Anti-Jam. The GPS Anti-Jam Antenna delivers protection against interference and intentional jamming providing an accurate GPS location.
- Global Positioning System (AH–1Z/UH–1Y)
  - o 1506N: APN / BA 05 / BSA 1: Common Avionics Changes / 0577
  - o President's Budget 2024 Request: $3.1 million
  - o The program procures and modifies GPS equipment such as receivers, antennas, amplifiers, and protection technologies (anti-jam) as required for naval aviation platforms.
- 155MM Ltwt Towed Howitzer
  - o 1109N: PMC / BA 02 / BSA 2: Artillery and Other Weapons / 2185
  - o President's Budget 2024 Request: $0.5M
  - o Fiscal year 2024 funding supports the procurement of Digital Fire Control System (DFCS) modification kits to allow for continued operation in Global Positioning System (GPS) contested environments.
- Navigation Technology
  - o 1319: RDTEN / BA 02 / PE 0602271N / Electromagnetic Systems Applied Research
  - o President's Budget 2024 Request: $14.5 million
  - o The overarching objective of this activity is to develop technologies that enable the development of affordable, effective and robust Position, Navigation and Timing (PNT) capabilities using non-Global Positioning System (GPS) navigation devices, and atomic clocks. This project will increase the operational effectiveness of U.S. Naval units. Emphasis is placed on GPS Anti-Jam (AJ) Technology; Precision Time and Time Transfer Technology; and Non-GPS Navigation Technology (Inertial aviation system, bathymetry, gravity and magnetic navigation). The focus is on the mitigation of GPS electronic threats, the development of atomic clocks that possess unique long-term stability and precision, and the development of compact, low-cost Inertial Navigation Systems (INS).
- Global Positioning System (GPS) and Navigation Technology o 1319: RDTEN / BA 03 / PE 0603271N / Electromagnetic Systems Advanced Technology
  - o President's Budget 2024 Request: $4.0 million
  - o The overarching objective of this activity is to develop technologies that enable the development of affordable, effective and robust Position, Navigation and Timing (PNT) capabilities using non-Global Positioning System (GPS) navigation devices, or atomic clocks. This activity will increase the operational effectiveness of U.S. Naval units. The focus is on the mitigation of GPS electronic threats, the development of atomic clocks that possess unique long-term stability and precision, and the development of compact, low-cost, Inertial Navigation Systems (INS).
- JT Tactical Radio Systems (JTRS)
  - o 1319: RDTEN / BA 05 / PE 0604280N / NAVSTAR GPS Equipment
  - o President's Budget 2024 Request: $37.6 million
  - o Continue investigation of enhanced Anti-Jam (AJ) capabilities for integration into existing Sea NAVWAR antenna systems, continue efforts to develop and test a GPNTS system capable of hosting the Automated Celestial Navigation Systems (ACNS) below deck hardware, complete ground and flight testing of the Multi-Platform Anti-Jam Global Positioning System Navigation H-Antenna Integration (MAGNA-I) on the AH–1Z/UH–1Y helicopters, and conduct Military Code (M-Code) Prime Vendor Integrations (PVI) on the following three (3) platforms: MV–22, CH–53K, and KC–130J.
- Amphibious Combat Vehicle Family of Vehicles
  - o 1319: RDTEN / BA 05 / PE 0605611M / MC AVS Development & Demonstration
  - o President's Budget 2024 Request: $88.6 million
  - o System Design and Development; Engineering and Manufacturing Development (EMD) test vehicle manufacturing; prime contractor Developmental and Operational test support, and development of Logistics Management Informa-

tion (LMI) data. Continue integration and system check-out activities for Assured Position Navigation and Timing (APNT) systems.

- Marine Corps Communication Systems
  - o 1319: RDTEN / BA 07 / PE 0206313M / Exp Indirect Fire Gen Supt Wpn Sys
  - o President's Budget 2024 Request: $4.0 million
  - o Continue to support all technical and programmatic activities as the PNT CMO evaluates, procures, and fields M-Code and non-GPS capabilities to Marine operating forces. Continue the evaluation of technologies that will increase the resiliency and assurance of PNT capabilities across the USMC enterprise. Participate in Army's test events for the MAPS Gen II system which will lead to the successful fielding of the Marine Corps' Mounted Assured Resilient Navigation (MARNAV) capability. Continue laboratory analysis and simulations as well as field testing of alternative PNT solutions as we field MCode capable solutions to our priority host platforms. Continue to provide subject matter expertise to the PNT CMO in all matters relevant to the GPS / PNT arena, and function as a technical liaison to other Service activities, industry partners, and academia.
- Lightweight 155mm Howitzer
  - o 1319: RDTEN / BA 07 / PE 0206623M / MC Ground Cmbt Spt Arms Sys
  - o President's Budget 2024 Request: $0.015 million
  - o The program will continue to focus on improving the Digital Fire Control System (DFCS) of the M777A2 while allowing for operation in a Global Positioning System (GPS) denied/ challenged environment. Continued operation in a GPS denied/challenged environment is critical to the M777A2 ability to fire Precision Guided Munitions (PGM). The M777A2 will leverage the US Army's Assured Positioning, Navigation, and Timing (APNT) initiatives, such as Mounted APNT System (MAPS), as well as DFCS efforts by other US Army weapon system platforms, to help evaluate future modernization efforts for the M777A2

General ALLVIN. The Air Force is investing in promising Assured Positioning Navigation and Timing (APNT) technologies. For example, we are developing an updated aircraft platform PNT architecture which includes modularity (MOSA) to allow for cost effective and timely integration of APNT techniques. The Air Force Research Lab (AFRL) is also developing APNT techniques in advanced GPS concepts with NTS–3; a wide range of non-GPS solutions (e.g. magnetic, celestial, vision, datalink-time transfer); and advanced PNT sensors including quantum magnetics and quantum inertial.

General THOMPSON. The USSF is investing in a variety of Alternate Positioning, Navigation, and Timing (APNT) operations, to include: (1) development of a PNT capability on the Space Development Agency's Proliferated Space Warfighter Architecture data transport layer satellites; (2) development with the Air Force Research Lab (AFRL) of the Navigation Test Satellite–3 (NTS–3) to demonstrate a variety of PNT technologies, including flexible PNT waveforms, advanced antennas, as well as signals designed to support size/weight/power/cost constrained users; (3) development of Military GPS User Equipment, Increment 2 which includes a capability to process selected international, civil, and commercial PNT signals and; (4) development of various alternate, non-GPS solutions to include celestial navigation, PNT over various datalinks, new cryptographic concepts, and advanced PNT sensors leveraging quantum technology. Other complementary APNT efforts are underway within the U.S. Air Force, U.S. Army, and U.S. Navy.

LEAKGATE

67. Senator KING. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, what role does each service (and the individual—self-monitoring) have in monitoring social media accounts and 'like' platforms for those servicemembers and former servicemembers who hold or have held high-level security clearances?

General GEORGE. The Army does not conduct social media checks for background investigations or security clearance purposes. In accordance with Security Executive Agent Directive (SEAD) 5, "Collection, Use, and Retention of Publicly Available Social Media Information in Personnel Security Background Investigations and Adjudications," only authorized investigative and adjudicative agencies may conduct such checks. The Defense Counterintelligence and Security Agency is the Army's investigative service provider.

In accordance with U.S. laws, the Army does not conduct surveillance on U.S. persons with the exception of authorized counterintelligence and law enforcement investigations. Deputy Chief of Staff, G–2 memorandum, "Army Implementation of

SEAD 3, Reporting Requirements for Personnel with Access to Classified Information or Who Hold a Sensitive Position," requires all Army personnel to self-report derogatory information. All personnel are also required to report knowledge of derogatory information regarding other covered individuals to their designated security office. Derogatory information could include publicly available information observed on social media or similar platforms. When this information is reported to Commanders, the Army takes action through security channels, as appropriate.

Admiral FRANCHETTI. While current DOD policies allow for "Consent to Monitoring" on Government systems, current DOD Policy for Insider Threat (InT) programs does not allow for social media monitoring. All DON personnel (Military/Civilian/Contractor) can report possible InTs to the Navy Hub; if an alert is submitted to the Navy Hub, commands are contacted and/or the alert may be pushed to the correct agency i.e. NCIS, Insider Threat, Special Security Office/Command Security Manager, etc. for action.

General SMITH. The Marine Corps does not monitor Social Media accounts. We have published a handbook for all marines called, "The Social Corps" which provides guidance for activities that are of concern while operating in the Social Media environment.

General ALLVIN and General OMM00*PSON. The Department of the Air Force (DAF) does not currently screen social media for personnel security vetting purposes. Social media screening for vetting is authorized by servicemember consent and is the responsibility of the Defense Counterintelligence and Security Agency. However, the DAF Counter Insider Threat Hub reviews publicly available information in support of active insider threat investigations. Those reviews typically occur in cases that include harm to self or others, mental health concerns, substance abuse, expressions of ill-will against the U.S. Government, prohibited extremism, terrorism, or criminal affiliations. When pursuing these efforts, the Hub identified DOD policy that unintentionally prohibits analysts from viewing publicly available social media information. As a result, the DAF Counter Insider Threat Program is working with USD(I&S) to update DOD policy that would enable the Hub to access publicly available social media information.

68. Senator KING. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, are not non-discolsure agreements supposed to last in perpetuity?

General GEORGE. Yes. Prior to being granted access to classified national security information, Army personnel, including contractors, are required to sign a non-disclosure agreement (Standard Form 312, "Classified Information Nondisclosure Agreement"). The non-disclosure agreement offers detailed instructions concerning the protection of classified national security information and acknowledges that their responsibility to protect classified information from unauthorized disclosure is a lifetime commitment.

Admiral FRANCHETTI. The Standard Form (SF) 312, "Non-Disclosure Agreement (NDA)" is a lifetime obligation to safeguard all protected information, to submit all information intended for publication and/or public release for prepublication review, and to report any unauthorized disclosure of protected information. The SF 312 states "Unless and until I am released in writing by an authorized representative of the U.S. Government, I understand that all conditions and obligations imposed upon me by this Agreement apply during the time I am granted access to classified information, and at all times thereafter."

The Form 4414, "SCI Non-Disclosure Agreement" is a legal obligation to safeguard Sensitive Compartmented Information (SCI). The Form 4414 states "Unless and until I am released in writing by an authorized representative of the Department or Agency that last provided me with access to SCI, I understand that all conditions and obligations imposed on me by this Agreement apply during the time I am granted access to SCI, and at all times thereafter."

General SMITH. Yes, and that is what is briefed to every person who signs one. They are then forwarded for inclusion in either the military or civilian service file.

General ALLVIN and General THOMPSON. Yes. Prior to access to classified information, the individual is required to sign the Standard Form 312, Classified Information Non-Disclosure Agreement, which outlines one's lifelong obligations to protect national security classified information while granted access. Continued compliance with the SF 312 obligations is also reiterated during mandatory annual security training and the individual's exit interview.

69. Senator KING. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, the Department of Defense has ordered a "com-

prehensive" review of the military's security programs, policies, and procedures. What is each service doing at the unit level to address this?

General GEORGE. The Army supports the OSD-led 45-day review of security programs, policies, and procedures. To support the review, the Army issued a data call to quickly assess its security posture in accordance with Department of Defense (DOD) guidance. The data call results are informing DOD's development of an initial findings report, which will shape future security reform initiatives across both the Defense Security Enterprise and the Army Intelligence and Security Enterprise.

The Army G–2 is publishing an execution order (EXORD) to provide implementation guidance to improve Commanders' awareness of, and responsiveness to, security and cybersecurity vulnerabilities. The EXORD looks to strengthen the Command security programs through the development and implementation of an automated Army-wide oversight platform that will assist and inform Army senior leaders and Commanders in understanding and complying with security functions within their formations. Furthermore, the EXORD will harden cybersecurity processes by reinforcing and monitoring security controls and audit logging.

Admiral FRANCHETTI. As Navy Head of the IC Element (HICE) designated Sensitive Compartmented Information (SCI) Security Program authority, Special Security Office (SSO) Navy authored NAVADMIN 169/23, "SUBJ: U.S. Navy Special Security Office (SSO) Sensitive Compartmented Information (SCI) Policy and SCI Facility (SCIF) Operations." The NAVADMIN was released by VADM Trussler, DCNO for Information Warfare, OPNAV N2N6, on 28 July 2023. The NAVADMIN identified several actions aimed at increasing SCI security readiness and accountability and reinforcing existing and emerging SCIF security requirements IAW SECDEF Memo of 30 June 2023. The NAVADMIN directed Commanders and Heads of DoN activities to review the SECDEF Memo and examine the current procedures and readiness to identify adjustments that improve Navy's security posture. Specific unit level requirements in the NAVADMIN included ensuring all personnel have a valid and appropriate security clearance, have executed the appropriate Non-Disclosure Agreements, and have a valid need to know before allowing access to classified information at any level. It also stated commanders managing SCIFs must have established procedures to ensure protection of classified national security information and will ensure all accredited SCIFs comply with the requirements in the Intelligence Community Directive 705.

General SMITH. The Marine Corps forwarded the DOD guidance to every command in the Marine Corps for execution. Further, we are incorporating the requirements of the task in our Inspector General Functional Area (FA) Inspection checklist to ensure we evaluate these requirements over time with every command that we inspect and for every command which uses the FA Checklist, as they are required to do, for self-evaluation.

General ALLVIN and General THOMPSON. The DAF directed an enterprise-wide security standdown, requiring commanders and civilian equivalents to reiterate how each person has an individual responsibility to protect classified information. During the standdown, each activity was required to conduct a self-assessment of their security programs (Controlled National Security Information) for compliance and effectiveness. A review of the DAF policies regarding information security, personnel security and insider threat was conducted to determine any gaps or issues needing changes. Further, a specific review is ongoing for DAF classified networks and systems to evaluate compliance with specified security controls including direction to harden cybersecurity processes.

70. Senator KING. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, what specific risk mitigation measures have been taken against unauthorized disclosures?

General GEORGE. A comprehensive set of protections are in place to safeguard classified national security information from unauthorized disclosure. Protections begin with the security clearance process, user activity monitoring, "least privilege and access control" security controls, audit logging, mandatory initial and annual information security training, non-disclosure agreements, pre-publication reviews, inspections, and physical security measures (i.e. locks, safes, secure rooms, physical barriers to entry, secure communications systems, intrusion detection systems).

Admiral FRANCHETTI. Navy personnel were directed to complete the SECNAV-mandated DON Information Security training per DUSN I&S tasker (DON–230512–TFJQ). Special Security Office (SSO) Navy posted this training to the SSO Navy SharePoint and identified the requirement in the SSO Navy Naval Intelligence Security Policy Directive 004–23. The training is also available to Navy personnel in Total Workforce Management Service, a web-based tool that provides common training access across the Navy. Navy Sensitive Compartmented Information indoctri-

nated personnel are required to take annual security refresher training, to include Unauthorized Disclosure training. Training is tracked at the command level and compliance is reported to the SSO Navy via an Annual SCI Program Roll Up requirement.

Additionally, SSO Navy authored NAVADMIN 169/23, "SUBJ: U.S. Navy Special Security Office (SSO) Sensitive Compartmented Information (SCI) Policy and SCI Facility (SCIF) Operations." The NAVADMIN was released by VADM Trussler, DCNO for Information Warfare, OPNAV N2N6, on 28 July 2023. The NAVADMIN identified several actions aimed at increasing SCI security readiness and accountability and reinforcing existing and emerging SCIF security requirements IAW SECDEF Memo of 30 June 2023, all to reduce the possibility of unauthorized disclosures. The NAVADMIN directed Commanders and Heads of DON activities to review the SECDEF Memo and examine the current procedures and readiness to identify adjustments that improve Navy's security posture. Specific unit level requirements in the NAVADMIN included ensuring all personnel have a valid and appropriate security clearance, have executed the appropriate Non-Disclosure Agreements, and have a valid need to know before allowing access to classified information at any level. It also stated commanders managing SCIFs must have established procedures to ensure protection of classified national security information and will ensure all accredited SCIFs comply with the requirements in the Intelligence Community Directive 705.

General SMITH. The DOD guidance from #69 above is comprehensive and has directed a review of all in access, additional training, as well as additional "exit checks" to screen for classified information being surreptitiously removed from facilities.

General ALLVIN and General THOMPSON. The DAF implements a layered approach to reducing risk to classified national security information, also referred to in the Department as "security-in-depth". The protection layer begins with suitability determinations for employment, progress to official adjudication for security clearance eligibility, a series of mandated security education, training and awareness events beginning with the employee's in-processing. The layers progress with actions such as non-disclosure agreements, inspections, and finally physical security measures (i.e., locks, safes, secure communications systems, alarms, etc.). In addition to the risk mitigation actions already taking place, the DAF has initiated a deliberate approach to understand the root cause(s) of unauthorized disclosures. The goal of this approach is to find ways to improve the enterprise security posture to reduce the likelihood of future unauthorized disclosures. Our deliberate method will carefully address what is found as the root causes and identify actions for implementation without hampering mission effectiveness, often seen with overcorrecting.

71. Senator KING. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, how is each service protecting itself from insider threats?

General GEORGE. The Army established its insider threat program in 2013 in response to the requirements established by the November 21, 2012 Presidential Memorandum, "National Insider Threat Policy and Minimum Standards for executive branch Insider Threat Programs." The Army's insider threat program has five core functions: (1) ensure the security and safety of Army computer networks; (2) share information across multiple Army functions in order to recognize and counter the presence of insider threats; (3) evaluate personnel security information; (4) train the workforce on insider threat awareness and reporting responsibilities; and, (5) establish a centralized analysis, reporting, and response capability.

Now known as the Army Counter-Insider Threat Program, the Army continues to perform and refine these capabilities across an enterprise-wide collective effort to protect the Army's people, mission, facilities, and technology from harm caused by insider threats. The Counter-Insider Threat Program is an integral part of the Army Protection Program overseen by the Assistant Secretary of the Army for Manpower and Reserve Affairs, and the Deputy Chief of Staff G–3/5/7. Through the collective effort of many cross-functional stakeholders, the Army's Counter Insider Threat Program allows the Army to build readiness, modernize, and project power in support of the Army's commanders worldwide unhindered by the impacts of witting or unwitting insider threats.

Admiral FRANCHETTI. In accordance with the Secretary of Defense (SECDEF) directed review of DOD security policies and procedures on April 14, 2023. The Navy completed a 50 question Security Review and Assessment and provided input from a consolidated Ech 2 and 3 command data call to the Office of the Under Secretary of Defense for Intelligence and Security (OUSD(I&S)).

Additionally, Navy Insider Threat Program disseminated NAVADMIN 170/23 "Policy and Guidance Regarding the Navy Insider Threat Program (InTP)" outlining Navy InTP policy, guidance, and Potential Risk Indicator (PRI) reporting criteria. The InTP maintains Navy mitigations to "prevent, detect, deter, and mitigate insider threat risks from potential malicious or unwitting Navy insiders." The Navy InTP is an effective capability that executes the Navy's insider threat mission as directed by National, DOD, Intelligence Community, SECNAV and OPNAV policies. The Navy InTP NAVADMIN also identifies critical actions to further posture the InTP to assist every Navy command to guard against threats and to mature processes and readiness in order to stay ahead of the constantly evolving threat.

Navy InTP also conducts random polygraphs of privileged users in an effort to identify and mitigate potential threats from privileged users with elevated permissions to information technology systems.

Navy InTP executes a User Activity Monitoring program with monitors user activity on all Navy classified networks (JWICS and SIPRNET) for anomalous, concerning, or inappropriate activity, reporting concerning or malicious activity to the Navy InT Hub. Additionally, Navy has a Strategic Engagement and Outreach program that holds in-person and virtual training for units around the Fleet. The team distributes guidance, newsletters, and provides units with posters and other items to keep sailors, civilians, and contractors informed and aware of the reporting criteria and requirements to the Navy Insider Threat Hub.

SSO Navy HQ coordinates with the Navy InTP personnel when a potential insider threat is identified from a command SSO, providing relevant developed information for Insider Threat to conduct the required assessment.

General SMITH. In response to Executive Order, Department of Defense (DOD), and Department of the Navy (DON) issuances, the Marine Corps established a counter-insider threat capability to address the risks posed by maligned insiders to Marine Corps information, personnel, resources, and mission capabilities.

The Marine Corps' approved a Program of Record at the beginning of fiscal year 2018 to counter insider threats. In November 2020, Marine Corps Order 5510.21, "Marine Corps Counter Insider Threat Program", was published establishing enduring policy for the development, implementation, and sustainment of the Marine Corps Insider Threat Program (MCInTP).

In March 2021, the MCInTP achieved Full Operating Capability (FOC) status from the National Insider Threat Task Force (NITTF) signifying the Program's compliance with federally mandated minimum standards. This achievement represented a significant milestone for the Program and the overall Insider Threat Community. The then NITTF Director, Robert Rohrer, cited the Marine Corps' commitment to the counter insider threat mission as a key factor in the establishment of a successful and proactive Insider Threat Program.

The mission of the MCInTP is to prevent, deter, detect, and mitigate threats posed by insiders to national security and Marine Corps personnel, resources, and mission capabilities. For Program purposes the term insider is defined as "any person with authorized access to DOD resources by virtue of employment, volunteer activities, or contractual relationship with the DOD. This population includes, but is not limited to, Active Duty and Reserve servicemembers, civilian employees, contractors, and officials or employees from Federal, State, local, tribal, and private sector entities affiliated with the Department.

The primary goal of the MCInTP is to prevent the actualization of an insider threat event by identifying personnel exhibiting potential risk indicators and providing them with the resources and assistance needed to restore them to a trusted status.

Understanding that Insider threat is a complex problem set, the Program focuses on the following lines of effort (LOE) to ensure each of the four mission requirements (prevention, detection, deterrence, and mitigation) are adequately addressed.

LOE 1 (Primary): Provide an effective and responsive analytic capability to collect, synthesize, and fuse information.

LOE 2 (Supporting): Execute a strategic communication plan to generate increased awareness of the insider threat problem set.

LOE 3 (Supporting): Integrate NITTF Maturity Framework and DOD Enhanced FOC (EFOC) to maintain pace with evolving threat vectors.

Providing the Marine Corps with an effective analytic capability is the primary LOE because it represents the operational component of countering potential insider risk posed to the organization. The Program employs a Hub construct to manage and refine this analytic capability. The Hub is manned by a cadre of certified Insider Threat Analysts and functional area experts representing law enforcement, behavioral science, legal, human resources, and other applicable domains. Understanding the sensitivity of information and the potential for violating privacy laws

and civil liberties all Insider Threat Analysts must complete a rigorous training curriculum culminating in their obtainment of the Certified Counter-Insider Threat Professional (CCITP) Fundamentals and Analysis Certifications within 2 years of employment. This multi-disciplinary team is specifically tasked with responding to insider risk related alerts and providing analytic support to commands on matters occurring within their organizations that have potential insider risk equity.

The Hub receives alerts of potential insider risks from several different sources to include Command Referrals, the DOD Insider Threat Management and Analysis Center (DITMAC), other DOD Component Hubs, the Defense Counterintelligence and Security Agency Consolidated Adjudications Services (DCSA CAS), Naval Criminal Investigative Service (NCIS), and direct reporting from across the Marine Corps. While all alerts are important, the Hub prioritizes command referrals because they often involve adverse situations that the command is actively addressing through its risk mitigation processes. Acknowledging that risk mitigation is a command responsibility, the Hub assumes a supporting role by providing commanders access to information, functional area expertise, analytic findings, and recommendations to inform their risk mitigation strategies.

While it is often difficult to measure the effectiveness of a prevention focused Program, the increased utilization of the Hub's analytic capability suggest the Program is rapidly trending toward success. For example, in 2022 the Hub responded to 4,648 insider risk related alerts compared to the 1,000 alerts it responded to in 2019. Of those 4,648 alerts, approximately a 1,000 were assigned to an analyst for additional research of which 208 were determined to have met DITMAC reporting thresholds. Another indicator of success is the increased Program utilization among commanders. In the previous 12-months the Hub has supported 35 command referrals, produced 85 formal products for commanders, and conducted 20 onsite command engagements.

General ALLVIN and General THOMPSON. The DAF's Counter-Insider Threat (C-InT) Program mission is to detect, deter, and mitigate risks and prevent potential threats posed by trusted insiders. Potential risk indicators are reported to the DAF C-InT hub through various sources such as Continuous Vetting Alerts, notifications from unit commanders and security personnel, law enforcement channels, user activity monitoring and other sources. The DAF C-InT hub oversees management of threats and works with unit leadership on mitigation strategies. The hub also works with other DOD C-InT leads to share, report, and coordinate on potential risk indicators. In addition to the DAF C-InT hub, the DAF maintains policy, procedures, and training material to support program execution. DAF employees also receive C-InT training as part of their Annual Cyber Awareness Challenge training requirement. The DAF recently established a C-InT Sub-Working Group within the Security Education, Training and Awareness Advisory Council (SETAAC). This forum will focus on education and awareness products, materials, and forums to help educate the DAF workforce when it comes to understand what an Insider Threat is, and how to report it.

72. Senator KING. General George, Admiral Franchetti, General Smith, General Allvin, and General Thompson, what is being done at the deck plate level to ensure access is limited to those who 'need to know'?

General GEORGE. The Army will continue to implement Army Regulation 380–5, "Army Information Security Program," that requires Commanders and security managers all the way to the lowest level to only grant access to classified information when individuals have a need to know, sign a non-disclosure agreement, and possess the requisite eligibility in the DOD system of record for personnel security. The Army will also continue to comply with mandatory initial and annual security briefings that provide guidance on the requirements for access to classified information.

Admiral FRANCHETTI. In accordance with the DOD Manual 5105.21, Volume 3, Navy commands must adhere to the primary security principle of "Need to Know" in safeguarding Sensitive Compartmented Information (SCI) access by granting access to only those persons with appropriate clearance, access approval, cleared identified Need to Know, and appropriate indoctrination. This was recently reiterated in NAVADMIN 169/23. Navy Special Security Offices (SSO) and Senior Intelligence Officers (SIO) are responsible for ensuring the Need to Know is validated for personnel prior to SCI indoctrination. SSO Navy further stresses the importance of Need to Know in the SSO/SSR course.

General SMITH. Every command in the Marine Corps reviews access requirements before a request for investigation is submitted. We review this thoroughly during our inspection process to ensure compliance. Of note, many of these access requirements have both internal and external drivers.

General ALLVIN and General THOMPSON. As part of the DAF-wide Security Standdown, each commander/director was provided training material on how to evaluate "need to know" along with DOD and DAF policy and guidance on this subject. Commanders were directed to review individual access for assigned members. Although we are too early in the review process to determine deliberate, long-term actions, the Secretary of the Air Force, directed immediate actions, such as the review of classified system security controls and conducting a security-focused standdown day, show pointed actions are being taken. The significance of the security-focused standdown enabled commanders, at all levels, the opportunity to further emphasize the importance and individual responsibilities to protect classified information. Following the completion of these immediate actions, longer-term recommendations are being reviewed to mitigate future occurrences.

**APPENDIX**

United States Government Accountability Office

Report to Congressional Committees

September 2023

# DOD SERVICE CONTRACTS

## Actions Needed to Identify Efficiencies and Forecast Budget Needs

GAO-23-106123

GAO Highlights

Highlights of GAO-23-106123, a report to congressional committees

September 2023

# DOD SERVICE CONTRACTS

## Actions Needed to Identify Efficiencies and Forecast Budget Needs

### Why GAO Did This Study

DOD obligates hundreds of billions of dollars each year on service contracts. Despite some progress, DOD has faced challenges with managing service contracts. As such, law required that DOD refine processes to validate service requirements and begin forecasting budget needs across a 5-year period.

A Joint Explanatory statement and House Committee report included provisions for GAO to assess DOD's processes for validating service requirements. This report assesses DOD's (1) trends in service contract obligations for fiscal years 2017–2022, (2) processes for validating service requirements, and (3) progress forecasting budget needs for service contracts over a 5-year period.

GAO reviewed federal procurement data for fiscal years 2017–2022, and selected a major command from each military department based on service contract obligations. GAO reviewed DOD and military department policies and analyzed a nongeneralizable sample of service requirements from each selected major command. GAO also reviewed DOD budget guidance for fiscal years 2023 and 2024, and interviewed DOD officials.

### What GAO Recommends

GAO is making five recommendations, including that: the Air Force and Army update guidance to aggregate and review data on service requirements, and DOD specifies how to forecast budget needs for service contracts. DOD concurred with three recommendations and partially concurred with two based on terminology. GAO believes the recommendations are sound as stated.

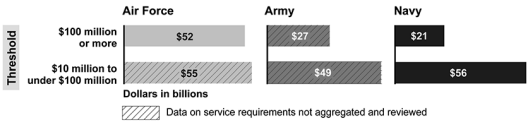
View GAO-23-106123. For more information, contact W. William Russell at (202) 512-4841 or russellw@gao.gov.

### What GAO Found

Services performed by contractors, such as administrative and technical support, account for about half of the Department of Defense's (DOD) contract obligations. Obligations on contracts for services increased from fiscal year 2017 through 2020 before decreasing in fiscal years 2021 and 2022, and ranged from $184 billion to $226 billion over the period.

DOD has processes to validate individual service requirements but lacks some data needed to identify broader efficiencies among those requirements. DOD requires the military departments—the Air Force, Army, and Navy—to provide data that can be reviewed to identify efficiencies for service requirements valued at $10 million or more. GAO found that the Navy aggregates and reviews data on service requirements at that threshold. However, the Army does not aggregate data on service requirements, and the Air Force only does so for service requirements with a value at or above $100 million. This results in missed opportunities to identify efficiencies and potential cost savings among service requirements on contracts totaling billions of dollars, as shown in the figure.

**Military Departments' Obligations on Contracts for Services by Different Dollar Value Thresholds, Fiscal Years 2017–2022**




Source: GAO analysis of Federal Procurement Data System data. | GAO-23-106123

DOD made progress forecasting budget needs for service contracts across a 5-year period, as required by law, but communication challenges affected the military departments' ability to provide reliable data. For example, the military departments lacked timely guidance on implementing the forecasting requirement and the methodology and data sources to use. In January 2023, DOD established a working group to develop a path forward for fully implementing the forecasting requirement. But, this working group is in its early stages, having just recently developed a charter. Further, it has not established timeframes for communicating the methodology and data sources that the military departments should use. Without setting timeframes and clarifying how to forecast service contract budget needs, DOD cannot ensure that future budget submissions—starting with fiscal year 2026—will provide Congress with reliable and useful information for decision-making and oversight.

# Contents

**Abbreviations**

| | |
|---|---|
| CAPE | Cost Assessment and Program Evaluation |
| DOD | Department of Defense |
| FPDS | Federal Procurement Data System |
| FYDP | Future-Years Defense Program |
| NDAA | National Defense Authorization Act |
| USD (A&S) | Under Secretary of Defense for Acquisition and Sustainment |
| USD (C) | Under Secretary of Defense Comptroller |

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
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September 7, 2023

Congressional Committees

The Department of Defense (DOD) obligates hundreds of billions of dollars each year on service contracts. Service contracts involve paying a contractor to perform tasks like administrative and technical support. DOD has faced long-standing challenges with managing service contracts, some of which have been highlighted on our high-risk list since 2001.[1] For example, our past work has found that DOD's approach to acquiring services is largely fragmented and uncoordinated with little visibility into service contract spending. To address such challenges, we have made recommendations and law has required DOD to take certain actions. For example, in August 2017 we recommended that DOD refine its processes for validating service requirements—an assessment against various factors to determine if a service is genuinely needed prior to awarding a contract.[2] DOD was also required by law to begin identifying budget needs across the Future-Years Defense Program (FYDP)—the department's funding plan for the budget year and subsequent four fiscal years—as we recommended in February 2016.[3] Over the last several years, DOD has taken various actions in this regard.

The Joint Explanatory Statement accompanying the National Defense Authorization Act (NDAA) for Fiscal Year 2022, and the House Report 117-397, for the NDAA for Fiscal Year 2023, contained provisions for us to assess DOD's processes for validating service requirements.[4] The House Report 117-397 for the NDAA for Fiscal Year 2023 also contained a provision for us to assess DOD's forecasting of associated budget needs across the FYDP. This report assesses DOD's (1) trends in obligations on contracts for services for fiscal years 2017 through 2022,

[1]GAO, *High-Risk Series: Efforts Made to Achieve Progress Need to be Maintained and Expanded to Fully Address All Areas*, GAO-23-106203 (Washington, D.C.: Apr. 20, 2023).

[2]GAO, *Defense Contracted Services: DOD Needs to Reassess Key Leadership Roles and Clarify Policies for Requirements Review Boards*, GAO-17-482 (Washington, D.C.: Aug. 31, 2017).

[3]GAO, *DOD Service Acquisition: Improved Use of Available Data Needed to Better Manage and Forecast Service Contract Requirements*, GAO-16-119 (Washington, D.C.: Feb. 18, 2016). 10 U.S.C. § 4506 (b).

[4]167 Cong. Rec. H7265, H7304 (Dec. 7, 2021) (joint explanatory statement to the National Defense Authorization Act for Fiscal Year 2022); and H.R. Rep. No. 117-397 at 276 (2022).

(2) processes for validating service requirements, and (3) progress forecasting budget needs for service contracts across the FYDP.

To conduct our work, we analyzed the 6 most recent fiscal years of data from the Federal Procurement Data System (FPDS)—fiscal years 2017 through 2022. We assessed the reliability of the FPDS data by reviewing existing information about the FPDS system and the data it collects, performing electronic testing, and reviewing DOD's Data Quality Certification Reports for the relevant fiscal years. We determined the data were sufficiently reliable for the purposes of reporting on trends in DOD's obligations on contracts for services. We selected the three military departments—the Air Force, Army, and Navy—for our review because they had the highest obligations on contracts for services over this period. From each of these military departments, we selected one major command based on fiscal year 2021 obligations on contracts for services: Air Force Materiel Command, Army Materiel Command, and Naval Sea Systems Command.

We reviewed relevant DOD, military department, and major command guidance, policies, and templates for validating service requirements and forecasting budget needs for service contracts across the FYDP. We selected a random, nongeneralizable sample of 15 results from service requirement reviews—five from each major command—and assessed those results against the factors outlined in DOD Instruction 5000.74.[5] We also interviewed DOD, military department, and major command officials involved with validating service requirements and budgeting for service contracts. For more details on the scope and methodology, see appendix I.

We conducted this performance audit from June 2022 to September 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[5]Department of Defense, *Defense Acquisition of Services*, DOD Instruction 5000.74 (Jan. 5, 2016 and Jan. 10, 2020, incorporating change 1, effective June 24, 2021).

## Background

In 2002, as required by law, DOD established an initial management structure for service acquisitions.[6] This structure was subsequently revised. In 2020, the Under Secretary of Defense for Acquisition and Sustainment (USD (A&S)) was designated the responsibility for developing and maintaining policies, procedures, and best practices for service acquisitions. As shown in table 1, officials at various levels within DOD are involved in managing service contracts.

**Table 1: DOD Entities Involved in Managing Service Acquisitions**

| DOD entity | | Responsibilities |
|---|---|---|
| Under Secretary of Defense (USD) | Acquisition and Sustainment (A&S) | • Responsible for the oversight of service acquisition across DOD.<br>• Develops, distributes, and oversees the implementation of policies for the acquisition of services across DOD.<br>• Serves as the senior official responsible for the defense agencies' acquisition of services.<br>• Annually conducts DOD-wide reviews—Senior Review Panels—of DOD components' policies and processes to identify best practices and efficiencies.[a] |
| Military departments (Air Force, Army, and Navy) | Senior Services Managers | • Responsible for the oversight of service acquisition within the military department.<br>• Work with stakeholders to develop processes for validating service requirements.<br>• Attend reviews to validate service requirements, as applicable.<br>• Identify opportunities to reduce duplication and increase efficiencies.<br>• Provide data on service acquisitions to USD (A&S) to support assessments, trend analysis, and improvements for the acquisition of services. |
| | Major commands | • Approve the validation of service requirements, as applicable.<br>• Track data on service requirements. |
| | Requirement owners[b] | • Identify service requirements.<br>• Track data on service requirements.<br>• Determine the budget needs and obtain funding for the service requirement. |

Source: GAO analysis of Department of Defense (DOD) and military department policies. | GAO-23-106123

[a]This specific responsibility is not outlined in DOD Instruction 5000.74, but was recently outlined in DOD memorandums issued in November 2022 and February 2023.

[b]The requirement owner is the organization responsible for determining the requirements to meet its mission. The organization can be the military department, major command, unit, center, or installation.

[6]National Defense Authorization Act for Fiscal Year 2001, Pub. L. No. 107-107, § 801, as amended in the National Defense Authorization Act for Fiscal Year 2006, Pub. L. No. 109-163, § 812 (codified at 10 U.S.C. § 2330, renumbered § 4501). The management structure for the review and approval of service acquisitions established in 2002 was superseded by DOD Instruction 5000.74 in 2016.

In January 2016, DOD issued an overarching policy for service acquisitions—DOD Instruction 5000.74—that includes responsibilities and processes for the acquisition of services.[7] This instruction outlined that DOD components, such as the military departments, must have a process for analyzing, validating, and prioritizing service requirements, known as service requirements reviews. In January 2020, DOD revised this instruction to adjust the services it governed and encourage the alignment of service requirement reviews and budget processes, among other things.[8] Hereafter, the January 2020 instruction is the version being referenced, unless otherwise specified.

In November 2022, DOD issued a memorandum that delegated USD (A&S) the responsibility for establishing annual DOD-wide reviews of service requirements—known as Senior Review Panels.[9] The intent of these DOD-wide reviews is to have insight into the military departments' and the defense agencies' (e.g., Defense Intelligence Agency, Missile Defense Agency) service requirements and identify opportunities for efficiencies, among other things. USD (A&S) has issued templates to facilitate these DOD-wide reviews.

## DOD's Service Requirement Reviews

Service requirement reviews are a structured process to validate the need for a service before awarding a contract by assessing various factors. DOD Instruction 5000.74 requires DOD components, like the military departments, to have such a process for service requirements with a value of $10 million or more.[10] Table 2 outlines the factors that should be considered during service requirement reviews, such as how a service

[7]Department of Defense, *Defense Acquisition of Services*, DOD Instruction 5000.74 (Jan. 5, 2016).

[8]Department of Defense, *Defense Acquisition of Services*, DOD Instruction 5000.74 (Jan. 10, 2020, incorporating change 1 effective Jun. 24, 2021). DOD updated the services governed by this instruction to align with the statutory changes made in January 2021 to the definition of services as outlined in 10 U.S.C. § 4502(d)(2). For details on the services governed by and excluded from this instruction, see appendix I.

[9]Department of Defense, Memorandum for Senior Pentagon Leadership, Commanders of the Combatant Commands, Defense Agency and DOD Field Activity Directors: *Services Requirements Review Boards and Senior Review Panel Roles and Responsibilities* (Nov. 28, 2022). The Chief Management Officer previously had the responsibilities outlined in this memorandum, but this office was dissolved in October 2021.

[10]Department of Defense, *Acquisition of Services*, DOD Instruction 5000.74 (Jan. 10, 2020, incorporating change 1 effective June 24, 2021). DOD components include the military departments, defense agencies, DOD field activities, and other organizations within the Office of the Secretary of Defense.

helps meet a specific mission, its ranking among other priorities, and the projected cost.

**Table 2: Service Requirement Review Validation Factors**

| Factor | Description |
|---|---|
| Mission need | Explanation of the mission need (or requirement) for the service and the outcomes expected to be achieved. |
| Strategic alignment | How the service supports the broader organizational mission. |
| Issues and risks | Both government and contractor issues and risks affecting the successful execution of fulfilling the service requirement. |
| Workforce analysis | An analysis of the decision to insource or outsource for the service, including any past decisions and why the service cannot be fulfilled with military or civilian personnel. |
| Relationship to other requirements | How the service affects other requirements (positively or negatively). |
| Projected cost of requirement | Estimate of the forecasted cost of the service over at least 5 years. |
| Prioritization | A determination as to whether the service is a lower-priority that can be reduced or eliminated with savings transferred to higher-priorities. |
| Contract and work function | A review and identification of contract and work functions that may be prohibited or require heightened management attention, such as closely associated with inherently governmental or critical functions.[a] |
| Metrics | Metrics to measure the contractor's performance should be considered to the maximum extent practicable. |

Source: Department of Defense Instruction 5000.74. | GAO-23-106123

[a]Inherently governmental and critical functions are central to an entity's mission or operation. Government personnel—civilian or military—must perform inherently governmental functions and contractors can perform critical functions if there are adequate government personnel to monitor the contractor's performance.

Service requirement reviews inform acquisition and budget processes. Service requirement reviews also provide senior leaders with increased visibility into service requirements to identify opportunities for savings and cost avoidance, not only at the major command level but across the military departments and DOD. However, service requirement reviews must be separate from contract reviews that verify compliance with contracting policies and procedures, laws, and regulations.[11]

The military departments have the flexibility to develop their own supplemental guidance and processes to ensure that service requirements are reviewed, validated, and approved. For example, each

[11]10 U.S.C. § 4506(d).

military department has its own guidance for validating service requirements, some of which include:

- identifying what type of process to use (e.g., in-person meeting, emailed correspondence, documents routed through a database, or any combination thereof);
- delegating responsibilities for validating requirements to the appropriate level, such as to major commands within the military departments; and
- setting more stringent requirements, like dollar value thresholds lower than the $10 million threshold set forth in DOD Instruction 5000.74.

## DOD's Budget Process for Service Contracts

Each year DOD uses the planning, programming, budgeting, and execution process (hereafter referred to as the budget process) to determine the funding needed from Congress to fulfill the department's mission. DOD's goal is to prioritize requirements and make department-wide resource allocation decisions for the most effective mix of equipment, manpower, and support attainable within fiscal constraints. During the budget process, DOD presents and justifies its budget to the Congress, which provides a means for decision-making and oversight.

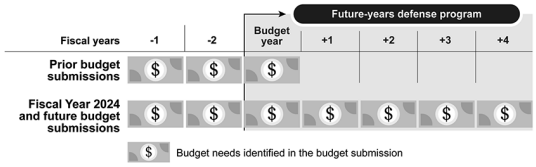
The budget process is governed by DOD Directive 7045.14.[12] This directive designates responsibility for overseeing the budget process to the offices of the Under Secretary of Defense Comptroller (USD (C)) and Cost Assessment and Program Evaluation (CAPE). Each year, USD (C) and CAPE issue guidance for developing the upcoming budget submission. The guidance includes the information requirements, format, and completion deadlines, among other things. The end product is the President's budget request that is generally required to be submitted to Congress by the first Monday of February.

In the past, DOD identified service contract spending for the preceding 2 fiscal years and the budget needs for the current budget year. However, in August 2018, a law was enacted that required DOD to begin identifying

[12]Department of Defense, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, DOD Directive 7045.14 (Jan. 25, 2013, incorporating Change 1, Aug. 29, 2017).

its budget needs across the FYDP.[13] The law also established an initial implementation deadline of October 1, 2021, that was later amended to February 1, 2023.[14] As such, DOD and Congress are now expected to have insight into the contract spending for the preceding 2 fiscal years and the budget needs for service contracts beyond the current budget year, as shown in figure 1.

**Figure 1: Changes to Department of Defense's Identification of Budget Needs for Service Contracts, as of February 2023**




Source: GAO analysis of Department of Defense data. | GAO-23-106123

In addition to the guidance provided by USD (C) and CAPE, the military departments have budgeting personnel at the headquarters-level that issue supplemental guidance and prepare the budget submissions. Major commands and program offices within each of the military departments provide inputs on their funding needs and day-to-day spending. Each military department has its own approach and database for developing its budget request.

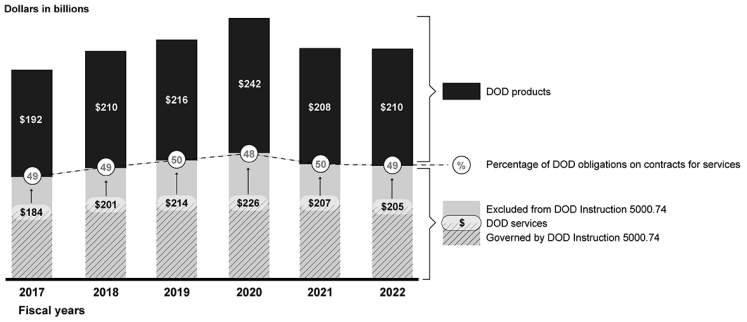
[13]John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115–232, § 818(a) (2018) required DOD to clearly and separately identify the amounts requested and projected for each category of services to be procured by each defense agency, DOD field activity, command, or military installation over the future-years defense program in the annual budget submission.

[14]10 U.S.C. § 4506 (b).

## Services Continue to Account for About Half of DOD's Contract Obligations

From fiscal years 2017 to 2022, acquisition of services accounted for about half of DOD's contract obligations each fiscal year, a trend that we have previously reported.[15] Not all of these services, however, are subject to the review processes established in DOD Instruction 5000.74. For example, in January 2020, DOD excluded some additional services, such as construction and research and development.[16] With the exclusion of these services, up to 59 percent of DOD's obligations on contracts for services from fiscal years 2017 to 2022 were governed by DOD Instruction 5000.74. As shown in figure 2, DOD's obligations on contracts for services peaked in fiscal year 2020, and ranged from $184 billion to $226 billion.

**Figure 2: Department of Defense's (DOD) Obligations on Contracts for Services and Products, Fiscal Years 2017–2022**




Source: GAO analysis of Federal Procurement Data System data. | GAO-23-106123

Note: Contract obligations are rounded to the nearest billion and are in fiscal year 2022 dollars. Some services, like information technology support and medical services, are governed by DOD Instruction 5000.74, whereas others, like construction and research and development, have been excluded as of

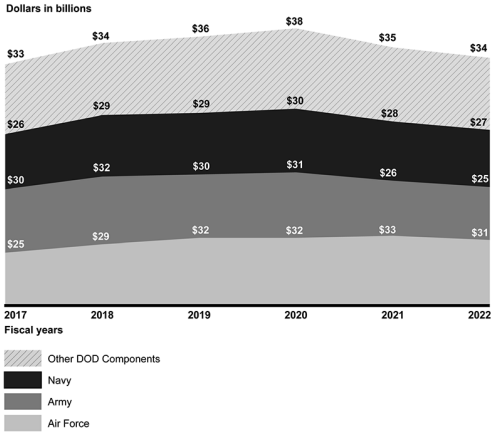
[15]GAO, *Service Acquisitions: DOD's Report to Congress Identifies Steps Taken to Improve Management, But Does Not Address Some Key Planning Issues*, GAO-21-267R (Washington, D.C.: Feb. 22, 2021); GAO-17-482; and GAO-16-119.

[16]To ensure the consistency and comparability of data in our analysis, we applied the exclusions to all fiscal years irrespective of when the exclusion occurred in DOD Instruction 5000.74. See appendix I for additional details on which services are governed by and excluded from DOD Instruction 5000.74.

January 2020. For consistency and comparability, GAO applied these exclusions to all fiscal years in the analysis.

The military departments—the Air Force, Army, and Navy—accounted for about 71 percent of DOD's obligations on contracts for services that were governed by DOD Instruction 5000.74 between fiscal years 2017 and 2022.[17] As shown in figure 3, the Air Force and Navy's obligations on contracts for services increased overall from fiscal years 2017 through 2022, whereas the Army's fluctuated but ultimately decreased by $5 billion—or 17 percent.

**Figure 3: Military Departments' Obligations on Contracts for Services Governed by Department of Defense (DOD) Instruction 5000.74, Fiscal Years 2017–2022**



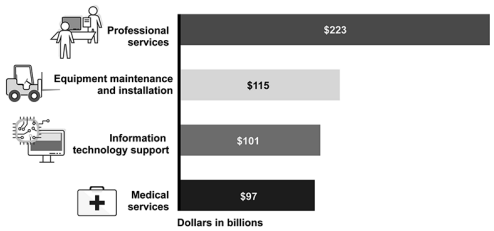

Source: GAO analysis of Federal Procurement Data System data. | GAO-23-106123

Note: Contract obligations are rounded to the nearest billion and are in fiscal year 2022 dollars. Some services, such as construction and research and development, have been excluded from DOD Instruction 5000.74 as of January 2020. For consistency and comparability, GAO applied these exclusions to all fiscal years in the analysis.

[17]Given the scope of this review, from this point forward, our analysis is limited to only those service contract obligations that are governed by DOD Instruction 5000.74. See appendix I for additional details.

Most of DOD's obligations on contracts for services governed by DOD Instruction 5000.74 from fiscal years 2017 to 2022 were in four categories: (1) professional services, (2) equipment maintenance and installation, (3) information technology support, and (4) medical.[18] Professional services—which include tasks like engineering and technical support and advisory and administrative services—was the top category for DOD and accounted for a third of its obligations on contracts for services each fiscal year. As shown in figure 4, contract obligations for professional services totaled $223 billion from fiscal years 2017 to 2022. Professional services was also the top category for the Air Force, Army, and Navy over this period, accounting for about 43 percent, 35 percent, and 30 percent of their contract obligations, respectively.

**Figure 4: Department of Defense's (DOD) Top Service Categories Governed by DOD Instruction 5000.74, Fiscal Years 2017–2022**




Source: GAO analysis of Federal Procurement Data System data; GAO (icons). | GAO-23-106123

Note: Contract obligations are rounded to the nearest billion and are in fiscal year 2022 dollars. Some services, such as construction and research and development, are excluded from DOD Instruction 5000.74 as of January 2020. For consistency and comparability, GAO applied these exclusions to all fiscal years in the analysis.

When contracting for services, DOD must determine the type of contract vehicle, contract pricing type, and whether or not competition and small businesses will be used. Between fiscal years 2017 and 2022, of those services governed by DOD Instruction 5000.74:

[18]For a list of the categories and the types of services included in them, see appendix II.

- About 54 percent of DOD's obligations on contracts for services were on indefinite delivery contracts.[19] Indefinite delivery contracts are used to acquire services from a contractor when the government does not know the exact timeframes and number of personnel needed at the time of the contract award, which allows orders to be placed when these are known.[20]
- Approximately 58 percent of DOD's obligations on contracts for services were fixed-price. Our prior work has shown that fixed-priced contracts are beneficial because the government generally pays a set price and the contractor generally assumes the risk and responsibility for any cost overruns.[21]
- Nearly 70 percent of DOD's obligations on contracts for services were competed contracts. The Office of Federal Procurement Policy—the entity that provides government-wide policies and procedures for acquisitions—has emphasized that competition presents the opportunity for significant cost savings and improves contractor performance, among other benefits.[22]
- About 27 percent of DOD's obligations on contracts for services were awarded to small businesses.

[19]There are three types of indefinite-delivery contracts: definite-quantity contracts, requirements contracts, and indefinite-quantity contracts. The appropriate type of indefinite-delivery contract may be used to acquire supplies and/or services when the exact times and/or exact quantities of future deliveries are not known at the time of contract award. FAR 16.501-2.

[20]GAO, *Defense Contracting: Use by the Department of Defense of Indefinite-Delivery Contracts from Fiscal Years 2015 through 2017*, GAO-18-412R (Washington, D.C.: May 10, 2018).

[21]Fixed-price types of contracts provide for a firm price or, in appropriate cases, an adjustable price. Federal Acquisition Regulation 16.202-1. GAO, *Contracting Data Analysis: Assessment of Government-wide Trends*, GAO-17-244SP (Washington, D.C.: Mar. 9, 2017).

[22]The Office of Management and Budget's Office of Federal Procurement Policy has issued various memorandums on increasing competition in government contracting. See appendix I for details on how we defined competitive contracts for our analysis.

## DOD Validates Individual Service Requirements but Lacks Data Needed to Collectively Prioritize and Identify Efficiencies

The military departments have processes to validate individual service requirements as required by DOD Instruction 5000.74. The Air Force's process, however, does not consistently include comprehensive reviews to collectively prioritize service requirements across each major command. Further, we found that two of the three military departments do not aggregate and review data on service requirements needed to facilitate the recently reinstated DOD-wide reviews intended to identify broader efficiencies.

### Military Departments Have Processes to Validate Service Requirements, but the Air Force Does Not Consistently Prioritize Across Major Commands

The military departments have processes to review, prioritize, and validate individual service requirements. We found, however, that the Air Force does not consistently conduct comprehensive reviews to collectively prioritize service requirements at its major commands. DOD Instruction 5000.74 mandates that service requirements valued at or above $10 million be reviewed, prioritized, and validated and outlines nine factors that should be considered.[23] One of the factors is prioritization—a determination as to whether a service requirement is lower-priority and can be reduced or eliminated with savings transferred to higher-priorities. According to the instruction, comprehensive reviews tiered at different levels within a military department, such as the major commands, enhance the quality of requirements prioritization. In August 2017, we reported that collectively prioritizing service requirements can provide opportunities to reduce duplicative requirements and identify cost savings and efficiencies.[24]

Based on our review of policies and validated service requirements, we found that the Army and Navy major commands we assessed conduct comprehensive reviews to collectively prioritize service requirements. The Army Materiel Command conducts quarterly reviews of service requirements. Army Materiel Command officials told us that these reviews are for service requirements with a value at or above $10 million. The Naval Sea Systems Command holds annual reviews for service requirements at or above $1 million. Officials from both major commands told us that they have been able to identify efficiencies through such reviews. For example, Army Materiel Command officials told us that they

[23]DOD Instruction 5000.74.

[24]GAO-17-482.

were able to consolidate multiple service requirements for training under a single contract as part of their quarterly reviews.

The Air Force Materiel Command also has reviews that involve a comprehensive look at service requirements, but these are only mandated for service requirements valued at $100 million or more and are not held on a recurring basis. Air Force policy assigns major commands the responsibility for reviewing service requirements with a value under $100 million.[25] Air Force Materiel Command officials told us that they, in turn, assigned the responsibility to their six centers.[26] Five of the six centers have a senior official who can review service requirements under $100 million to identify enterprise-wide solutions and other efficiencies that could result in cost savings.[27] For example, the Air Force Life Cycle Management Center senior official cited an example of consolidating 26 separate task orders for advisory services into a single contract.

Nonetheless, we found that collective prioritization of service requirements under $100 million occurs on an informal and ad hoc basis. Specifically, two of the four service requirements we assessed with a value between $10 million and under $100 million were not comprehensively reviewed and collectively prioritized within the center or major command. Air Force Materiel Command officials said that this is because recurring comprehensive reviews of service requirements with a value between $10 million and under $100 million are not required by Air Force policy. Air Force officials told us that reviewing and prioritizing service requirements under $100 million is a best practice, but there is no requirement to do so within the Air Force Materiel Command's centers which could then inform comprehensive reviews at the major command level.

Air Force Materiel Command officials told us that they are in the process of revising the responsibilities for the senior officials over the centers, but the revisions do not include recurring comprehensive reviews to

[25]Department of the Air Force, *Acquisition of Services*, Air Force Instruction 63-138 (Sept. 30, 2019).

[26]The Air Force Materiel Command's six centers include: (1) Air Force Installation and Mission Support Center, (2) Air Force Life Cycle Management Center, (3) Air Force Nuclear Weapons Center, (4) Air Force Research Laboratory, (5) Air Force Sustainment Center, and (6) Air Force Test Center.

[27]Department of the Air Force, *Air Force Materiel Command Strategic Services Program Manager's (SSPM) Roles and Responsibilities* [memorandum] (Apr. 7, 2020).

collectively prioritize service requirements. Conducting recurring comprehensive reviews of service requirements valued between $10 million and under $100 million, would ensure all service requirements that must be reviewed, prioritized, and validated are captured. Thus, until the Air Force clarifies its policy to ensure service requirements with a value between $10 million and under $100 million are comprehensively reviewed and prioritized on a recurring basis, the Air Force may be missing opportunities to reduce duplication and achieve cost savings and efficiencies.

## DOD-Wide Reviews of Service Requirements Reinstated to Identify Broader Efficiencies, but Some Military Departments Are Not Aggregating Data

USD (A&S) recently reinstated DOD-wide reviews of service requirements with a value of $10 million or more to identify efficiencies across the department and best practices, among other things.[28] But, these reviews may be limited due to inconsistencies in the military departments' aggregation and review of data on service requirements. USD (A&S) is the lead for these DOD-wide reviews, which are attended by the military departments' Senior Services Managers. To accomplish these reviews, USD (A&S) issued a template to aggregate data for all service requirements valued at or above $10 million, identify possible efficiencies, and discuss any barriers to achieving them. DOD Instruction 5000.74 requires the military departments to provide USD (A&S) with data on the acquisition of services and the Senior Services Managers are responsible for identifying efficiencies. In order to do so, however, the necessary data must be aggregated and reviewed.

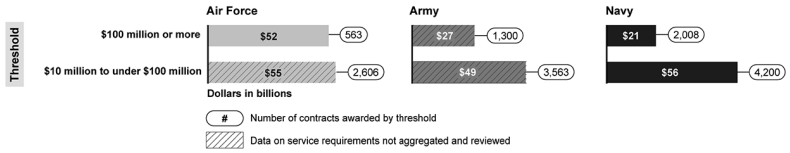
We found, however, that only one of the three military departments requires a senior official, such as the Senior Services Manager, to aggregate and review data on service requirements with a value of at least $10 million to facilitate more comprehensive reviews across a military department or DOD-wide. Specifically, the Navy Senior Services Manager aggregates and reviews such data. The Navy Senior Services Manager provided an example where this review enabled the Navy to consolidate multiple requirements for professional services under one enterprise-wide contract, thereby saving resources by not having multiple major commands taking the time to award contracts for the same services. Navy officials said that identifying these types of efficiencies can

[28]These department-wide reviews are known as Senior Review Panels. See the Department of Defense, Memorandum for Senior Pentagon Leadership, Secretaries of the Military Departments, Defense Agency and DOD Field Activity Directors: *Service Requirements Review Boards and Senior Review Panel Implementation for Fiscal Year 2023* (Feb. 13, 2023).

free up funding to spend on higher priorities, such as acquiring ships and aircraft.

In contrast, however, the Air Force and Army do not consistently aggregate and review data on service requirements valued at or above $10 million. The Air Force does not currently aggregate and review data for service requirements with a value between $10 million and under $100 million. The Army does not currently aggregate and review data on any service requirements. Air Force and Army officials told us that their Senior Services Managers, for example, are not aggregating and reviewing this data because such responsibilities are not outlined in their policies.[29] Army officials said that they are updating their policy to aggregate and review data on service requirements but have not yet determined how to use this data to identify Army-wide efficiencies or facilitate DOD-wide reviews. As a result, data on service requirements totaling billions of dollars are not being reviewed by the Air Force and Army to identify potential cost savings and other benefits (see fig. 5).

**Figure 5: Military Departments' Obligations on Contracts for Services by Different Dollar Value Thresholds, Fiscal Years 2017–2022**




Source: GAO analysis of Federal Procurement Data System data. | GAO-23-106123

Note: Contract obligations are rounded to the nearest billion and are in fiscal year 2022 dollars. Some services, such as construction and research and development, were excluded from DOD Instruction 5000.74 as of January 2020. For consistency and comparability, GAO applied these exclusions to all fiscal years in the analysis.

[29]Air Force Instruction 63-138 and Army Directive 2017-15, *Managing and Overseeing the Acquisition of Services*, (Apr. 25, 2017), which is the interim policy for the planning, approval, and execution of service contracts until the Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology) updates Army Regulation 70-13, *Management and Oversight of Services Acquisitions*, to incorporate recent DOD and Army best practices for acquiring services. An official from the Office of the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) told us that the updated Army Regulation 70-13 will be published in fiscal year 2024.

Our prior work has noted benefits that can occur by aggregating and reviewing data on service requirements. For example, in July 2017, we reported that the defense agencies were able to identify hundreds of millions of dollars in cost savings by aggregating and reviewing data on service requirements.[30] While we found that the Navy Senior Services Manager is aggregating data to facilitate more comprehensive reviews of service requirements, this approach is not being leveraged by the Air Force and Army. Without aggregating and reviewing data on service requirements at the military department level, the Air Force and Army may face challenges identifying broader cost savings and efficiencies, and limit what can be achieved during DOD-wide reviews.

## DOD Began Forecasting Budget Needs for Service Contracts, but Communication Challenges Have Hindered Efforts

DOD has actions underway to forecast budget needs for service contracts, as required by law, but communication challenges affected the military departments' ability to provide reliable data by the February 1, 2023 implementation deadline.[31] In past budget submissions, DOD was only required to identify its service contract budget needs for the upcoming budget year. But, in line with our 2016 recommendation, DOD is now required to identify its budget needs for services contracts over the FYDP—the current budget year and subsequent 4 fiscal years.[32] USD (C) and CAPE—the offices responsible for overseeing the budget process—said this is a new and considerable change that will take time to fully implement. The military departments faced challenges providing their first forecast of budget needs over the FYDP, in part, because of USD (C)'s and CAPE's lack of timely communication and guidance on the methodology and data sources to use.

**Timing of communication**. We found that USD (C) and CAPE did not communicate with the military departments about the forecasting requirement until just shortly before the implementation deadline.[33] USD

[30]GAO, *Defense Efficiency Initiatives: DOD Needs to Improve the Reliability of Cost Savings Estimates*, GAO-17-724 (Washington, D.C.: July 24, 2017).

[31]10 U.S.C. § 4506 (b).

[32]10 U.S.C. § 4506 (b). GAO-16-119.

[33]The forecasting requirement was in a law enacted in August 2018—John. S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, § 818(a) (2018)—and had an initial deadline of October 1, 2021, thereby providing DOD over 3-years lead-time. A subsequent law amended the deadline to February 1, 2023, which added over a year to DOD's lead-time. National Defense Authorization Act for Fiscal Year 2022, Pub. L. No. 117-81, § 815(a) (2021) (codified at 10 U.S.C. § 4506(b)).

(C) and CAPE told us that they notified the military departments about the forecasting requirement by including it in the budget guidance for fiscal year 2024 issued in June 2022.[34] However, military department officials we spoke with said they were not initially aware of the forecasting requirement being added to the budget guidance because it was not called out or highlighted in the budget guidance, which is typically lengthy and the same from year-to-year. These military department officials also said that the forecasting requirement was not discussed during recurring meetings with USD (C) and CAPE before or after the budget guidance was issued. Consequently, the military departments had about 2 months to submit their first budget forecasts for service contracts to meet DOD's internal deadline of August 2022, although the consensus among officials was that more lead-time was needed.[35]

**Methodologies and data sources**. We found that USD (C) and CAPE also did not specify the methodology or data sources that the military departments should use to forecast their budget needs for service contracts across the FYDP in the fiscal year 2024 budget guidance. USD (C) and CAPE deferred the decision on what methodology and data sources to use to the military departments. Without specific guidance, the military departments completed their first forecast of budget needs for service contracts by adjusting their fiscal year 2024 budget data for inflation rather than other methods. For example, GAO's Cost Estimating and Assessment Guide outlines methods such as building a bottoms-up estimate or using the average of data from multiple fiscal years to better account for any highs or lows.[36] Some military department officials we spoke with said that the forecasted amounts may not be accurate and may be under- or over-stated because changes to budget needs from new or ending service contracts are not reflected.

DOD officials told us that data was the other challenge to forecasting budget needs for service contracts across the FYDP in the fiscal year

[34]USD (C) and CAPE included the requirement to forecast budget needs for service contracts in their fiscal year 2023 budget guidance. However, DOD officials told us they did not implement it for the fiscal year 2023 budget submission because law amended the implementation deadline from October 1, 2021, to February 1, 2023. National Defense Authorization Act for Fiscal Year 2022, Pub. L. No. 117–81, § 815 (a) (2021) (codified at 10 U.S.C. § 4506 (b)).

[35]The DOD internal deadline is the date the budget estimate submission is due to USD (C).

[36]GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs*, GAO-20-195G (Washington, D.C.: Mar. 12, 2020).

2024 budget submission. Specifically, the military departments' budgeting databases at the headquarters level—where the budget submission is compiled—do not currently capture the out-years of the FYDP. Military department officials said they are inquiring about modifications to their budgeting databases. But, military department officials explained that such modifications will take time to complete.

Although the military departments' databases at the headquarters level do not currently capture the out-years of the FYDP, the data on budget needs over that timeframe is available. For example, consistent with what we reported in February 2016, this data continues to be maintained by program offices and requirement owners within each of the military departments.[37] However, military department officials at the headquarters level who compile the budget submission told us that they did not have sufficient lead-time to request it from the program offices and requirements owners. Military department officials cited similar accessibility limitations with data on the projected costs across the FYDP identified when validating a service requirement—another potential data source—because this data is also maintained by program offices and requirement owners.[38] USD (C) and USD (A&S) officials also noted their limited accessibility to this potential data source, but agreed that such data could be used to meet the budget forecasting requirement.

Federal internal control standards state that an entity should have a means to communicate information requirements in a timely manner to ensure objectives are achieved.[39] USD (C) and CAPE, per DOD policy, are responsible for communicating the information requirements for the annual budget submission.[40] USD (C) and CAPE officials told us that the February 1, 2023, statutory deadline informed the timing of their communication for the forecasting requirement. Further, these officials said that they were able to see the possible alternatives for calculating the

[37]GAO-16-119.

[38]Department of Defense, *Defense Acquisition of Services*, DOD Instruction 5000.74 (Jan. 10, 2020, incorporating change 1 effective June 24, 2021).

[39]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: Sept. 10, 2014).

[40]DOD Directive 7045.14.

out-years of the FYDP by not being overly prescriptive in the budget guidance for the first forecast.

USD (C) and CAPE said they are taking steps to better communicate about the forecasting requirement for future budget submissions. For example, USD (C) and CAPE, in coordination with others, have finalized an implementation plan, as directed by Congress.[41] However, we reviewed this plan and found that it does not include specifics on how to forecast budget needs for service contracts. Also, in January 2023 DOD established a working group to discuss various aspects of service acquisitions, which will include USD (C), CAPE, and USD (A&S), among others. USD (C) and CAPE officials told us in April 2023 that the working group could serve as a means for communicating the information requirements for forecasting budget needs, but the working group is still in its early stages and has not yet discussed the forecasting requirement. DOD completed a charter for the working group—a best practice highlighted in our prior work—in June 2023 after receiving a copy of our draft report, but officials did not establish timeframes for identifying the methodology and data sources to use for the forecasting requirement.[42] USD (C) and CAPE typically issue budget guidance between June and August each year, so the working group is unlikely to provide the needed information for the fiscal year 2025 budget submission. However, the working group could provide the needed information for the fiscal year 2026 budget submission to ensure the military departments are positioned to more reliably forecast budget needs for service contracts.

Finalizing an implementation plan and establishing a working group are positive steps, and the latter could address our February 2016 recommendation to the Secretary of Defense to establish a mechanism for requirements, budgeting, and other stakeholders to coordinate on service acquisitions.[43] We subsequently designated this as a priority

[41]167 Cong. Rec. H7265, H7304 (Dec. 7, 2021) (joint explanatory statement to the National Defense Authorization Act for Fiscal Year 2022). The deadline for DOD to deliver the implementation plan to Congress was June 1, 2022, but DOD finalized and delivered the implementation plan to Congress on May 9, 2023. Officials from USD (A&S) and USD for Personnel and Readiness are involved in the implementation plan and working group.

[42]GAO, *IT Workforce: Key Practices Help Ensure Strong Integrated Program Teams; Selected Departments Need to Assess Skill Gaps*, GAO-17-8 (Washington, D.C.: Nov. 30, 2016).

[43]GAO-16-119.

recommendation for DOD to address.[44] In addition, clarifying how the working group will enable more timely communication of information requirements for forecasting budget needs, including the methodology and data sources to use, could better position DOD to ensure that the data provided to Congress is reliable and useful for decision-making and oversight.

## Conclusions

Given the magnitude of DOD's spending on services and a finite budget, it is imperative that DOD identify efficiencies where possible. To do this, DOD must ensure that the military departments are conducting more comprehensive reviews of service requirements, as advised by DOD Instruction 5000.74. For instance, addressing gaps in the Air Force's process can ensure service requirements are collectively prioritized within major commands to identify those that may be duplicative or unnecessary. Further, aggregating and reviewing data within the Air Force and Army on service requirements valued at $10 million or more—given the billions of dollars spent at this threshold–can provide insight into the totality of services and be explored for broader cost savings and efficiencies.

Moreover, continued emphasis and communication on forecasting budget needs for service contracts will help both DOD and Congress better understand and more efficiently manage current and future spending on services. DOD's efforts to forecast budget needs for service contracts is evolving and will take time to fully implement. In this regard, DOD plans to use the broad framework of its recently finalized implementation plan and newly established working group. Nonetheless, DOD has an opportunity to ensure more timely communication of the information requirements for the budget submission, to include the methodology and data sources to use when forecasting budget needs for service contracts across the FYDP. Otherwise, DOD will not be well-positioned to provide Congress more reliable budget forecasts in the future to support decision-making and oversight.

[44]GAO identifies recommendations as priority because they are important to helping save the federal government money, aiding in congressional decision-making, and improving government programs, among other things. The Comptroller General of the United States provides an annual report on priority recommendations to encourage action. See GAO, *Priority Open Recommendations: Department of Defense*, GAO-23-106305 (Washington, D.C.: May 16, 2023).

## Recommendations

We are making a total of five recommendations, including two to the Secretary of the Air Force, one to the Secretary of the Army, and two to the Secretary of Defense.

The Secretary of the Air Force should revise its service acquisition policy to ensure major commands collectively prioritize service requirements valued between $10 million and under $100 million. (Recommendation 1)

The Secretary of the Air Force should revise its service acquisition policy to require an official who is responsible for the oversight of services, such as the Air Force's Senior Services Manager, to aggregate and review data on service requirements valued between $10 million and under $100 million to identify efficiencies. (Recommendation 2)

The Secretary of the Army should revise its service acquisition policy to require an official who is responsible for the oversight of services, such as the Army's Senior Services Manager, to aggregate and review data on service requirements valued at $10 million or more to identify efficiencies. (Recommendation 3)

The Secretary of Defense should require that the Under Secretary of Defense, Comptroller, in coordination with other relevant offices involved in the recently established services working group, to develop a charter that includes steps that ensure information requirements for the fiscal year 2026 and future budget submissions are communicated to the military departments in a timely manner. (Recommendation 4)

The Secretary of Defense should ensure that the Under Secretary of Defense, Comptroller, in coordination with other relevant offices involved in the recently established services working group, specifies the data sources and methodology for forecasting budget needs for service contracts across the Future-Years Defense Program to inform its fiscal year 2026 and future budget submission. (Recommendation 5)

## Agency Comments and Our Evaluation

We provided a draft of this report to DOD for review and comment. In its comments, which are reprinted in appendix III and summarized below, DOD concurred with the first, second, and fourth recommendations and identified steps it has or plans to take to address them. DOD partially concurred with the third and fifth recommendations, as discussed below. DOD had no technical comments on the draft report.

DOD concurred with our first two recommendations for the Air Force to prioritize, aggregate, and review data on service requirements valued

between $10 million and under $100 million to identify efficiencies. The Air Force plans to update pertinent agreements with each major command and other organizations to ensure (1) service requirements between those thresholds are prioritized, and (2) data on service requirements are reviewed annually by the Senior Services Manager to identify Air Force-wide efficiencies. We will monitor the Air Force's actions to determine if they meet the intent of our recommendations.

DOD partially concurred with our third recommendation for the Army to revise its service acquisition policy to require an official, such as the Senior Services Manager, to aggregate and review data on service requirements valued at $10 million or more to identify efficiencies. The Army did not identify any issues with revising its policy or aggregating and reviewing service requirements, but noted its authority to determine which official to charge with this responsibility. We agree that it is up to the Army to determine the official to charge with this responsibility and do not believe the wording of our recommendation equates to assigning responsibility to a certain official.

DOD concurred with our fourth recommendation on establishing a charter for the Services Acquisition Working Group to ensure information requirements for the budget submission are communicated in a timely matter. However, DOD requested that we remove this recommendation because it issued a charter in June 2023 that created the Service Acquisition Executive Steering Committee as the forum to address cross-functional issues for service acquisitions. DOD stated that this charter also identifies the responsibilities of the Services Acquisition Working Group, which include sharing information and lessons learned and improving the oversight, management, and execution of service contracts. DOD provided the charter along with its response to our recommendations. We will review the charter to determine whether it addresses our recommendation.

DOD partially concurred with our fifth recommendation on specifying the methodology and data for forecasting budget needs for service contracts across the future-years defense program. DOD requested that we revise the recommendation to use the term "identify" versus "specify." However, as noted in our findings, the military departments lacked specific guidance on how to forecast for the fiscal year 2024 budget submission, which led to the use of projections that could under- or over-state budget needs. Thus, we continue to believe that specifying the methodology and data sources for forecasting is necessary to provide Congress with reliable data for decision-making and oversight.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense, the offices of the Under Secretary of Defense, Comptroller, and Cost Assessment and Program Evaluation, the Secretaries of the Air Force, Army, and Navy, and other interested parties. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-4841 or russellw@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

W. William Russell
Director, Contracting and National Security Acquisitions

*List of Committees*

The Honorable Jack Reed
Chairman
The Honorable Roger Wicker
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Jon Tester
Chair
The Honorable Susan Collins
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Mike Rogers
Chairman
The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

The Honorable Ken Calvert
Chair
The Honorable Betty McCollum
Ranking Member
Subcommittee on Defense
Committee on Appropriations
House of Representatives

# Appendix I: Objectives, Scope, and Methodology

The Joint Explanatory Statement accompanying the National Defense Authorization Act (NDAA) for Fiscal Year 2022, and the House Report 117-397 for the NDAA for Fiscal Year 2023, contained a provision for us to assess the Department of Defense's (DOD) processes for validating service requirements. The House Report 117-397 accompanying the NDAA for Fiscal Year 2023 also contained a provision for us to assess DOD's forecasting of budget needs for service contracts across the Future-Years Defense Program (FYDP).[1] This report assesses DOD's (1) trends in obligations on contracts for services from fiscal years 2017 through 2022, (2) processes for validating service requirements, and (3) progress forecasting budget needs for service contracts across the FYDP—the budget year and subsequent 4 fiscal years.

To identify trends in DOD obligations for service contracts, we analyzed 6 fiscal years—2017 through 2022—of Federal Procurement Data System (FPDS) data adjusted for inflation using the Gross Domestic Product Price Index. We focused our analysis on the services governed by DOD Instruction 5000.74, as revised in January 2020.[2] We selected data elements within FPDS related to the amount obligated on services and products, types of services acquired, and various contract characteristics, such as the contracting vehicle and pricing types, as well as the use of small businesses and competitive contracts.[3]

We analyzed FPDS data to identify products and services, and those services governed by DOD Instruction 5000.74 using the FPDS Product Service Code Manual.[4] We removed services excluded from DOD

[1]167 Cong. Rec. H7265, H7304 (Dec. 7, 2021) (joint explanatory statement to the National Defense Authorization Act for Fiscal Year 2022); and H.R. Rep. No. 117-397, at 276 (2022).

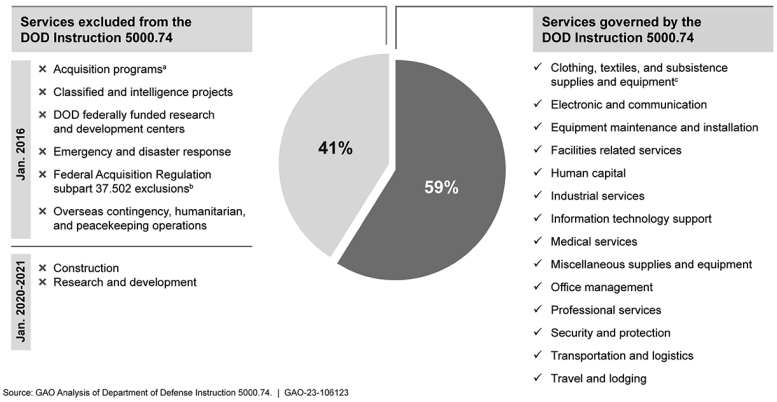
[2]Department of Defense, *Defense Acquisition of Services*, DOD Instruction 5000.74 (Jan. 10, 2020, incorporating change 1 effective June 24, 2021).

[3]Competitive contracts include contracts and orders coded in the Federal Procurement Data System as "full and open competition," "full and open after exclusion of sources," "competed under simplified acquisition procedures" as well as orders coded as "subject to fair opportunity" and as "fair opportunity given," and "competitive set aside." Noncompetitive contracts included contracts and orders coded as "not competed," "not available for competition," and "not competed under simplified acquisition procedures," as well as orders coded as an exception to "subject to fair opportunity," including "urgency," "only one source," "minimum guarantee," "follow-on action following competitive initial action," "other statutory authority," and "sole source."

[4]General Services Administration, *Federal Procurement Data System Product and Service Codes Manual, Fiscal Year 2022 Edition* (April 2022).

Instruction 5000.74 based on certain service and National Interest Action codes, and supplemented FPDS data for Adaptive Acquisition Framework Programs with Selected Acquisition Reports.[5] Figure 6 shows the services governed by and excluded from the various iterations of DOD Instruction 5000.74.

**Figure 6: Percentage of Obligations on Contracts for Services Governed by and Excluded from the Various Iterations of the Department of Defense (DOD) Instruction 5000.74, Fiscal Years 2017–2022**




Source: GAO Analysis of Department of Defense Instruction 5000.74. | GAO-23-106123

[a]Services associated with an acquisition program, including those managed and reviewed as part of the pathways of the Adaptive Acquisition Framework.

[b]Services listed in subpart 37.502 of the Federal Acquisition Regulation include those obtained through: personnel appointments and advisory committees; personal service contracts authorized by statute; construction as defined in 2.101; or interagency agreements where the work is being performed by in-house federal employees.

[c]Services include quality control, equipment and material testing, modification of equipment, and equipment lease or rental.

[5]We cross-analyzed the FPDS data against Selected Acquisition Reports for the acquisition programs because these programs (1) are not required but can go through the validation process for a service requirement and (2) may have portions of contracts and contract obligations categorized as products.

We assessed the reliability of the FPDS data by reviewing the data dictionary, data validation rules, and performing electronic testing. We also reviewed DOD's FPDS Data Certification Letters for fiscal years 2017 through 2022. We determined that the FPDS data were sufficiently reliable for the purposes of describing trends in DOD's obligations on contracts for services.

Based on our analysis of the FPDS data, we selected the military departments—Air Force, Army, and Navy—for our review because they were the DOD components with the highest obligations on contracts for services during this timeframe. We selected one major command from each military department—Air Force Materiel Command, Army Materiel Command, and Naval Sea Systems Command—based on its fiscal year 2021 obligations on contracts for services.[6] We also categorized the obligations on contracts for services by the various service requirement review thresholds established by DOD Instruction 5000.74 and military department policies.[7]

To assess DOD's processes for validating service requirements, we reviewed DOD, military department, and major command, policies, guidance, templates, and other documentation. We compared the military departments' and selected major commands' processes to the requirements outlined in DOD Instruction 5000.74 to determine alignment. For example, we compared the thresholds for service requirement reviews, and the various factors that are considered during those reviews, such as the nine factors outlined in DOD Instruction 5000.74.

We also assessed a nongeneralizable sample of service requirements from each major command. Specifically, we requested each major command's service requirements for fiscal years 2021 and 2022 with a

[6]Air Force Materiel Command delegates the responsibility for service requirement reviews to its six centers. As such, we selected the center with the highest service contract obligations in fiscal year 2021—Air Force Life Cycle Management Center. We selected Naval Sea Systems Command which had the second highest service contact obligations in fiscal year 2021, because the highest—Commander Naval Installations Command—lacks contracting authority and shares budgeting authority with another major command.

[7]Department of Defense, *Defense Acquisition of Services*, DOD Instruction 5000.74 (Jan. 10, 2020, incorporating change 1 effective Jun. 24, 2021). Department of the Air Force, *Acquisition of Services*, Air Force Instruction 63-138 (Sept. 30, 2019). Department of the Army, *Management and Oversight of Service Acquisitions*, Army Regulation 70-13 (July 30, 2010); and *Interim Policy for Managing and Overseeing the Acquisition of Services*, Army Directive 2017-15 (Apr. 25, 2017). Secretary of the Navy, *Department of the Navy Implementation of the Defense Acquisition System and the Adaptive Acquisition Framework*, Navy Instruction 5000.2G (Apr. 8, 2022).

value of $10 million or more. From these service requirements, we randomly selected five from each major command. We then requested the documentation that was used to validate each of the selected service requirements. We analyzed the documentation to determine whether or not each of the nine factors in the DOD Instruction 5000.74 were reflected.

We interviewed officials in the Office of the Under Secretary of Defense for Acquisition and Sustainment (USD (A&S)), the military departments, and selected major commands on service requirement review processes. We also followed up with the major commands about the selected service requirements for additional clarification and other documentation, and updated our analysis as applicable.

To assess DOD's progress forecasting budget needs for service contracts across the FYDP, we reviewed statutory requirements and the Under Secretary of Defense Comptroller (USD (C)) and Cost Assessment and Program Evaluation's (CAPE) budget guidance for the fiscal year 2023 and 2024 budget submissions. We analyzed this guidance to determine if and when the statutory requirement to forecast budget needs for service contracts was captured, and whether the fiscal year 2024 budget submission included budget needs for service contracts across the FYDP.[8]

We interviewed officials from USD (C), CAPE, and each of the military departments' financial management and budgeting offices about any communication specific to the forecasting requirement, methodologies and data sources used to address it, and any challenges. We determined that the federal internal control standard for information and communication was significant to this objective; specifically that management should communicate information requirements in a timely manner to achieve objectives.[9] We assessed DOD's efforts to communicate and implement the requirement to forecast budget needs for service contracts against this principle.

We conducted this performance audit from June 2022 to September 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain

[8]10 U.S.C. § 4506 (b).

[9]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: Sept. 10, 2014).

sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

# Appendix II: Major Categories of Services Governed by DOD Instruction 5000.74

Most of the Department of Defense's (DOD) applicable obligations on contracts for services from fiscal years 2017 to 2022 were on four level 1 categories: (1) professional services, (2) equipment maintenance and installation, (3) information technology support, and (4) medical assistance.[1] Table 3 lists the 14 level 1 service categories and the corresponding 50 level 2 categories governed by DOD Instruction 5000.74, as outlined in the General Services Administration's category management taxonomy and Federal Procurement Data System Product and Service Codes Manual.[2]

**Table 3: Level 1 and Level 2 Categories for Service Contracts Governed by DOD Instruction 5000.74**

| Level 1 | Level 2 |
|---|---|
| Clothing, textiles, and subsistence supplies and equipment[a] | Textiles, clothing, and equipage subsistence |
| Electronic and communication services | Equipment leases |
| | Equipment maintenance |
| Equipment related services | Equipment modification |
| | Installation of equipment |
| | Maintenance, repair, and overhaul |
| | Purchases and leases |
| | Quality control |
| | Salvage services |
| | Technical representative services |
| Facilities and construction[b] | Facilities purchase and lease |
| | Facility related services |
| | Facility related materials |
| Human capital | Human resources services |
| | Specialized educational services |
| | Vocational training |
| Information technology | Capability as a service |
| | Information technology professional service (labor) |

[1]We analyzed data from the Federal Procurement Data System to identify trends in DOD's obligations on contracts for services between fiscal years 2017 and 2022. As part of this analysis, we identified the obligations on contracts for services that are governed by and excluded from DOD Instruction 5000.74, *Defense Acquisition of Services*, (Jan. 5, 2016 and Jan. 10, 2020, incorporating change 1 effective June 24, 20214). The 14 level 1 categories include services that are governed by DOD Instruction 5000.74, with one exception—construction—as indicated in table 3.

[2]U.S. General Services Administration, *Federal Procurement Data System Product and Service Codes Manual, Fiscal Year 2022 Edition* (April 2022).

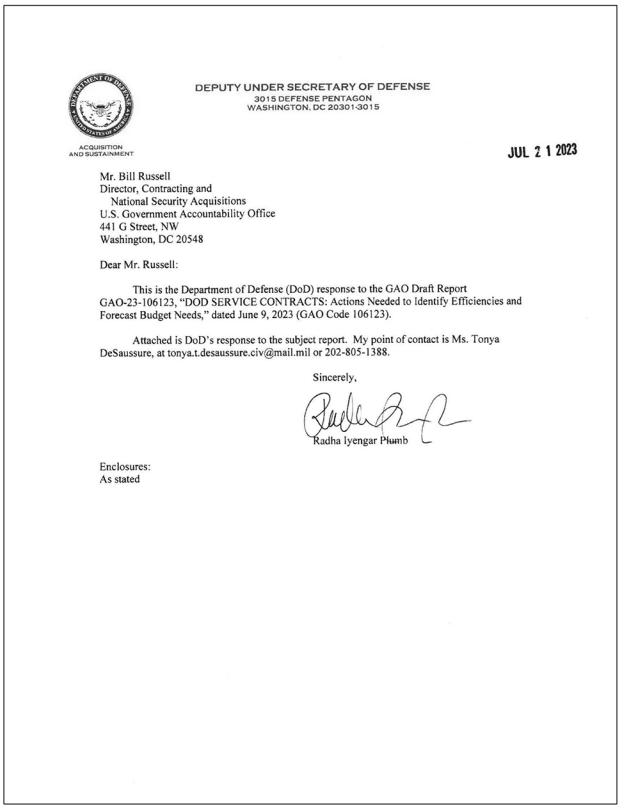
| Level 1 | Level 2 |
|---|---|
| Industrial products and services | Basic materials |
| | Fire, rescue, safety, and environmental protection equipment |
| | Hardware and tools |
| | Industrial products install, maintenance, and repair |
| | Machinery and components |
| | Test and measurement supplies |
| Medical | Healthcare services |
| | Medical equipment, accessories, and supplies |
| Miscellaneous supplies and equipment | Supplies and equipment not classified elsewhere |
| Office management | Furniture |
| | Office management services |
| Professional services | Business administration services |
| | Financial services |
| | Legal services |
| | Management advisory services |
| | Marketing and distribution |
| | Public relations and professional communications services |
| | Real estate services |
| | Social services |
| | Technical and engineering services (non-information technology) |
| | Trade policy and services |
| Security and protection | Security animals and related services |
| | Security services |
| Transportation and logistics services | Logistics support services |
| | Motor vehicles |
| | Package delivery and packaging |
| | Transportation equipment |
| | Transportation of things |
| Travel and lodging | Lodging |
| | Passenger travel |
| | Travel agent and miscellaneous services |

Source: GAO analysis of Department of Defense (DOD) and General Services Administration documentation. | GAO-23-106123

[a]Services include quality control, equipment and material testing, modification of equipment, and equipment lease or rental.

[b]Construction services and any services relating to construction are excluded from DOD Instruction 5000.74, *Defense Acquisition of Services* (Jan. 10, 2020, incorporating change 1 effective June 24, 2021), in accordance with 10 U.S.C. § 4502 (d)(2).

# Appendix III: Comments from the Department of Defense



DEPUTY UNDER SECRETARY OF DEFENSE
3015 DEFENSE PENTAGON
WASHINGTON, DC 20301-3015

ACQUISITION AND SUSTAINMENT

JUL 2 1 2023

Mr. Bill Russell
Director, Contracting and
National Security Acquisitions
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Russell:

This is the Department of Defense (DoD) response to the GAO Draft Report GAO-23-106123, "DOD SERVICE CONTRACTS: Actions Needed to Identify Efficiencies and Forecast Budget Needs," dated June 9, 2023 (GAO Code 106123).

Attached is DoD's response to the subject report. My point of contact is Ms. Tonya DeSaussure, at tonya.t.desaussure.civ@mail.mil or 202-805-1388.

Sincerely,

Radha Iyengar Plumb

Enclosures:
As stated

**GAO DRAFT REPORT DATED JUNE 9, 2023**
**GAO-23-106123 (GAO CODE 106123)**

**"DOD SERVICE CONTRACTS: ACTIONS NEEDED TO IDENTIFY EFFICIENCIES AND FORECAST BUDGET NEEDS"**

**DEPARTMENT OF DEFENSE COMMENTS TO THE GAO RECOMMENDATION**

**RECOMMENDATION 1**: The GAO recommends that the Secretary of the Air Force should revise its service acquisition policy to ensure major commands collectively prioritize service requirements valued between $10 million and $100 million.

**DoD RESPONSE**:
**Concur.** The Department of the Air Force Senior Services Manager (SSM) will update its Services Management Agreements with each Major Command, Field Command, Direct Reporting Unit, and Headquarters Air Force Organization to ensure requirements valued between $10 million and $100 million are prioritized appropriately. Currently, senior leadership at each of these organizations reviews and prioritizes requirements annually during their respective Services Requirements Review Boards, with some organizations also adding mid-point reviews. The outcome of each these annual boards is made available to the Air Force SSM for review and discussion during Annual Execution Reviews (AERs), which are mandated by AFI-63-138, Acquisition of Services. Specifically, during the Effectiveness Review portion of the AERs, all DAF services programs (people, processes, and performance) are self-assessed and presented to the AF SSM.

**RECOMMENDATION 2**: The GAO recommends that the Secretary of the Air Force should revise its service acquisition policy to require an official who is responsible for the oversight of services, such as the Air Force's Senior Services Manager, to aggregate and review data on service requirements valued between $10 million and $100 million to identify efficiencies.

**DoD RESPONSE**:
**Concur.** The Department of the Air Force Senior Services Manager will update its Services Management Agreements with each Major Command, Field Command, Direct Reporting Unit, and Headquarters Air Force Organization to ensure the designated Services Advocates of each of those organizations aggregate and review data on services requirements valued between $10 million and $100 million and identify efficiencies. Services Advocates will report their results to the Senior Services Manager on an annual basis as described above. The Senior Services Manager will review the entirety of the results across the full DAF services portfolio and identify opportunities for Department of the Air Force-wide efficiencies. The revised Department of the Air Force Instruction (DAFI) 63-138 further reinforces the responsibility of the Service Advocates to manage all of their services acquisitions with an increased emphasis on post-award performance management. The updated DAFI serves to increase efficiencies across Air Force services requirements to include greater use of enterprise-wide contracts when appropriate. The updated DAFI is expected to be published in the summer of 2023.

**RECOMMENDATION 3**: The GAO recommends that the Secretary of the Army should revise its service acquisition policy to require an official who is responsible for the oversight of

services, such as the Army's Senior Services Manager, to aggregate and review data on service requirements valued at $10 million or more to identify efficiencies.

**DoD RESPONSE**:
**Partially Concur:** Change verbiage in the recommendation to state, "The Secretary of the Army should revise its service acquisition policy to require an official to aggregate and review data on services requirements valued at $10 million or more to identify efficiencies." The Army does not agree with GAO's assignment of responsibility to the Senior Services Manager. The official responsible for the action should be left to the Department of the Army.

**RECOMMENDATION 4**: The GAO recommends that the Secretary of Defense should require that the Under Secretary of Defense, Comptroller, in coordination with other relevant offices involved in the recently established services working group, to develop a charter that includes steps that ensure information requirements for the fiscal year 2026 and future budget submissions are communicated to the military departments in a timely manner.

**DoD RESPONSE**:
**Concur and recommend removal:** OUSD(A&S), Director, for Acquisition, Data and Analysis, in coordination with OUSD(C), Director, Operations for Program and Budget, CAPE, Director, Programming Resources and Information Systems and OUSD(P&R), Officer and Enlisted Personnel Management, signed a memo and charter which established the Services Acquisition Executive Steering Committee (SAESC) on June 23, 2023 (attached). The Charter identifies the SAESC will be supported by a Services Acquisition Working Group (SAWG) consisting of O-6/GS-15 equivalent representatives to facilitate communication and vet issues that come before the SAESC. The Charter includes a list of responsibilities for the SAWG to include information sharing and lessons learned to facilitate continuous process improvements in the oversight, management, and execution of contracted services. In addition, OUSD(C) and CAPE published on June 12, 2023, the FY2025-2029 Integrated Program and Budget Review Guidance to ensure forecasting and reporting information requirements for the fiscal year 2025 and future budget submissions are communicated to the military departments.

**RECOMMENDATION 5**: The GAO recommends that the Secretary of Defense should ensure that the Under Secretary of Defense, Comptroller, in coordination with other relevant offices involved in the recently established services working group, specifies the data sources and methodology for forecasting budget needs for service contracts across the future years defense program to inform its fiscal year 2026 and future budget submission.

**DoD RESPONSE**:
**OUSD(C) and CAPE partially concur** in GAO's recommendation to identify the data sources and methodology for forecasting budget needs. Request the word "specifies" be changed to "identifies" per our initial response/request. In transitive terms, the difference between identify and specify is that identify is to equate or make the same; to unite or combine into one while specify is to bring about a specific result. "Specifying the data sources…" is incorrect in the use in recommendation 5, as it is not meant to bring about a specific result and should be changed to "identifies" based on the difference in meaning between the two terms.

# Appendix IV: GAO Contact and Staff Acknowledgments

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| GAO Contact | W. William Russell (202) 512-4841 or russellw@gao.gov |
| Staff Acknowledgments | In addition to the contact name above, Meghan Perez (Assistant Director), Helena Johnson (Analyst-in-Charge), William Anderson, Margaret Best, Lori Fields, Suellen Foth, Stephanie Gustafson, Julie Kirby, Adie Lewis, Michele Mackin, Jean McSween, Leah Nash, Sylvia Schatz, Ian Toller-Clark, and Alyssa Weir made significant contributions to this review. |

# Related GAO Products

*High-Risk Series: Efforts Made to Achieve Progress Need to be Maintained and Expanded to Fully Address All Areas*. GAO-23-106203. Washington, D.C.: April 20, 2023.

*High-Risk Series: Dedicated Leadership Needed to Address Limited Progress in Most High-Risk Areas.* GAO-21-119SP. Washington, D.C.: March 2, 2021.

*Service Acquisitions: DOD's Report to Congress Identifies Steps Taken to Improve Management, But Does Not Address Some Key Planning Issues.* GAO-21-267R. Washington, D.C.: February 22, 2021.

*Defense Contracted Services: DOD Needs to Reassess Key Leadership Roles and Clarify Policies for Requirements Review Boards.* GAO-17-482. Washington, D.C.: August 31, 2017.

*DOD Service Acquisition: Improved Use of Available Data Needed to Better Manage and Forecast Service Contract Requirements*. GAO-16-119. Washington, D.C.: February 18, 2016.

*High-Risk Series: An Update.* GAO-15-290. Washington D.C.: February 11, 2015.

*Defense Acquisitions: Goals and Associated Metrics Needed to Assess Progress in Improving Service Acquisition.* GAO-13-634. Washington, D.C.: June 27, 2013.

*Best Practices: An Integrated Portfolio Management Approach to Weapon System Investments Could Improve DOD's Acquisition Outcomes.* GAO-07-388. Washington, D.C.: March 30, 2007.

*Defense Acquisitions: Tailored Approach Needed to Improve Service Acquisition Outcomes*. GAO-07-20. Washington, D.C.: November 9, 2006.

*Defense Management: Additional Actions Needed to Enhance DOD's Risk-Based Approach for Making Resource Decisions.* GAO-06-13. Washington, D.C.: November 15, 2005.

*High-Risk Series: An Update.* GAO-05-207, Washington, D.C.: January 1, 2005.

*Future Years Defense Program: Actions Needed to Improve Transparency of DOD's Projected Resource Needs.* GAO-04-514. Washington, D.C.: May 7, 2004.

*Contract Management: High-Level Attention Needed to Transform DOD Services Acquisition.* GAO-03-935. Washington, D.C.: September 10, 2003.

*Best Practices: Improved Knowledge of DOD Service Contracts Could Reveal Significant Savings.* GAO-03-661. Washington, D.C.: June 9, 2003.

*High-Risk Series: An Update.* GAO-03-119. Washington, D.C.: January 1, 2003.

*Best Practices: Taking A Strategic Approach Could Improve DOD's Acquisition of Services.* GAO-02-230. Washington, D.C.: January 18, 2002.

*Contract Management: Service Contracting Trends and Challenges.* GAO-01-1074R. Washington, D.C.: August 22, 2001.

*Contract Management: Trends and Challenges in Acquiring Services.* GAO-01-753T. Washington, D.C.: May 22, 2001.

*High-Risk Series: An Update.* GAO-01-263. Washington, D.C.: January 1, 2001.

*Major Management Challenges and Program Risks: Department of Defense.* GAO-01-244. Washington, D.C.: January 1, 2001.

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