

DEPARTMENT OF DEFENSE AUTHORIZATION
REQUEST FOR APPROPRIATIONS FOR FISCAL
YEAR 2024 AND THE FUTURE YEARS DEFENSE
PROGRAM

HEARING

BEFORE THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED EIGHTEENTH CONGRESS

FIRST SESSION

ON

S. 2226

TO AUTHORIZE APPROPRIATIONS FOR FISCAL YEAR 2024 FOR MILITARY
ACTIVITIES OF THE DEPARTMENT OF DEFENSE, FOR MILITARY CON-
STRUCTION, AND FOR DEFENSE ACTIVITIES OF THE DEPARTMENT OF
ENERGY, TO PRESCRIBE MILITARY PERSONNEL STRENGTHS FOR
SUCH FISCAL YEAR, AND FOR OTHER PURPOSES

PART 2
SEAPOWER

MARCH 28, 2023



DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR APPROPRIATIONS FOR FISCAL YEAR 2024 AND THE FUTURE YEARS DEFENSE PROGRAM—Part 2
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**DEPARTMENT OF DEFENSE AUTHORIZATION
REQUEST FOR APPROPRIATIONS FOR
FISCAL YEAR 2024 AND THE FUTURE YEARS
DEFENSE PROGRAM**

TUESDAY, MARCH 28, 2023

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

NAVY AND MARINE CORPS INVESTMENT PROGRAMS

The Subcommittee met, pursuant to notice, at 2:38 p.m. in room SR-236, Russell Senate Office Building, Senator Tim Kaine (Chairman of the Subcommittee) presiding.

Subcommittee Members present: Kaine, Blumenthal, Hirono, King, Peters, Cramer, Sullivan, Scott, Tuberville, and Schmitt.

OPENING STATEMENT OF SENATOR TIM KAINE

Senator KAINE. The hearing will now come to order. I want to welcome our witnesses today, welcome my Subcommittee colleagues, Subcommittee Ranking Member Cramer. To all of our witnesses, thank you so much for your service to this country. I want to acknowledge the tremendous dedication of our sailors, marines, civilians, that serve in the Department of the Navy, thank their families for their unrelenting support of our Nation's defense.

This is my first hearing as chair of the Seapower Subcommittee. I have been a Member during my entire time in the Senate, but I have been either Chair or Ranking Member on Readiness, and yet this year Senator Hirono, for a number of reasons I completely understand, decided that Readiness should be her portfolio, and so we have switched. I am truly honored and excited by the chance to lead this vital Subcommittee. As the father of a marine and as a Senator from a State that has some pretty significant Navy and Marine Corps equities and an amazing shipbuilding and submarine building and repair industrial base, it is a particularly welcome challenge for my team and I to take this role.

I want to recognize the Ranking Member, Senator Cramer. He and I look forward to working together. We have already had a good working relationship on the Armed Services Committee. I do want to thank Senator Hirono. I had the chance to sit on the committee and watch her maneuver with skill over the last few years.

The Subcommittee is going to continue to find broad agreement as we continue to confront the issues facing our sailors, marines,

and their families, and in the past the nice thing about the Armed Services Committee and this Subcommittee is we agree so much more than we disagree.

I will start with just throwing something down on the table that I am a little bit not happy with, which is we do not yet have a 30-year shipbuilding plan. When we hold a hearing like this and it is going to be about seapower investments in shipbuilding and ship repair, of course the idea is we get the plan first and then we would sound really smart in the questions that we ask you. That plan was supposed to come over with the President's Budget on March 9th. Today is the 28th, and we do not have it.

We talked last week with Navy leadership that said that we would have it on Friday or Monday. I was like, well, Monday for a Tuesday hearing, I am not a speed reader but my staff is. Okay, maybe we can be ready. Well, we do not have it yet, and that means we have got a lot of questions for you, but we would have had probably more defined, sharp, precise questions for you if we had not only had just the budget submission, but the plan itself. I am mindful of my Subcommittee Members. I think they would have really benefited from that as well.

So what are we going to do? We are going to do the hearing and ask the questions we have without that plan. I suspect we will get the plan before the full Navy posture hearing, before the committee with the CNO [Chief of Naval Operations], the SECNAV [Secretary of the Navy], and the Commandant. Questions that we would have probably directed to you we are going to end up having to direct to them.

But what I am going to do, and I just say this to my Subcommittee Members, after the posture hearing before the full Committee, if you feel like you have not really gotten a chance to ask the questions that you want about the 30-year shipbuilding plan—because there are a million things we should ask the SECNAV, Commandant, and CNO about—we will reconvene and we will do a followup of this hearing if it is the pleasure of the Subcommittee, so that we can dig into questions that are more detailed questions about the 30-year shipbuilding plan.

Look, this year's budget, submitted to the Senate, continues to grow its investment in critical capabilities of the sea services with an overall seapower budget of \$255.8 billion. That is an increase of more than \$11 billion from the fiscal year 2023 enacted budget. That includes over \$76 billion in procurement and nearly \$27 billion in research and development, and that growth from fiscal year 2023 is growth on a budget that had already grown pretty much from previous years, so it is growth on top of growth. That is important.

Modernization investments include \$32.8 billion in shipbuilding, \$17.3 billion in naval aviation procurement, \$16.9 billion in Marine Force Design equipping priorities, and nearly \$7 billion, a \$2 billion increase from last year, in weapons procurement.

We are encouraged by the Department of the Navy's actions to take advantage of congressionally authorized authorities for munitions and critical capabilities such as Standard Missile, Naval Strike Missiles, Long-Range Anti-Ship Missiles, Advanced Medium-Range Air-to-Air Missiles.

It is a robust budget. The Navy and Marine Corps, though, face difficult decisions as they seek to balance modernizing the fleet, maintaining a technological advantage over adversaries, supporting ongoing operations, which are becoming more complex, and always sustaining today's readiness.

Although I am encouraged that the Navy has gotten serious about investing in critical infrastructure that has been neglected for far too long. We continue to see delays in delivering new ships from our shipbuilders and delays in returning ships to the fleet from our public and private ship repair yards, and some of these we have been able to predict but some have also been quirky, like the decision that we needed to pull some of the Puget Sound dry-docks out of commission because of seismic activity there. How that is going to affect us and over what period of time is obviously not completely in our control, and I would like to hear about that today. I will be asking witnesses how your budget request either reduces or eliminates some of these performance challenges.

Additionally, the Navy is again proposing to retire a number of ships before the end of their useful service lives, including several amphibious ships that would bring the total number of amphibs below the floor of 31 ships that we set in the Fiscal Year 2023 National Defense Authorization Act. So I want to hear more about the future of the amphibious fleet and why there continues to be some in-the-atmosphere dispute, left hand not knowing what the right hand is doing, continual rethinking of what we assumed was an agreed upon priority to meet the Marine Corps' needs.

Finally, as the Marine Corps continues to pursue significant structure and capabilities modernization, it would be helpful to understand how this Force Design better prepares the Marine Corps for not only the pacing threat but then for potential operations worldwide. I look forward to a productive discussion today on these and many other priority efforts.

Before I introduce Senator Cramer I just want to say to my colleagues, I am managing these amendments that are on the floor in the AUMF [Authorization for Use of Military Force]. There is one that is going to come up in about a half an hour. I need to go speak for a minute and then come back. Senator King said he would take the helm during that time. So you will see me—

Senator TUBERVILLE. Just 1 minute?

Senator KAINE. Just 1 minute. Only 1 minute. You will see me exit, speak for a minute, vote, and come right back.

But with that, Senator Cramer, good to have you.

STATEMENT OF SENATOR KEVIN CRAMER

Senator CRAMER. Thank you, Chairman Kaine, and I would like to say she—I just saw her poke her head in but now I lost Senator Hirono. But I do not know if you will be as skilled at managing the Committee as she was, but I hope you are as gracious to the Ranking Member as she was, because as you know, I come from the center of the North American continent—literally, we have a monument to prove it—in Rugby, North Dakota. But I always said together Senator Hirono and I knew a lot about seapower. So I am thinking that together you and I will too.

I cannot imagine a higher priority for this Subcommittee than the 30-year plan. So I appreciate your willingness to reassemble, if necessary, after we get the plan.

Oh, there she is.

Senator TUBERVILLE. You can start over again.

Senator CRAMER. I just said I hope he does as good a job as Mazie Hirono did.

Senator KAINE. It is really a sincere compliment when the person is not in the room.

Senator CRAMER. That is true.

But our Nation faces a generational challenge for sure, to peace and security, that we have only, in my view, only recently, at least as a Nation, recognized. It is worth stating that the challenge is clearly here today. The Chinese Communist Party (CCP) has become more assertive in using their military to achieve strategic goals. The Department of Defense's (DOD) new document, "Joint Concept for Competing," described China as, "the only competitor capable of mounting a sustained challenge to a stable and open international system."

Our Navy and Marine Corps provide the forces necessary to deter China through forward presence, sea control, and power projection. Appropriately funding naval capabilities is among the most critical constitutional duties Congress performs, and it is one that I take very seriously.

To this end I thank the Chairman for calling today's hearing to examine Navy and Marine Corps programs in the President's Fiscal Year 2024 Budget Request, and as I say, I look forward to the 30-year plan.

But I must say I am very concerned that President Biden's Defense Budget Request is not adequate. The Department of the Navy's fiscal year 2024 budget only seeks 4.5 percent growth. Because this budget does not keep up with inflation, it is, in fact, a cut. At the same time, China's military budget will see substantial growth above inflation. I am hopeful we can come together again to provide the Department with real budget growth to fund critical modernization, readiness, and personnel shortfalls.

The Administration's inadequate budget is reflected in the fact that the Navy's fleet size is set to decline to 293 ships and stagnate over the next 5 years—the next 5 years. This decrease in the number of ships alarms me because China is moving to increase the size of its fleet at a breakneck pace.

Many have called the next 5 years the period of maximum danger in the Indo-Pacific region. A brief overview of China's growing capabilities makes that danger clear. China has truly unprecedented shipbuilding capacity, capturing 47 percent of the global market for commercial ships, and boasts more than 4,500 merchant ships. In 2022, during the peacetime, China's shipyards built 38 million tons of shipping. That is more than double what the United States built at the peak of the Emergency Shipbuilding Program during World War II.

In terms of warships, the Department of Defense expects that China's fleet will grow to 400 by 2025, and 440 by 2030. By contrast, under this budget, our Navy will not even reach 300 ships by 2030. Two weeks ago a single Chinese shipyard launched two

new destroyers with three more to follow in the coming months, and more under construction at a second shipyard. A new class of large frigates has apparently begun construction at another shipyard. A few months ago, construction of a new class of nuclear submarines emerged.

China is also conducting more advanced operations. This past December, China deployed a carrier strike group just 460 miles from Guam, launching aircraft over a 15-day period. China has also made significant progress in exercises using numerous military/civilian Roll-On/Roll-Off vessels to practice large-scale lift of troops and equipment, which could be used in an amphibious invasion across the Taiwan Strait. China has also been practicing the use of long-range, anti-ship ballistic missiles against simulated targets representing United States ships.

This small sample of Chinese naval capabilities, together with their expansionist policy goals, is alarming. It does not appear the Navy's budget takes the risk seriously. The Navy proposes decommissioning 11 ships, 8 of which are within their service life. Decommissioning 5 guided missile cruisers alone will result in the loss of more than 600 vertical launch system cells. While the Navy claims readiness issues are a cause for the decommissions, it also claims that the fiscal year 2024 budget funds 100 percent of ship depot maintenance requirements and 97 percent of ship operations requirements. I would like to hear from the witnesses how the budget adequately funds sustainment when the General Accountability Office reported this year that part shortages, casualty reports, and maintenance delays have been on the rise since 2011.

I would also like to hear from the witnesses how they plan to support industry to deliver ships on time and on cost. Attracting and retaining shipbuilding workforce is a primary challenge, as we have discussed in this Committee before. Disrupting production lines without a clear transition path creates needless uncertainty. Truncation of the LPD amphibious ship program is a key example of the Navy's unstable demand signal to industry. It also disregards the Commandant of the Marine Corps' requirement for a minimum of 31 large amphibious ships, a requirement Congress signed in the past and signed into law last year.

Finally, I would like to hear from the witnesses how they plan to use innovation to bolster our ability to compete in the near term. I believe if we are stretching the limits of shipbuilding and maintenance we must look to smaller, more affordable, and more distributed systems that will complement the program plans already in place.

All good ideas must be on the table because time matters. Time is the only fixed resource, and it may be short. I look forward to the testimony of our witnesses today. Thank you.

Senator KAINE. Thank you, Senator Cramer. I used to try cases, and there would be expert witnesses, and one of the things you do is you qualify an expert witness by giving a really long bio. Whenever one of my opposing counsel would do that I would just jump in and say, "I stipulate they are qualified." I did not want the jury to hear how qualified they were.

During my tenure as Chair of this Subcommittee I am going to give very short introductions, not long introductions.

We have three great witnesses with us: Lieutenant General Karsten Heckl, who is the Deputy Commandant for Combat Development and Integration; Mr. Frederick Stefany, who is the Assistant Secretary of the Navy for Research, Development, and Acquisition; and Vice Admiral Scott Conn, who is the Deputy Chief of Naval Operations for Warfighting Requirements and Capabilities.

That is all the introduction you are getting, and we are going to go left to right. Please try to keep your comments to about 5 minutes. If you want to submit anything for the record that will be fine, and then we will get into the questions and answers.

Mr. STEFANY. Mr. Chairman, I would like to make just one statement—

Senator Kaine. Please.

Mr. STEFANY—for all three of us.

Senator Kaine. Please.

Mr. STEFANY. Before I go to that statement I will start with saying we are disappointed we are not able to get you the 30-year plan before this hearing, and we will absolutely come back here at your convenience, whatever is good for you once you get the plan, and go through whatever questions you and the other Members have.

Senator Kaine. Thank you. Thank you.

Mr. STEFANY. We are totally committed to that, sir.

STATEMENT OF FREDERICK STEFANY, ACTING ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT, AND ACQUISITION

Mr. STEFANY. Okay, for an opening statement, Chairman Kaine, Ranking Member Cramer, distinguished Members of the Subcommittee, on behalf of myself, Vice Admiral Conn, and Lieutenant General Heckl, thank you for the opportunity to appear before you today to address the Department of Navy's fiscal year 2024 budget request for seapower capabilities. We thank the Subcommittee for your continued leadership and support of shipbuilding, naval aviation, and ground programs that maintain maritime superiority and defense of our Nation.

The Department of the Navy's 2024 budget is guided by Secretary Del Toro's enduring priorities to strengthen our maritime dominance, to build a culture of warfighting excellence, and to enhance our strategic partnerships. It implements the CNO's navigation plan to expand our fleet capabilities for Distributed Maritime Operations (DMO) while accelerating the Commandant's Force Design 2030 to rapidly modernize the expeditionary posture of the Marine Corps.

This overall budget request increases investment across the Navy and Marine Corps portfolios you mentioned, Mr. Chairman, while providing stability and predictability in many of our long-term production lines. This budget request includes a record \$32.8 billion for shipbuilding programs, and includes 55 new construction ships across the Future Years Defense Program (FYDP), including a consistent two *Arleigh Burke*-class destroyers per year and two *Virginia*-class attack submarines per year.

The President's Budget Request for Fiscal Year 2024 also procures the second *Columbia*-class ballistic missile submarine, and increases our production of frigates in this year to two ships. The

President's Budget Request for Fiscal Year 2024 program invests in 88 fixed-wing, rotary-wing, and unmanned aircraft in 2024, and 410 aircraft across the Fiscal Year Defense Program including a return to a consistent 15 F-35C fifth-generation fighters for our Navy and 20 B-or C-variant F-35s for our Marine Corps. The budget also includes 15 CH-53K aircraft to be purchased as part of the block buy that was authorized in the 2023 National Defense Authorization Act (NDAA), and we thank you for that.

Looking back on the year since we last briefed this Committee, I am happy to report a number of successes in providing new capability for the fleet. The *Gerald Ford*, our first new aircraft carrier in half a century, made her first deployment last year. We declared, toward the end of the year, full-rate production of the CH-53K heavy-lift helicopter, one of the world's most powerful helicopters, and the DDG-125, which was our first Flight III destroyer with the new SPY-6 radar. This air and missile defense radar has started sea trials and is expected to deliver later this year.

As you know, I believe, we also started construction of the *Constellation*, our first frigate in a new class of frigates.

The 2024 budget request includes significant investment in our industrial base for submarines, which will support the ability of the United States to sustain a building of one ballistic missile submarine and two attack submarines to meet our domestic demand. We will work with Congress and the United States industrial base to assess if there are any adjustments required, as the newly announced AUKUS [Australia, the United Kingdom, and the United States] trilateral security pact between Australia, the United States, and the United Kingdom matures.

The budget also includes funding for Marine Corps Force Design priorities that will accelerate the modernization of capabilities in precision fires, resilient communications, and mobility platforms, optimizing the force for naval expeditionary warfare in a maritime littoral. The 2024 budget also increases our investment in munitions while taking advantage of the new authorities for streamlining multi-year procurements that were granted by Congress last year. Not only will this authority allow the Department to replenish our munitions stockpiles being used in support of the war in Ukraine, it will support efforts to strengthen our industrial base capacity to procure and field munitions at scale.

With the tremendous support received from Congress we are continuing recapitalization of our naval shipyards through our Shipyard Infrastructure Optimization Program, with a request for \$2.7 billion in 2024 and \$9.9 billion across the Fiscal Year Defense Plan (FYDP). Of note, last month we awarded the \$2.8 billion task order for the reconstruction of Dry Dock 3 at Pearl Harbor Naval Shipyard.

Looking forward with a focus on developing a full capability in the future force, we are investing \$26 billion in research for a next-generation submarine, large surface combatant, and air dominance family of aircraft, as well as autonomy and unmanned enabling technologies.

We thank you for the opportunity to appear before this Subcommittee today. Our mission begins and ends with providing the

best capability to our sailors and marines, and we look forward to your questions.

[The joint prepared statement by Frederick J. Stefany, Vice Admiral Scott Conn, and Lieutenant General Karsten S. Heckl follows:]

JOINT PREPARED STATEMENT BY FREDERICK J. STEFANY, VICE ADMIRAL SCOTT CONN,
AND LIEUTENANT GENERAL KARSTEN S. HECKL

Chairman Kaine, Ranking Member Cramer and distinguished Members of the Subcommittee, thank you for the opportunity to appear before you today to address the Department of Navy's fiscal year 2024 budget request for Seapower capabilities. Maintaining a world-class and worldwide deployable Navy and Marine Corps as a first line of defense for the United States is a continuous effort. The Department of the Navy (DON) appreciates the support of Congress and this Committee for the Department's acquisition, sustainment, research, and development programs that allow us to continue to build and operate a lethal, capable, integrated, and forward-postured Navy and Marine Corps.

The security of our country and preservation of our national interests remains reliant on a superior naval force, strategically postured to adapt to constantly evolving geopolitical challenges and threats. The Navy and Marine Corps team must continue to provide unmatched operational capability to best support the regional Combatant Commanders in countering the People's Republic of China (PRC), the pacing challenge for the Department, the acute threat posed by Russia, and other persistent threats, while remaining prepared to respond to any global crisis. The Navy and Marine Corps continue to lead Joint and Coalition forces through integrated deterrence and remain postured to adapt to emerging threats as demand for our naval capabilities continues to increase. To maintain the maritime dominance of the Joint Force, the DON continues to invest in the modernization of our existing capabilities, and is pursuing initiatives for rapid innovation and streamlined acquisition of future capabilities, including those of our allies and partners.

The DON is investing in lethal capabilities across a broad spectrum of platforms and programs to equip our warfighters for potential combat operations with credible and sufficient capability to deter, and when necessary, prevail in conflict. Since the start of fiscal year 2022 we have delivered 14 battle force ships to the Fleet including three *Arleigh Burke*-class destroyers (DDG 51), two *Virginia*-class submarines (SSN), five Littoral Combat Ships (LCS), one *San Antonio*-class amphibious transport dock (LPD), the first Fleet Replenishment Oiler of the new *John Lewis*-class (TAO-205), one *Spearhead*-class expeditionary fast transport dock with autonomy functions (EPF), and one *Lewis B. Puller*-class expeditionary sea base (ESB). Today, the Navy has 296 battle force ships, with an additional 76 ships under contract and 56 ships in construction, with the balance of ships in pre-construction activities such as long lead material procurement and planning efforts. We expect to take delivery of seven more ships and plan to award contracts for up to 17 more ships during fiscal year 2023, including the DDG 51 fiscal year 2023-2027 multi-year procurement contracts and the T-AO block buy contract as authorized in the fiscal year 2023 National Defense Authorization Act.

The Department has made great strides in recapitalizing Naval aviation platforms. Last year we delivered 91 new aircraft for the Navy and Marine Corps team, including F/A-18E/F production and ongoing procurement and fleet integration of F-35, E-2D, V-22, P-8, H-1, CH-53K, VH-92A, and unmanned aircraft MQ-4C, MQ-9A Extended Range (ER), and MQ-25. Naval Aviation is now predominantly comprised of new airframes, made possible through a deliberate strategy of evolutionary, controlled technical risk development programs. Unmanned aviation advancement has continued into fiscal year 2023 with three different integration events conducted to "fly" the MQ-25 virtually in the program's test lab with actual ground control station software and aircraft computer hardware and software. VUQ-10, the MQ-25 Fleet Replacement Squadron, stood up in October 2022, and is responsible for initial training of maintainers. For the Marine Corps, Unmanned Aerial Vehicle Squadron (VMU)-1 recently conducted phase zero operations with MQ-9A ER, including multisensory imagery reconnaissance, electronic support, unmanned escort of surface forces, and maritime domain awareness in support of the Joint Force and Coalition Partners in CENTCOM, totaling over 3,800 hours. VMU-3 started transition to the MQ-9A ER with flights to begin in 2023.

Over the last year, global events have continued to pressurize the need for rapid change across the Services and the DON has taken note, aggressively seeking and

implementing new and improved ways to operate, integrate, and sustain our forces. Russia's ongoing war against Ukraine has affirmed our perception of the modern-day character of war. Specifically, the war against Ukraine has displayed the value of enhanced sensors and long-range precision fires, and the importance of freedom of navigation and the ability to sustain a force. The war highlights the need for increased industrial capacity, and shown the genuine value in maintaining relationships among partners and allies. Additionally, it has shown us that persistent, forward presence is essential for the success of our Nation's deterrence efforts. Moreover, recent provocations by China, such as flying collection assets directly over the continental United States, clearly shows their willingness to compete below the threshold of armed violence.

The Marine Corps' activation of new units, including the 3d Marine Littoral Regiment and Task Force 61/2 are indicative of efforts made to compete and reassure allies and partners. Additionally, the establishment of Marine Corps Base (MCB) Camp Blaz on Guam is yet another positive for the Marine Corps and the Joint Force, as it will serve as a critical logistics and inside force enabler. These new organizations and installations will actively participate and support operational concepts, including Distributed Maritime Operations (DMO), Expeditionary Advanced Base Operations (EABO), and Stand-In Forces. However, continued fielding and sustainment of advanced capabilities in mobility, logistics, kill webs, and command and control will be essential for the entire Marine Corps to remain credible and lethal.

The security environment demands ships, aircraft, subs, expeditionary forces, special operations forces, and Sailors ready to fight and win. Readiness is generated across the DON, from shipyards and aviation depots, to our global network of bases and stations, to the steaming and flight hours our Sailors and Marines need to hone their skills. For surface ship maintenance, we are reinforcing our commitment to our industry partners to share future demand signals, and we are seeing the benefits of improved maintenance package planning, earlier contract awards, and delivery of long-lead time material to our repair yards. Continued investments in spares supports the readiness for training and operational units while simultaneously improving endurance for sustained operations. Funding of some availabilities that cross fiscal year boundaries via the OPN funding pilot is also showing positive results. These initiatives enable a stable and predictable workload for our industry partners and ensure a balance of operational requirements with industrial capacity.

The Navy continues to invest and mature autonomy to support future DMO through manned/unmanned teaming (MUM-T). To help increase opportunities to learn, the Navy has begun experimenting in the fleet with unmanned and autonomous systems at scale. Task Force 59 is exploring commercially available systems to augment their Maritime Domain Awareness, and 4th Fleet is building upon the Unmanned Campaign Framework to identify their needs to support the future hybrid fleet for the SOUTHCOM Area of Responsibility. In 2023 and 2024, we will be conducting numerous DON and multi-national unmanned experiments and exercises to explore MUM-T Maritime Domain Awareness, lethality, command and control, and contested logistics to include dual use technologies. This approach to innovation will leverage industries' pace of technology, allies, and partners' capabilities, while exploring new concepts. The return on investment includes a more flexible hybrid fleet that can be scaled with our allies and partners to help fill gaps brought on from world conflicts, or industrial base challenges at a more affordable cost.

THE FISCAL YEAR 2024 PRESIDENT'S BUDGET REQUEST

The President's Fiscal Year 2024 Budget provides the resources necessary for the Navy and Marine Corps to continue to implement the 2022 National Defense Strategy (NDS). This request builds and sustains the right mix of capabilities to keep the sea lanes open and free, deter conflict, and defend against current and future threats. In alignment with the Secretary of the Navy's priorities, the budget request enables the One Navy-Marine Corps Team to continue strengthening our maritime dominance, building on our culture of warfighting excellence, and enhancing our strategic partnerships.

The fiscal year 2024 budget request is strategy-based and analytically driven to meet our strategic goals, while balanced with reform targeted at maximizing the value of every dollar. The budget reflects the Department's commitment to building and sustaining a modernized naval force and operating forward with sufficient capability, size, and mix to deter and defend. Fiscal year 2024 continues key investments in advanced technologies and modernization of our current Seapower and Projection forces. In this request we are prioritizing the recapitalization of the strategic ballistic missile submarine, the *Columbia*-class, which remains the Department's top

acquisition priority. It requests the first year of incremental funding for the second *Columbia*-class SSBN and full funding for two DDG Flight IIIs, two SSNs, two FFGs, one T-AO, and one AS(X), while providing the next increment of funding for construction of CVN 80, CVN 81, and LHA 9. The budget supports modernization of our warfighting capabilities across all domains, including research and development (R&D) funding for the future fast attack submarine (SSN(X)), future destroyer (DDG(X)), the Next Generation Air Dominance (NGAD) Family of Systems (FOS), Marine Corps Unmanned Expeditionary (MUX) FOS, and recapitalization of the Take Charge and Move Out (TACAMO) mission.

The Department requests funding in fiscal year 2024 to support procurement of 88 aircraft, modification, spares, and support equipment—63 fixed wing aircraft including 15 Navy and four Marine Corps F-35C carrier variants; 16 F-35B Short Takeoff and Vertical Landing variants; two Marine Corps KC-130Js; and 26 T-54A multi-engine training system aircraft. Additional unmanned aircraft procurements include two MQ-4C Unmanned Aircraft in fiscal year 2024, five MQ-9A ER, two XQ-58 Valkyrie Collaborative Combat Aircraft (CCA) for prototype experimentation, and three carrier-capable MQ-25 aircraft. Rotary wing investments include 15 CH-53Ks.

The fiscal year 2024 budget prioritizes readiness recovery, continuing prior year gains on ship and aircraft maintenance efforts to improve overall department readiness. It includes a significant investment in submarine maintenance through the 15-Year SSN Maintenance Strategy with the goal of reducing maintenance periods and improving the operational availability of these critical assets. The request continues investment to develop improved war-fighting capabilities across all domains and distributed maritime operations, investing in long range fires and hypersonic weapons as well as increases to unmanned platforms. This budget also develops the Integrated Combat System (ICS) which will deliver decision superiority at rapid speed and enable ships to operate force-wide as an integrated system.

The budget request increases investment in the Commandant's Force Design 2030 priorities by \$705 million, moving programs from concept/experimentation to production within three lines of effort (LOE)—logistics, sensing, and fires. These investments provide unique capabilities the Marine Corps requires to enable joint force access, sense and make sense of the battlefield, to close kill chains, and apply lethal fires when required to deter or defeat adversaries.

The fiscal year 2024 budget continues investment in the defense industrial base to ensure the continued viability of the crucial businesses and infrastructure needed to ensure our ships, aircraft, and ground equipment are available when needed for the defense of the Nation and our interests abroad. The budget request includes a \$647 million investment in the submarine industrial base to support serial production of *Columbia*-class nuclear-powered, ballistic missile submarines (SSBN) in parallel with *Virginia*-class nuclear-powered attack submarine (SSN) construction. The budget makes significant investments in the munitions industrial base, supporting multiyear procurement (MYP) contracts for critical munitions including Standard Missile (SM-6), the Naval Strike Missile (NSM), and the Long-Range Anti-Ship Missile (LRASM). MYP contracts will generate Economic Order Quantity (EOQ) savings, stabilize the demand signal to the industrial base, and enable the Department to respond quickly to future contingencies.

SUMMARY

The Navy and Marine Corps team continues to meet challenges head on—in cyberspace, in outer space, on the sea, under the sea, in the littorals and in the air every single day. With Congress' support, the Department of the Navy is focused on rapidly researching, developing, acquiring, and fielding the material solutions required to be more lethal, sustainable, resilient, survivable, agile, and responsive. We are committed to providing the Nation with a combat-credible, dominant, globally responsive naval force to keep the sea lanes open, deter conflict, and when called upon, decisively win our Nation's wars.

Programmatic details regarding Navy and Marine Corps capabilities are summarized in the following section.

U.S. NAVY AND MARINE CORPS SEAPOWER CAPABILITIES

SHIP PROGRAMS

Submarines

Ballistic Missile Submarines, coupled with the TRIDENT II D-5 Strategic Weapons System (SWS), represent the most survivable leg of the Nation's strategic arsenal, and provide the Nation's most assured nuclear response capability. Modernizing

this capability with both the *Columbia*-cSSBN and TRIDENT D5 Life Extension 2 (D5LE2) will ensure the effectiveness and availability of the Nation's Sea Based Strategic Deterrent through the 2080's. *Columbia*-class is the Navy's #1 acquisition priority as its construction and delivery are critical to pace the retirement of current ballistic missile submarines.

The lead ship of the class, *District of Columbia*, started construction in fiscal year 2021. This ship must be on patrol in 2030 to meet STRATCOM requirements. The second ship of the class, *Wisconsin*, will officially start construction in the first quarter of fiscal year 2024. The fiscal year 2024 budget request includes the first year of incremental funding for the second ship, advance procurement and advance construction funds for future ships, and funding for continued class design efforts. The fiscal year 2024 budget continues funding for several initiatives that are essential to reducing construction schedule risk and enabling cost savings including continuous production of missile tubes and various critical components, multi-program material procurement and procurement of production backup units. Through these congressionally granted authorities, the Navy has realized significant benefit. In missile tube production, which is tightly coordinated with procurement of Common Missile Compartment material for the U.K. *Dreadnought*-class submarines being executed under the Polaris Sales Agreement, all missile tubes in support of *Columbia* Hull 1 and U.K. *Dreadnought* Hull 1 have been delivered. Using authorities provided by Congress, General Dynamics Electric Boat and Huntington Ingalls Industries-Newport News continue to procure material to maintain and grow the submarine industrial base as the program builds to annual procurements beginning in fiscal year 2026.

The Navy has taken delivery of 21 *Virginia*-class submarines with 17 additional under contract. Two deliveries are planned in 2023: *Hyman G Rickover* (SSN 795) this summer and *New Jersey* (SSN 796) this fall. The second ship of the Block V contract is under construction and will introduce the *Virginia* Payload Module, which helps mitigate the loss of undersea strike capability with the retirement of SSGNs later this decade. All Block V ships will incorporate Acoustic Superiority program improvements. The Navy recognizes that *Virginia*-class construction performance continues to be challenged to meet the required two per year delivery cadence and is working closely with shipbuilders to stabilize and improve performance in the industrial base. The fiscal year 2024 budget includes funding for two *Virginia* SSNs, which will be procured as options under the Block V contract as one *Virginia* Payload Module ship and a modified *Virginia*-class Subsea and Seabed Warfare order form. The budget also includes funding for advance procurement and economic order quantity funding for the next block (Block VI). The fiscal year 2024 budget also includes cost to complete funding for several Block IV boats to address COVID impacts, supplier disruptions and shipyard performance, as well as R&D funding for continued development of capabilities and technologies for future Blocks.

The Navy is also working closely with our allies—Australia and the United Kingdom—to implement the AUKUS Optimal Pathway for Australia to acquire a conventionally armed, nuclear powered submarine capability. On March 13, the President announced plans to employ a phased approach to provide this capability on the fastest possible timeline, while upholding the highest standards for nuclear stewardship and setting a precedent that strengthens the nonproliferation regime. As the President made clear, our three nations are making concrete commitments to each other, and we are backing these commitments up with significant investments to strengthen the industrial bases of each of our nations.

The submarine industrial base faces an increase in demand across the enterprise as the Navy ramps up production of the *Columbia*-class while continuing two-per-year *Virginia*-class procurements. The Navy is taking steps to expand and strengthen the submarine industrial base to support concurrent construction of *Virginia* and *Columbia*-class submarines, and appreciates congressional support to address these challenges. In 2021, the Navy partnered with the Office of the Secretary of Defense on a comprehensive study to assess the submarine industrial base's ability to design, construct, and deliver submarines at rates consistent with current and future shipbuilding plans. The fiscal year 2024 budget continues efforts to fund submarine industrial base investments identified in the study. Investments are targeted in six key areas to include shipbuilder infrastructure, supplier development for capability/capacity, scaling of new technologies, workforce trade skill gaps and constraints, expanding productive capacity via strategic outsourcing, and government oversight of these efforts. The Navy has seen significant benefit from this funding in areas such as new technology through standing up of the Additive Manufacturing Center of Excellence in Danville, VA, workforce development by scaling up the Accelerated Training in Defense Manufacturing program and launching of an aggressive campaign to recruit people into key defense trades and shipyard infrastructure in the

groundbreaking for the multi-class submarine production facility at Newport News, VA.

The fiscal year 2024 budget continues the efforts started in fiscal year 2022 in support of requirements development, Analysis of Alternatives execution, concept design and technology development for the Future Attack Submarine (SSN(X)). As the *Columbia* design workforce efforts diminish, SSN(X) design efforts will ramp up, thereby maintaining the strength of the submarine design workforce. SSN(X) is anticipated to start construction in the mid-2030's, which will ensure a production workforce is in place as *Columbia* production ramps down.

Aircraft Carriers (CVNs)

The fiscal year 2024 budget fully funds the operations and maintenance of 11 In-Service Aircraft Carriers, three *Ford*-class Carriers under construction, and a Service Life Extension that will allow USS *Nimitz* (CVN 68) to conduct one additional operational cycle in support of the Nation. The fiscal year 2024 budget also provides investment in Sailor Quality of Service at Newport News Shipbuilding to improve the living conditions of our sailors onboard aircraft carriers and other ships undergoing extensive maintenance or construction.

The USS *Gerald R Ford* (CVN 78) has fully transitioned into an operational platform and joined six NATO allies in completing its first service-retained deployment in 2022. During deployment the ship sailed over 9,000 miles, flew 2,400 hours, and performed over 1,200 sorties. Training is currently ongoing to prepare CVN 78, its Carrier Air Wing, and the other ships of its Carrier Strike Group for future operational commitments later this year. Performance of key systems continue to improve as more than 13,000 launches and recoveries have been completed aboard CVN 78. Advanced Arresting Gear (AAG) and Electromagnetic Aircraft Launch System (EMALS) average Availability (Ao) is greater than 0.977 for the last 5,500 launch and recoveries for both systems. John F Kennedy (CVN 79) is 89 percent construction complete and implementing a revised delivery/post-delivery strategy to prepare the ship for operations in the Indo-Pacific region and decrease the amount of time the ship will be required to be at the shipyard after ship delivery. *Enterprise* (CVN 80) construction is 28 percent complete, and *Doris Miller* (CVN 81) is in early production and pacing ahead of previous *Ford*-class carriers for material procurement. The Navy remains committed to reducing and controlling the cost of *Ford*-class aircraft carriers and continues to benefit from the up to \$4 billion savings expected to be achieved through the two-ship CVN 80 and CVN 81 contract award.

The *Nimitz*-class Refueling Complex Overhaul (RCOH) is the refueling of the ship's reactors and full recapitalization of the carrier in support of the second half of its service life. The USS *George Washington's* (CVN 73) RCOH is scheduled to complete in June. USS *John C Stennis* (CVN 74) is 42 percent complete, and USS *Harry S Truman* (CVN 75) will award its execution Advanced Planning (AP) contract this year to support commencing RCOH in fiscal year 2025.

The Navy is nearing completion of the final Environmental Impact Study (EIS) for the disposal of the ex-*Enterprise* (ex-CVN 65) and expect results before the end of 2023. This EIS will inform the Navy's decision on how to commercially recycle the first nuclear powered aircraft carrier.

Large Surface Combatants

Arleigh Burke-class (DDG 51) destroyers are the workhorse of the Fleet, with 72 ships delivered as of February 2023. In fiscal year 2023 Congress authorized MYP authority for up to 15 DDGs in fiscal year 2023-2027, and provided funding for three ships. The shipbuilders have a total of 17 DDG-51s under contract and 11 ships in various stages of production.

Flight III DDG 51s will provide enhanced Integrated Air and Missile Defense (IAMD) with the AN/SPY-6(V)1 Air and Missile Defense Radar (AMDR) and AEGIS Baseline 10 (BL10). The Flight III leverages the proven Flight IIA platform with modifications for hull stability, cooling, and power to accommodate AMDR. AMDR meets the growing ballistic missile threat by improving radar sensitivity and enabling longer range detection of increasingly complex threats. The program demonstrated design maturity through its successful completion of all developmental testing. AMDR is in production for delivery to support Flight III ships. Initial shipboard testing of the radar and combat system has commenced on the first DDG 51 Flight III ship, USS *Jack H Lucas* (DDG 125), which has already undergone initial builders sea trials and will deliver in fiscal year 2023. As part of a two-phased testing approach, Initial Operational Capability (IOC) in fiscal year 2024 will include Air and Missile Defense Commander (AMDC) capability with core ballistic missile defense capability for Long-Range Search and Track and Sea Based Terminal. This aligns with Fleet priorities for Flight III to replace Cruisers in the AMDC role. Fol-

low-on testing will support the IAMD key performance parameters with completion of Initial Operational Test and Evaluation, which culminates with Flight Test Mission (FTM)–42 in the Q4FY27.

Aligned with congressional intent, risk reduction integration testing of critical Flight III systems is ongoing. BL10 is being integrated with a LRIP SPY–6 array and power conversion equipment at a land-based development site to buy down risk of first-time integration at the waterfront aboard DDG 125. The first two successful at-sea testing trials of the Flight III electric plant were conducted in December 2022 and February 2023, proving operational integration and testing of the Machinery Control System software. The first combat system software incremental load was delivered to DDG 125 in February 2022 with additional at-sea testing later in fiscal year 2023.

The *Zumwalt*-class (DDG 1000) guided missile destroyers are multi-mission surface combatants designed to provide long-range, offensive surface strike capabilities. The DDG 1000 program continues to accomplish first-time integration of unique combat systems elements, complete Post Delivery Test and Trials, demonstrate operational performance, and planning efforts for the first integration of Conventional Prompt Strike (CPS) hypersonic weapon system. USS *Zumwalt* (DDG 1000) will be the first maritime platform to integrate the CPS weapons system, with work starting in October 2023.

In fiscal year 2022, DDG 1000 conducted a deployment to the western Pacific that included port visits to Pearl Harbor, HI, Guam, and Yokosuka, Japan and included the first material inspection by INSURV for the class. DDG 1001 participated in submarine Command Course Mini-Wars February-March 2022, conducted Survivability test events in March 2022, and Deck Landing Qualifications in April 2022 to include 16 deck landings with UH–1Y (Huey) and AH–1Z (Cobra) helicopters and fueling during the landing operations. DDG 1001 participated in the 28th edition of the biennial Rim of the Pacific (RIMPAC) international maritime exercises in July 2022, and completed Failure and Recoverability Mode Testing / Enhanced Total Ship Survivability Trial in September 2022. DDG 1002 sailed from Bath, ME to Pascagoula, MS for the first phase of the Combat Systems Activation (CSA) which was awarded in August 2022. In December 2022, the Navy approved a plan to install CPS during the CSA, allowing for delivery of a complete DDG 1002 to the Fleet with CPS capability.

DDG(X) will be the next enduring large surface combatant (LSC) that follows the highly successful DDG 51 Class. Like DDG 51's evolution from CG 47, the initial flight of DDG(X) is a new hull form built around the DDG 51 Flight III's AMDR with AEGIS BL10 to deliberately reduce execution risk. DDG(X) will provide significant increases in range, efficiency, and time-on-station compared to the DDG 51 Class, providing Fleet Commanders with increased operational flexibility and decreasing the demand on Fleet Logistics. When deployed with the FFG 62 Class, which is designed to relieve LSCs of lower-tier missions, the resulting Fleet mix will directly contribute to the Navy's concept of DMO. DDG(X) will provide the flexibility and margins (space, weight, power, and cooling reservations) to accommodate required future capacity and capability upgrades to counter evolving threats. The Navy is committed to a smooth and successful transition from DDG 51 to DDG(X), currently planned to begin around fiscal year 2032. The transition will preserve the critical shipbuilding and supplier industrial base by executing a collaborative design process with current DDG 51 shipyards and transitioning to a proven limited competition model between these shipyards at the right point in ship construction.

Small Surface Combatants

The *Constellation*-class Frigate (FFG 62) is the evolution of a proven parent design built to Naval combatant design standards with increased lethality, survivability, and improved capability to support the full range of military operations as part of a more lethal Joint Force. The FFG 62 program is managing development risk by combining proven ship designs with mature, best-of-breed Government Furnished Equipment designated combat system elements. Consistent with congressional intent, the Navy is establishing a FFG 62 Land Based Engineering Site to reduce integration risks and test power and propulsion systems. Equipped with Navy standard Government Furnished Equipment (GFE) combat system elements, the Navy is confident in the multi-mission capabilities FFG 62 will deliver to the Fleet. The first three ships, the future USS *Constellation*, USS *Congress*, and USS *Chesapeake* are under contract, and the lead ship started construction on August 31, 2022. The fourth ship will go on contract in fiscal year 2023.

The LCS program has delivered 29 of the 35 total funded ships. The Navy has installed NSM on eight Independence variant LCS platforms, and 14 LCS hulls are programmed to receive the weapon system in the future. Additionally, execution of

the first LCS Lethality and Survivability (L&S) upgrade is on track for USS *Gabrielle Giffords* in fiscal year 2024. Development of the L&S Common Combat System continues and will support transition from shipbuilder-procured contractor-furnished equipment to program of record government furnished equipment. Through the efforts of the LCS Strike team and Task Force LCS, reliability of the LCS platform has continued marked improvement, with successful LCS deployments in fiscal year 2022 in 4th, 5th, 6th, and 7th Fleets and planned operations across the Fleets in fiscal year 2023. In the past year, the Navy has made significant progress in its effort to modernize mine countermeasure (MCM) capability, as the MCM Mission Package (MP) completed initial operational test and evaluation in fiscal year 2022 with declaration of IOC imminent. This capability is expected to fully replace the aging *Avenger*-class MCM fleet by the end of fiscal year 2027.

Large Deck Amphibious Warfare Ships

Amphibious warfare ships remain a critical component of the Nation's global forward presence, supporting deterrence, crisis and contingency response missions and providing decision space for our Nation's leaders. These ships support the amphibious assault, special operations, and expeditionary warfare missions of U.S. Marines and often Special Operations Forces by providing sovereign bases at sea, offering flexible services that provide shelter and sustainment, and enabling Marines, Sailors, and Special Operations Forces to plan and train a tailorable force.

The *America*-class Amphibious Assault Ships (LHA 6) program provides a lethal and versatile platform to serve as the flagship for the Expeditionary Strike Group (ESG)/Amphibious Ready Group (ARG) now and in the future. Among other capabilities, these ships host the fifth-generation F-35B Joint Strike Fighter (JSF) aircraft that are critical to maintaining air combat superiority. USS *Tripoli* (LHA 7) transitioned to in-service and completed its maiden deployment in 2022. LHA 7 also completed the "JSF Heavy" operational test in 2022, embarking 20 Joint Strike Fighters for the first time compared to a normal embark of ten aircraft. Bougainville (LHA 8), first of the LHA Flt I class, is at 63 percent construction complete with launch planned for summer 2023. LHA 8 includes a well deck to increase operational flexibility and a reduced island structure increasing flight deck space to enhance aviation capability. The Fallujah (LHA 9) construction contract was awarded in October 2022 and fabrication started in December 2022. Following advance procurement funding appropriated in fiscal year 2023, this year's budget request accelerates LHA 10 by 4 years to a fiscal year 2027 ship.

Other Amphibious Warfare Ships

San Antoni-class Amphibious Transport Docks (LPD 17) provide the ability to operate offensively in a medium-density, multi-threat, anti-access littoral environment by being a seabase for the Marine Expeditionary Unit (MEU), capable of launching and recovering helicopters, tiltrotor aircraft, landing craft, and amphibious vehicles, and Special Operations Forces. The *San Antonio*-class LPD is an essential component of the amphibious warfare ship inventory, and continues to be constructed in a cost-efficient manner with capabilities critical to providing strategic mobility, force projection, and the range to campaign across the globe. NASA's Orion spacecraft for the Artemis I mission was successfully recovered inside the well deck of the USS *Portland* (LPD 27) in December 2022 off the coast of Baja California. USS *Fort Lauderdale* (LPD 28) commissioned in July 2022. *Richard M McCool Jr* (LPD 29) is 87 percent complete and is planned for delivery in the second quarter of fiscal year 2024. LPD 28 and LPD 29 are the last of the LPD 17 Flight I line to be constructed and are the transition ships to the LPD 17 Flight II. The first Enterprise Air Surveillance Radar antenna was fitted on LPD 29 in January 2023, bringing the Navy one step closer to having a common radar hardware variant for carrier and amphibious ships. The first Flight II ship, *Harrisburg* (LPD 30), is 34 percent complete with a planned delivery in fiscal year 2026. *Pittsburgh* (LPD 31) started ship fabrication in September 2022.

Connectors

The Ship to Shore Connector (SSC) program provides a robust, modern operational capability to land credible combat power from amphibious ships across beaches not accessible by conventional landing craft, thus enabling the Marine Corps and Navy to project combat power ashore from the sea. The SSC provides a one-for-one enhanced replacement platform for legacy Landing Craft Air Cushion (LCAC), which are beginning to reach an average 30 years of age. While no SSC are requested in fiscal year 2024 as the Navy works through orders under contract, SSC procurement is planned to continue in fiscal year 2025. The Navy is continuing to support production progress in serial SSC deliveries and evidenced by the delivery of four crafts (Hulls 103 to 106) over the last 15 months. The 2023 Consolidated

Appropriations Act added funding for three additional SSC for five total. The 2023 National Defense Authorization Act granted the authority to enter into one or more contracts for the procurement of up to 25 craft.

The Navy is also replacing its aging Landing Craft Utility (LCU) fleet with the LCU 1700 program which recapitalizes the capabilities and flexibility currently provided by the LCU 1610 class in a more fuel efficient, cost effective, and updated design. The fiscal year 2024 budget request continues to modernize the aging LCU fleet, which is currently approaching an average age of 50 years, with a request for two additional LCU 1700.

Expeditionary, Auxiliary, and Other Vessels

Expeditionary support vessels are flexible platforms used across a broad range of military operations in support of multiple operational phases. Moving forward the Light Amphibious Warship (LAW) is being referred to as the Medium Landing Ship (LSM) to better align name to mission and differentiate the platform from traditional larger, multi-purpose amphibious warfare ships classes. LSM is not a forcible entry platform. It is planned to fill the capability gap that exists between the Navy's large, globally deployable, high endurance, multipurpose amphibious ships and smaller complementary landing craft. The Navy and Marine Corps have come to an agreement on requirements and will pursue a commercial parent design with vulnerability and recoverability improvements to support overall vessel survivability. LSM concepts were refined and matured with the five initial industry partners under preliminary design studies awarded in January 2022 with follow-on studies awarded in January 2023. The fiscal year 2024 funding request continues the development of acquisition documentation, equipment baseline, and efforts to support a lead hull contract award in fiscal year 2025.

In the interim, the DON is evaluating a diverse group of existing naval platforms (e.g., EPF, SLV, LCU, etc.) to act as the bridging solution to support Stand-in Forces operating in the Indo-Pacific until LSM is available. Interim material solutions can support limited subsets of the overall LSM operational concept and may require additional modifications. The Marine Corps has chartered a commercial Stern Landing Vessel (SLV) to experiment and prototype the SLV's use in providing logistics/sustainment capability to support EABO and Stand in Forces with a flexibility to navigate the littorals to deliver cargo initially or for resupply and maneuver Marines. The SLV offers the Marine Corps the ability to experiment with a roll-on/roll-off vessel capable of beaching on sand, gravel, shale, small stone, and man-made marine ramps. On February 13, 2023, the first SLV was officially undocked from its dry-dock location and is undergoing final shipyard modifications and various trials and inspections. Once complete and following acceptance, the vessel will undergo a thorough technical evaluation period and then conduct experiments and participate in exercises. The fiscal year 2024 budget requests \$31 million to support the planned acquisition of a 3d SLV to be delivered in fiscal year 2025.

In addition to the SLV, the Marine Corps is pursuing a future strategy for a smaller surface distribution connector—the Ancillary Surface Connector (ASC). ASC will be built by the commercial market to answer a Service requirement for a III Marine Expeditionary Force inter-island connector that supports the delivery of logistics over the “last tactical mile.” In this effort, the Marine Corps is currently conducting trade space analysis and evaluating contracting options to pursue the most cost-effective options for continued experimentation.

Finally, the Navy is investigating the use of existing platforms to provide subsets of the overall LSM maneuver mobility and sustainment mission. These include, but are not limited to, the EPF which can provide a pier-to-pier role, and the LCU which can provide intra-island lift over limited ranges.

Fast Transport (EPF) provides rapid, agile, intra-theater personnel and equipment lift in support of DMO and Littoral Operations in a Contested Environment. These vessels have and continue to support critical partnerships throughout the Indo-Pacific, to include theater security cooperation events such as Task Force Koa Moana with the Republic of Palau. During this annual event in 2021 and 2022, USNS *City of Bismarck* (EPF-9) supported Marines and Sailors from I Marine Expeditionary Force. The newest EPF, the *Apalachicola* (T-EPF 13), includes installation of evolutionary autonomy functions, serving as an important point of learning as Navy advances its unmanned vessel efforts. *Apalachicola* was delivered in February 2023 and successfully completed Unmanned Logistics Prototype trials. *Cody* (EPF 14) and *Point Loma* (EPF 15) are under construction with deliveries planned in fiscal year 2023 and fiscal year 2025 respectively. EPF 16 is scheduled to start construction in fiscal year 2023.

The EPF Flight II (EPFs 14–16) does not have the autonomous capability of EPF 13 but is a modified EPF design that incorporates engineering, design and oper-

ational improvements which will provide Combatant Commanders with a more flexible and capable platform, and enable an embarkable Role 2 Enhanced (R2E) medical capability. EPF Flight II will be capable of conducting the same missions conducted by the EPF but with a reduced lift capacity.

Fiscal year 2023 appropriations included the addition of two Expeditionary Medical Ships (EMS). EMS is an EPF variant that has a similar shallow draft, is all aluminum, and is a commercial-based catamaran design. However, it is optimized to provide dedicated R2E medical care and intra-theater patient movement. The EMS will provide combatant commanders high-speed transport mobility to move casualties over operational distances. Construction of the first EMS ship is expected to start in fiscal year 2024.

The Expeditionary Sea Base (ESB) is a modified commercial ship that acts as an afloat forward staging base. ESBs are versatile ships that provide a flight deck platform, mission deck and cargo capacity, and command and control capabilities for mission planning and execution. The Navy accepted delivery of USS *John L Canley* (ESB-6) on March 1, 2023. ESB 7 had its keel laid in October 2022, and ESB 8 is planned to start construction in August 2023.

The fiscal year 2024 request continues to expand DON combat logistics capacity with construction of the *John Lewis* (T-AO 205) class fleet replenishment oiler to recapitalize the T-AO 187 class, which has been in-service since the mid-1980's. USNS *John Lewis*, the lead ship of the T-AO 205 class, delivered in July 2022. T-AO hulls 206 to 209 are currently under construction, and hulls 211 and 212 were put on contract in August 2022. The Navy is working through revised economic assumptions to support inflation-related cost growth and schedule delays due to late material and shipyard workforce challenges.

The T-ATS Towing, Salvage, and Rescue vessels are intended to replace the mission requirements of both retiring T-ARS 50 and T-ATF 166 classes. They provide ocean-going tug, salvage, and rescue capabilities to support U.S. fleet operations and will be a multi-mission common hull platform capable of towing heavy ships. There are nine T-ATS on contract and seven under construction across two shipyards. A second production source was established in June 2021 to support the shipbuilding industrial base and expedite delivery to the fleet.

The Auxiliary General Ocean Surveillance ships (T-AGOS 25 class) consists of a seven-vessel program of record, with four vessels procured through the FYDP. Ocean Surveillance ships gather underwater acoustical data by providing a ship platform capable of anti-submarine passive and active acoustic surveillance. T-AGOS ships are operated by Military Sealift Command and support the anti-submarine warfare mission of Atlantic and Pacific Fleet Commanders. Fiscal year 2024 includes the SCN funds necessary to award the Detail Design & Construction contract for the first ship this year. The T-AGOS 25 ships will replace the T-AGOS 19 and T-AGOS 23 class ships.

Strategic Sealift

The DON remains committed to sealift readiness and recapitalization, working with our partners in USTRANSCOM and the Maritime Administration (MARAD). This recapitalization strategy includes procurement and refurbishment of used commercial Roll-On Roll-Off ships for replacement of aging Ready Reserve Force capacity. The buy-used recapitalization program provides a stable acquisition profile with forecasted maintenance and repair costs to meet strategic mobility requirements at a moderate level of risk. The work to modify and outfit these used vessels will continue to be performed by U.S. shipyards. On February 27, 2023, MARAD completed the purchase of three ships that recapitalize over 660,000 square feet of Sealift capacity. In March 2023, two used vessels, the Cape Arundel and Cape Cortes, will complete modification and outfitting availabilities with commercial industry partners and enter into the Ready Reserve Force with 432,000 square feet of capacity.

In parallel with recapitalizing strategic sealift, the Navy and Marine Corps are in the early stages of developing requirements for the next generation of maritime prepositioned ships. The DON will initiate a new construction program to replace the current Maritime Prepositioning Force (MPF) ship portfolio. New MPF ships will include capability adaptations that support reliance on sea-basing to persistently project, sustain, and maintain discrete forces forward in the competition space. Funding included over the FYDP will support industry studies to prepare for new construction design work. Currently, five of the 12 maritime prepositioning ships have returned to CONUS in fiscal year 2023 and have been placed in reduced operating status-5 (ROS-5). ROS-5 is designed to have the ships fully ready to activate and load cargo 5 days after notification. All ships, regardless of status, will continue to be maintained by, and operate through, Military Sealift Command for MPF usage through fiscal year 2024. Two of the five ROS-5 ships will remain partially pre-load-

ed with prepositioned materiel at Blount Island Command. The remaining three ships will be in various CONUS lay berths and not be loaded with prepositioned materiel. In fiscal year 2025 those three ships are scheduled to transition to MARAD and be removed from the Naval prepositioned force.

Sustainment, Modernization, Service Life Extensions and Divestments

The Department continues to prioritize proper maintenance and modernization of the Navy's fleet to ensure the Fleet Commanders have the ships they need with the required capabilities to quickly respond to evolving operational demands. The Navy is making headway in reducing deferred maintenance backlogs and driving down the days of maintenance delay by improving the timely delivery of ships back to the Fleet on time and with all required work completed. The Navy is focusing efforts across the entire maintenance planning and execution spectrum from work package planning, procurement strategies, and waterfront execution to drive out unnecessary delays and improve performance. The DON is also leveraging the Perform to Plan approach across the portfolio to improve quality of specification packages, workload planning and port loading, earlier government material delivery to our industry partners, inspection streamlining, and ensuring roles and responsibilities are assigned to enable efficiency in execution without sacrificing proper oversight responsibilities. Proper planning and sharing of workload projections with industry allows for the Navy's partners to effectively manage their infrastructure and workforce and identify opportunities for targeted infrastructure investments.

Beyond maintaining the current Fleet, the Navy is also focused on critical modernization efforts that will ensure the Navy's in-service Fleet has relevant combat capability. The Navy is investing \$17 billion over 17 years to modernize 25 Flight IIA DDGs that will ensure sustained combat effectiveness, mission relevancy, and enable the AEGIS Fleet to achieve their full expected service lives. The fiscal year 2024 budget funds the second procurement of a SPY-6 variant for back-fit on in-service DDGs, the combined hull, mechanical & electrical and combat system/AEGIS modernization upgrade installations on three DDGs in fiscal year 2024, the necessary procurements for another two installs planned in fiscal year 2026, and the procurement of the first high efficiency super chiller shipset planned for installation in fiscal year 2026. The Navy is working to ensure lessons learned from Cruiser Modernization are incorporated in the availability planning for DDG Modernization availabilities across acquisition planning, including contract type and procurement strategies, system lay-up and reactivation, crew manning, and training. Additionally, to ensure the Navy and its industry partners are properly prepared for the magnitude and complexity of DDG Mod 2.0 availabilities scheduled to commence in fiscal year 2028, the Navy is utilizing a "crawl-walk-run" approach of stand-alone and incremental modernization for the early Flight IIA hulls.

The Navy is committed to balancing the submarine maintenance workload within the public and private shipyards, as well as maintaining a healthy industrial base for both submarine maintenance and new construction. To that end, the Navy has a new 15-Year Maintenance Strategy to improve SSN material availability and outline approaches to optimize submarine repair at all shipyards, including private-sector maintenance execution. In fiscal year 2023, the Navy with OSD(CAPE) is conducting a shipyard capacity and capability study to identify additional areas for improvement. The Navy will continue to work with our industry partners to improve cost and schedule performance for submarine maintenance, providing valuable maintenance surge capacity.

To ensure the Navy's resources are most effectively utilized across the portfolio and support the NDS priorities, the fiscal year 2024 budget proposes decommissioning 11 ships in fiscal year 2024. Of these 11 ships, three are at or beyond expected service life (ESL) and eight are prior to ESL. For the three ships at or beyond their ESL, inactivation in fiscal year 2024 is a standard practice at the end of a ship's lifecycle. For the eight ships the Navy plans to divest of in fiscal year 2024 (3 CG, 3 LSD, 2 LCS), substantial maintenance, repair, and modernization costs significantly outweigh warfighting contribution, and the cost savings from these divestments allow for realignment to higher priority, more capable platforms for strategic competition. The Navy is continuing to trade near-term Fleet size and capacity for long-term capability. The fiscal year 2024 budget does not resource a Fleet size beyond what the Navy forecasts can be reasonably sustained, accounting for manning, training, maintenance, ordnance, operations, and future modernization.

The CG and LSDs have exceeded their expected utility for current and future conflict. Keeping these platforms longer than the Navy plans would require significant resources to maintain, modernize, and operate them with limited return on that investment. The Navy cannot justify the resultant limited capability these assets

would provide over their remaining service life when compared with the benefits of investing in critical modernization and new construction efforts. For the LCS, the fiscal year 2024 budget maintains the Navy’s plan to divest LCS 6 and LCS 8 in fiscal year 2024. These hulls are the oldest of the “block-buy” *Independence*-class LCS and are in excess to the planned LCS force requirements.

Shipyards Infrastructure Optimization Program (SIOP)

The Navy’s four public shipyards perform an essential role in national defense by executing maintenance on submarines and aircraft carriers to provide combat-ready ships to the fleet. SIOP, when fully executed, will deliver required dry dock repairs and upgrades to support current and planned future classes of nuclear-powered aircraft carriers and submarines, optimize workflow within the shipyards 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 instituting a first-of-its-kind infrastructure acquisition process for SIOP, similar to major defense acquisition programs. The SIOP-tailored acquisition process will guide program execution and establishes threshold and objective parameters for overall cost, schedule, and performance of the SIOP at each shipyard with total program cost.

With the tremendous support received from Congress—to include the \$1.9 billion appropriated in fiscal year 2023—the program is advancing three lines of effort: dry dock modernization, optimization, and capital equipment. The Navy has completed construction of the \$158 million Super Flood Basin at Portsmouth Naval Shipyard (PNSY) and commenced the construction of two new dry docks; completed construction of the \$73 million Norfolk Naval Shipyard (NNSY) Production Training Facility; completed \$167 million of design for Pearl Harbor Naval Shipyard (PHNS) Dry Dock (DD) 3 Replacement, and on March 10, awarded a \$2.8 billion task order for the construction of the PHNS DD3 Replacement. Planning for DD3 Replacement successfully employed early contractor involvement at multiple milestones throughout design development and continuous macroeconomic assessments which contributed to a competitive bid environment and multiple bids being received. The fiscal year 2024 budget confirms the Administration’s commitment to this program and requests \$2.7 billion for SIOP.

Unmanned Surface and Undersea Vehicles

The DON continues to invest and mature all the enabling and core technologies needed to deliver unmanned surface and undersea capabilities. These capabilities along with the platforms are foundational to creating the hybrid fleet of the future. MUM-T will increase capacity, standoff, reach, and provide protection of our manned platforms while reducing risk to our sailors and marines. USVs will expand Information Operations and missile magazine depth.

In keeping with the USV systems engineering pillars, fiscal year 2022 efforts continued work with the Navy’s industry partners on maturing reliable Hull, Mechanical and Electrical capability; advancing the required networks and radios; common core USV Combat System; vessel control software; sensory perception and autonomy; and platform and payload prototyping. In fiscal year 2022, the Navy’s autonomy-enabled ships traveled over 45,000 miles in the autonomy mode, and SeaHawk, a medium USV, provided operational support to US Pacific Fleet for an extended period of time.

By the end of fiscal year 2024, the Navy will have an operational MUSV Land-Based Test Site, will have initiated LUSV land-based testing, and will operate several USV prototypes including, four Overlord USVs, Sea Hunter and SeaHawk. Additionally, the first autonomy-enabled EPF-13 will be available for operations to support experimentation and CONOPs development.

The MCM USV program includes the development and production of MCM USV craft and Payload Delivery Systems to deliver multiple capabilities to meet MCM MP requirements. MCM USV reached IOC in July 2022 alongside the Unmanned Influence Sweep System (UISS), one of its two baseline payloads. Initial operational test and evaluation of the MCM MP concluded in August 2022, followed by operational testing focused on mine hunting capability from the MCM USV which completed in September 2022. A MCM MP onboard USS *Cincinnati* (LCS 20) successfully executed the full MCM sequence. This included both the semi-autonomous MCM USV operating with the AQS-20 mine-hunting sonar, minesweeping payload, and MH-60S operating with the Archerfish Airborne Mine Neutralization System (AMNS) and Airborne Laser Mine Detection System. Together, these systems were able to find, fix, identify, target, and neutralize mines. The program continues to develop Barracuda to provide future mine neutralizing capability.

Investing in a family of Unmanned Undersea Vehicles (UUVs) will expand Navy reach and persistence by augmenting manned platform capacity with unmanned autonomous systems. The Navy remains committed to completing the fabrication of the Orca, Extra Large Unmanned Undersea Vehicle (XLUUV), a pier-launched UUV capable of carrying large payloads. The Navy christened the XLUUV Test and Evaluation asset in Q3FY22 and internal component testing completed in Q2FY23. The Large Displacement Unmanned Undersea Vehicle (LDUUV) which will support Subsea and Seabed Warfare (SSW) and Intelligence Preparation of the Operating Environment conducted in-water testing during fiscal year 2022, but was divested in fiscal year 2023 due to deferment of the primary host interface platform (SSN Payload Handling System) and to support higher Navy priorities. The LDUUV program aimed to address a critical gap with increased depth, endurance, and payload capacity. The Navy is re-evaluating LDUUV hosting requirements while continuing to conduct LDUUV experimentation and demonstrations of SSW capabilities.

The Navy awarded the Medium UUV (MUUV) Program of Record contract in July 2022. It supports the development of a common Medium vehicle merging Expeditionary Mine Countermeasures Viperfish with Submarine Force Razorback Torpedo Tube Launch and Recovered requirements, demonstrating Navy commitment to identify efficiencies in procurement and sustainment of unmanned systems.

Through a partnership with the Defense Innovation Unit, the DON used accelerated acquisition authorities such as commercial solution openings and other transactions to award the Lionfish contract. Lionfish is a small, lightweight, highly portable vehicle that can be mission configured to support Explosive Ordnance Disposal and Naval Special Warfare, Underwater Construction Teams, and Mobile Diving & Salvage Units. The program continues prototype development and user testing, and plans to award a production contract for 10 MK18 MOD3 Lionfish vehicles for the Marine Corps and three NSW vehicles for the Navy in Q3FY23. Lionfish will include advancements to the artificial intelligence, machine learning, Automated Target Recognition, and autonomy processes currently fielded with the MK18 MOD2 UUV, expanding the capabilities of the DON's intelligent family of UUVs.

The Marine Corps continues developing the Long-Range Unmanned Surface Vessel (LRUSV). LRUSV will be capable of launching the Organic Precision Fires loitering munition to engage targets on land and at sea to enhance Naval and Joint Force Commanders' sea denial campaigns. The Marine Corps accepted delivery of five LRUSV prototypes between 2QFY22 and 2QFY23 for experimentation and analysis, and an early operational assessment will be conducted in Q3FY23. The Marine Corps remains on schedule and within budget to deliver an LRUSV Experimental Platoon for further development and unit training.

In accordance with our plans to build a DMO hybrid fleet, the Navy and Marine Corps are conducting studies to assess the supporting infrastructure requirements of unmanned systems, to include "motherships" to provide on demand command and control nodes in a denied environment, launch and recovery, maintenance, and re-supply/refuel for all unmanned systems at sea, in all domains in addition to evaluating potential new concepts of operations.

Combat Systems

The Navy continues to field the most capable and lethal surface and submarine combat systems in the world, making investments that take full advantage of open architecture and continuously evolving commercial technology to rapidly deliver real-time and reliable capability to the warfighter and to break the paradigm of hardware-software dependent deliveries. Continued investment in the Forge, the Navy's combat system software factory, supports the continuing advancement in implementing industry standards of Infrastructure as a Service, Platform as a Service, and Software as a Service to rapidly deliver iterative updates to the AEGIS Weapon System. As the Navy continues Integrated Combat System development efforts, new construction and in-service Aegis BL9 and BL10 ships will continue to receive upgrades via Capability Packages. AEGIS BL10 with the integration of the AN/SPY-6(V)1 Air and Missile Defense Radar (AMDR) will deliver significant performance improvements over BL9 and the AN/SPY-1 radar, expanding the sensor coverage and enhancing the Navy's ability to perform the IAMD mission to defeat more advanced and more numerous threats. The DON is leveraging the AMDR's design and testing maturity as well as the common training and sustainment benefits to field the AN/SPY-6(V)2 and SPY-6(V)3 to CVNs, LPDs, LHAs and FFGs, and to backfit existing DDG Flight IIA destroyers with SPY-6(V)4.

The Navy continues to equip its submarines with ever-evolving undersea combat systems, utilizing the Submarine Warfare Federated Tactical Systems (SWFTS) modernization process for hardware Technology Insertions and Advanced Processing Build software upgrades. This process leverages commercial off-the-shelf tech-

nologies to provide advanced capability improvements at lower cost. SWFTS has successfully delivered a progression in warfighting capabilities for decades to our Fleet SSNs, SSGNs and SSBNs including advancements in the combat, sonar, electronic warfare, and imaging systems. SWFTS delivered the first TI-20 installs to the Fleet in fiscal year 2022, bringing added capability and improved system architecture, strengthening cybersecurity and integrating new payload capabilities to provide increased lethality. The fiscal year 2024 budget supports continued implementation of Agile and DevSecOps software development best practices at SWFTS vendors to increase quality, expedite capability delivery, and improve cybersecurity by engraining cyber resiliency into the system architecture. These efforts improve the Fleet's ability to protect against known threats, detect unknown threats when they occur, and respond and recover quickly to an operational State.

TACTICAL AVIATION

Carrier Air Wing (CVW)

The striking power of the CVW remains the cornerstone of power projection capability from 11 of the world's most survivable airfields, our aircraft carriers (CVNs). The modernization of the air wing, and weapons, keeps the aircraft carrier relevant through the carrier's 50 year service life. Today's Air Wing is transitioning to a mixture of 4th and 5th Generation strike fighter aircraft that continue to incorporate advanced capabilities to support the objectives of the NDS. The F-35C is replacing the early lot F/A-18E/Fs. E-2Ds, with an advanced airborne radar, networking, and aerial refueling capability are replacing the legacy E-2C. The CMV-22B is replacing legacy C-2As in support of strike group logistics, and Next Generation Jammer (NGJ) pods will replace the legacy ALQ-99 pods on the EA-18G and provide full spectrum integrated non-kinetic effects.

The Air Wing of the Future (AWOTF) refers to the composition of the CVW as it on-ramps advanced capabilities and capacity, measured at key milestones in the near-, mid-, and long-term. The CVW will adapt and transform from an all "manned" to a teamed "manned-unmanned" force structure over the next two decades. When discussing the AWOTF, a time horizon may be included to specify the force composition at that time.

In the near-term, the AWOTF achieves a mix of F-35C Lightning II, F/A-18E/F Block III strike fighters, and EA-18G Growlers, and introduces the MQ-25 Unmanned Air Vehicles (UAV). The MQ-25 will take over the aerial refueling mission, extending strike range, enhancing maneuverability, and enabling all strike fighters to focus on the high-end fight. In the mid-and long-term, the AWOTF will deliver game-changing lethality and survivability through the NGAD FoS.

The DON has submitted a legislative proposal to remove the title 10 requirement to stand up a 10th CVW by October 1, 2025. The current CVN maintenance schedule efficiently pairs nine CVWs to nine operational CVNs according to ship availability; 11 total CVNs with two under maintenance protocols. The Navy prioritizes investments in AWOTF over constituting a 10th CVW ahead of need.

Marine Expeditionary Unit (MEU) Aviation Combat Element (ACE)

The MEU is the embodiment of the Marine Air-Ground Task Force (MAGTF) as a self-contained, forward-deployed response force. The ARG/MEU is a lethal, forward-deployed, sea-based, expeditionary force that can operate across the range of military operations with a tailorable and uniquely suited complement of aircraft. The MEU's available inventory includes the F-35B, MV-22B, H-1, and CH-53K. The F-35B is the only 5th Generation platform designed to operate aboard amphibious warfare ships and expeditionary landing fields. The F-35B is a vital part of the Marine Corps' modernization efforts, is part of the Stand-in Force, and is a critical enabler for the Joint Force. The F-35B provides commanders with strategic agility, enhanced situational awareness, and greater freedom of maneuver in a highly contested environment.

The MV-22B tiltrotor aircraft continues to be the most capable assault support platform in the joint inventory and has revolutionized how assault support is conducted with its superior speed, range, and survivability. The new CH-53K is the only fully marinized heavy-lift rotorcraft, and is a critical asset for mobility and logistical support to distributed operations in a contested environment. The future ACE will also feature a Group 3 UAS capability that provide both an organic land- and maritime-based intelligence, surveillance, and reconnaissance capability. Additionally, Marine Corps efforts are underway to conduct a demonstration of an afloat mission control element (MCE) for MQ-9A ER. This capability could potentially be tethered to the MEUs, adding a critical, over-the-horizon, persistent surveillance, re-

connaissance, and target acquisition capability and airborne network gateway services to the MEU's overall abilities.

AIRBORNE ELECTRONIC ATTACK (AEA)

The EA-18G Growler is a critical enabler for the Joint Force, bringing fully netted electronic warfare capabilities to the fight and providing essential capabilities in the Electromagnetic Maneuver Warfare environment. The fiscal year 2024 budget retains and fully funds the EA-18G aircraft and squadrons across the FYDP. Next Generation Jammer (NGJ) pods will replace the legacy ALQ-99 pods on the EA-18G and provide full spectrum integrated non-kinetic effects. The delivery of NGJ increases EA-18G Growler's lethality and provides a multi-generational leap in capability against radar and communication targets utilizing advanced AEA techniques as well as improved reliability and maintainability. NGJ is phased by threat, with initial focus on Mid-Band (MB), followed by Low-Band (LB).

NGJ-MB is a cooperative development and production program with Australia, with IOC scheduled in 4QFY23. Delivery of the six production representative System Demonstration Test Articles (SDTAs) began in July 2022, with 5 of 6 SDTA delivered as of February 2023 and the 6th to be delivered the end of March 2023. These Test Articles will be used to support the completion of Developmental Test and the entirety of Operational Test (OT). OT is currently on track to start spring 2023, with a focus on the completion of aeromechanical and mission systems flight test. The fiscal year 2024 budget includes \$40.5 million in RDT&E funding to complete the Verification of Correction of Deficiencies (VCD) of the baseline NGJ-MB program and to begin development of the NGJ-MB Extended (MBX) Engineering Change Proposal (ECP) to extend the upper frequency range coverage limit of the system to counter modern and adaptive threats. The fiscal year 2024 budget request also includes \$426.4 million in APN funding for nine Full Rate Initial Production I shipsets, associated support equipment, training equipment and production support. Three LRIP I shipsets are scheduled to begin delivery 4QFY23.

NGJ-LB is a critical AEA capability to augment and replace the legacy ALQ-99 Tactical Jamming System on the EA-18G in the low frequency bands, and is a cooperative development program with Australia. The fiscal year 2024 budget request \$250.6 million RDT&E for NGJ-LB to focus on pod design, advanced capabilities development, and the build of aeromechanical and mission systems test pods to support ground and flight testing.

Growler Block 2 (GB2) will deliver capabilities to the warfighter to detect, locate, identify and counter advanced Integrated Air Defense Systems and Complex Emitters. GB2 will utilize a phased approach for spiral development of AEA capabilities to modernize processing, sensors, and aircrew decision aids to maintain dominance in the modern electromagnetic spectrum. Phase 1 will include an upgraded Next Generation Electronic Attack Unit with Open Mission Systems architecture, Multi-Level Security, and incorporation of the Reactive Electronic Attack Measures capability. Phase 2 is the addition of the advanced Multi-function Array into the inboard leading edge flaps of the aircraft, augmenting the ALQ-218 functionality and capability. GB2 serves as a critical technology development and risk reduction effort to support Naval Aviation's Air Wing of the Future.

The Marine Corps, through the INTREPID TIGER II program, is bringing advanced Electronic Warfare (EW) to all its aviation platforms, and is focused on MUM-T to answer the MAGTF's requirements for AEA. The Marine Corps has worked in conjunction with OSD to purchase the first two XQ-58 Valkyrie CCA platforms to test EW effects in partnership with F-35 and our Assault Support platforms.

AIRBORNE COMMAND AND CONTROL AIRCRAFT

The E-2D Advanced Hawkeye is the Navy's carrier-based Airborne Command and Control aircraft, equipped with an advanced airborne radar, aerial refueling capability, and network connectivity required by Naval and Joint Force commanders to provide command and control to achieve and maintain air and sea superiority, and counter adversaries Anti-Access and Area Denial strategies. The E-2D provides unique Theater Air and Missile Defense capabilities, and is a cornerstone of the Naval Integrated Fire Control system of systems linking Navy and Marine Corps fighter aircraft, Navy surface combatants, and Marine Corps ground units.

The sixth Full Rate Production Lot 7 aircraft delivered in January 2023. Modernization priorities focus on Fleet capabilities to pace the threat, including Interoperability, Crypto Modernization, Communication and Navigation Hardware; essential Command and Control; networking and sensor performance capabilities that are critical enablers to Naval Integrated Fire Control; vital upgrades and improve-

ments to enable Joint All-Domain Command & Control (JADC2) and Naval Operational Architecture [Theater Combat ID and Hawkeye Cockpit Technical Refresh]. These modernization efforts are interdependent and required to keep pace with the rapidly advancing JADC2 environment and equally rapidly advancing adversary capability.

ASSAULT SUPPORT AND LOGISTICS SUPPORT AIRCRAFT

Tiltrotor Aircraft (USMC MV-22 Osprey and Navy CMV-22B)

The V-22 tiltrotor capability has revolutionized military air transport with its unmatched combat range and airspeed. The Marine Corps MV-22 continues to support worldwide operations and provide a forward presence in INDOPACOM, CENTCOM, and EUCOM. In fiscal year 2023, the U.S. Air Force (USAF) continues nacelle improvement implementation, with an accelerated timeline for this readiness-and reliability-enhancing effort. The Marine Corps is working to coordinate and fund a tailored nacelle improvement program based on USAF efforts. This program is designed to enable a much faster fleet incorporation rate at a price the Marine Corps can afford, providing a significant reduction in required fleet maintenance hours than would have been otherwise possible.

The Navy continues to leverage MV-22 investments to recapitalize the legacy C-2 fleet with CMV-22B aircraft in support of strike group logistics. The program declared IOC in December 2021, and completed its first two deployments in support of the USS *Carl Vinson* carrier strike group (CSG) and the USS *Abraham Lincoln* CSG in 2022. The third deployment will commence in 2023.

The fiscal year 2024 budget requests \$137.6 million in RDT&E for continued V-22 development and product improvements, including a Helmet Mounted Display/Degraded Visual Environment to improve pilot situation awareness and safety in degraded visual environments. Fiscal year 2024 budget also includes \$243.2 million in APN for production line shutdown, modifications, common configuration, and nacelle improvements. With the fiscal year 2023 congressional add of five V-22s (one MV-22 and four CMV-22), the program is funded for 360 MV-22 aircraft for the Marine Corps and 48 CMV-22 aircraft for the Navy. Both programs are now fully funded to their programs of record. Fiscal year 2022 was the final year of V-22 procurement under MYP III.

CH-53K

CH-53K is an optimized vertical, heavy lift, sea-based, long-range solution for the naval force, providing agile maritime logistical connectors with greater payloads and speed than any current or emerging rotorcraft. The CH-53K will complement connectors to enable littoral maneuver and provide logistical support to a widely disaggregated naval force. The Marine Corps achieved IOC for the CH-53K in April 2022, and in December 2022 the program was approved for Full Rate Production. This closely follows completion of a thorough Initial Operational Test and Evaluation period that resulted in over 3,000 mishap free hours flown in various challenging environments and terrain. In January 2023, Marine Operational Test and Evaluation Squadron demonstrated the CH-53K performance with an external load certification lift of a 22,000 pound F-35 airframe. A contract to procure the sixth Low-Rate Initial Production Lot of nine aircraft was signed in January 2022, and the DON has been granted the authority to enter a block buy contract for the first Full Rate Production lots—Lot 7 in fiscal year 2023 and Lot 8 in fiscal year 2024. A block buy contract leverages aircraft volume quantity to realize significant cost savings, providing stability to the industrial base and improved production efficiencies while supporting the Marine Corps' plans to deploy the first CH-53K MEU detachment in fiscal year 2025.

The Fiscal Year 2024 President's Budget requests \$222.3 million in RDT&E to continue the CH-53K development, test, and standup of organic test capabilities for follow-on improvements and \$2.2 billion in APN for procurement of 15 Full Rate Production aircraft, initial spares, and modifications.

EXECUTIVE SUPPORT AIRCRAFT

The VH-92A Presidential Helicopter replaces the legacy VH-3D and VH-60N and will provide safe, reliable, and secure executive transportation. The fiscal year 2024 President's Budget requests \$35.4 million in RDT&E for VH-92A Helicopter Improvements and \$60.5 million APN for Executive Helicopter Series (VH-3D, VH-60N and VH-92A). RDT&E funding is required for continued VH-92A improvements and follow-on test and evaluation activities. These efforts include VH-92A Mission Communications System upgrades to both software and hardware, enhancements to required Wideband Beyond Line-of-Sight capabilities, test aircraft and fa-

cilities; and test and evaluation efforts for distributed network communications, high-hot aircraft performance enhancements and cockpit upgrades. APN in the amount of \$60.5 million is required for retrofit modifications to the VH-92A Mission Communications System and continued modifications to the VH-3D and VH-60N to ensure communications interoperability through the remainder of the lifecycle.

FIXED-WING AIRCRAFT

KC-130J (USMC)

The KC-130J Super Hercules remains a force multiplier, supporting humanitarian, contingency, and expeditionary operations worldwide. The KC-130J has the highest deploy-to-dwell ratio in the Marine Corps as it provides critical tactical aerial refueling and organic lift capabilities to deployed MEUs and Combatant Commanders. Incorporation of the Block 8.1 upgrade and the Department of the Navy Large Aircraft Infrared Countermeasures will increase the platform's capability, performance, and survivability. The fiscal year 2024 budget requests \$241.3 million in APN to procure two KC-130Js through a USAF contract. These aircraft will be fielded to a new Marine Corps Active Duty squadron, VMGR-153, in Hawaii in support of Indo-Pacific mobility.

Take Charge and Move Out (TACAMO)

The Navy's TACAMO mission provides survivable, reliable, and enduring airborne nuclear command, control, and communications (NC3) capabilities to the nuclear triad and is a vital link to the Navy's SSBN fleet, the most survivable leg of the triad. The TACAMO mission is currently flown on the E-6B Mercury (Boeing 707 airframe), an aging platform currently undergoing simultaneous sustainment and modernization. TACAMO mission recapitalization requires a new platform to ensure continued success of the mission in the future. The C-130J-30 (stretched Super Hercules) aircraft has been selected as the recapitalization platform and TACAMO mission systems will be developed and integrated by a third-party contractor. In fiscal year 2024, the Navy will invest \$213.7 million of RDT&E toward platform development and completion of Milestone B. Funding in fiscal year 2024 includes \$12.2 million toward spares to support the three C-130J-30 test aircraft procured in fiscal year 2023, \$76.7 million for non-recurring engineering contracts on the C-130J airframe, and \$71.2 million for very low frequency (VLF) transmit system modernization. Investments in fiscal year 2024 set the stage for successful TACAMO mission integration on the C-130J-30 supporting U.S. nuclear deterrence and *Columbia's* assured second strike for decades to come.

MARITIME PATROL AIRCRAFT

The P-8A is a heavily modified and militarized variant of Boeing's 737 commercial airframe and is DOD's only long-range full-spectrum ASW, cue-to-kill platform, with substantial armed Anti-Surface Warfare (ASuW) and networked Intelligence, Surveillance, and Reconnaissance (ISR) capabilities. The P-8A warfighting inventory requirement is 138 aircraft and is fielding in three Increments. Increments 1, 2, and Increment 3 Block 1, which consisted of ECP 4 and ECP 5, have fielded. Increment 3 Block 2, consisting of ECP 6 and ECP 7, significantly improves Navy operational plan (OPLAN) outcomes with P-8A Increment 3 modified aircraft—specifically in ASW warfighting scenarios. Block 2 includes ASW Signal Intelligence, Wideband SATCOM, Higher-Than-Secret processing, enhanced track management and sensor fusion (Minotaur), and the ASW critical warfighting capability Enhanced Multi-Static Active Coherent (MAC-E), and is scheduled to initially field in fiscal year 2026.

The fiscal year 2024 budget request includes \$168.5 million in RDT&E for integration of ECP 6 and ECP 7 to complete baseline capability fielding and P-8A rapid capability development efforts to pace emergent threats. \$347.4 million in APN is requested for fleet modification kits, deficiency corrections, safety upgrades, and the initiation of Boeing's P-8A production line shutdown activities. Boeing intends to initiate P-8A production line shutdown activities in fiscal year 2024 if no additional P-8A orders are received. Funding requested in the fiscal year 2024 budget achieves 128 of 138 warfighting inventory objective addressing current threat and strategy. As of February 2023, 117 aircraft have been delivered.

UNMANNED AIRCRAFT SYSTEMS (UAS)

Naval Aviation continues to integrate unmanned systems into the Fleet to enable a fundamental shift in the way the DON conducts naval aviation operations. Broadening unmanned aviation efforts will decrease risk to personnel, allow greater persistence, longer ranges, improved data speed and accuracy, and a faster decision

cycle. These capabilities offer the DON increased asymmetric operational opportunities and tactical advantages that provide the warfighters an edge to dominate and win in ongoing and future conflicts. The fiscal year 2024 budget prioritizes the continued development and production of Unmanned Aircraft Systems (UAS) to support current Fleet ISR requirements and future UAS integration into the CVW, ARG, and MEU.

MQ-25A Unmanned Carrier Aviation

MQ-25A will increase the strike range, capability, and lethality of the CVW through organic mission and recovery tanking, and provide an ISR capability to the CSG. As the primary CVW mission and recovery tanker, MQ-25A will increase available CVW Strike Fighter assets and preserve F/A-18E/F Fatigue Life Expenditure. MQ-25 is integral to the Air Wing of the Future and establishes the foundation for MUM-T and autonomous operations from the CVN. The fiscal year 2024 budget continues investment in MQ-25 and the Unmanned Carrier Aviation Mission Control System (UMCS) development, begins testing of Navy MQ-25A and procures three MQ-25A air vehicles to increase fleet inventory. MQ-25A will IOC in late 2026. The fiscal year 2024 budget request supports procurement for the MQ-25 Stingray with \$596.3 million in APN and continues RDTE funding with \$220.4 million.

MQ-4C Triton

The MQ-4C Triton is a persistent force multiplier that delivers situational awareness of the battle space to shorten the sensor-to-shooter decision loop in the maritime domain. MQ-4C Triton's persistence and sensor mix is integral to Navy's Maritime Strategy to deliver a more lethal and effective global Joint Force.

VUP-19 completed an Early Operational Capability (EOC) deployment with two aircraft in an IFC-3 configuration to INDOPACOM and executed 2419.9 hours from January 2020 0–October 2022.

The program has delivered the first two fleet MQ-4C Triton Multi-Intelligence (Multi-INT) Integrated Functional Capability Four (IFC-4) Increment 1 configuration Unmanned Aircraft (UA) on-schedule supporting Unit Level Training (ULT) and Operational Test (OT) ahead of IOC in August 2023.

The fiscal year 2024 budget requests \$416.0 million in APN to continue procurement of two MQ-4C Triton UA and associated support elements, and \$12.1 million in RDTE, with an additional \$300.4 million for MQ-4 modernization RDTE for Increment 2 capability development.

MQ-9A Extended Range (ER)

The Marine Corps MQ-9A ER is a critical enabler for the Naval and Joint Force providing an extended range, long-endurance multi-mission ISR capability through a suite of sensors designed to detect surface and air threats. The MQ-9A ER is a linchpin in providing Maritime Domain Awareness (MDA), as well as providing resilient and persistent information flow, enabling command and control of EABO and DMO forces against near or peer threats.

The Indo-Pacific has unique challenges requiring the Stand-in Force to be able to operate over significant distances between ground units. An MQ-9A ER overhead equipped with an Airborne Network Extension (ANE) payload facilitates connectivity for Stand-in Forces operating at the forward edge of the battlespace. MQ-9A ER will also provide an Electronic Warfare and Airborne Early Warning capability to enhance the situational awareness of decisionmakers, and provide input to the joint common operational picture. With the addition of a Smart Sensor autonomous capability, the MQ-9A ER will be enhanced through automatic cueing and fusing of tracks to other onboard sensors. The Marine Corps is set to have 20x MQ-9A Block 5 air vehicles, 14 x Ground Control Stations (GCS), and payloads to conduct assigned missions.

Existing U.S. Air Force and Air National Guard efforts are being leveraged to reduce cost as the Marine Corps matures this nascent Service-level capability, reducing risk.

WEAPONS PROGRAMS

Munitions Inventory and Industrial Base

The President's Fiscal Year 2024 Budget Requests \$6.9 billion for the Weapons Procurement account. This level of funding represents a significant increase over fiscal year 2023, allowing for continued modernization of our weapons inventory with critical capabilities to enhance warfighter readiness, as well as significant investment in production capacity to increase critical munitions inventories.

Ongoing United States support to Ukraine has highlighted the need for investments in key areas across the industrial base to support United States, ally, and partner nation readiness. The DON is working closely with industry to expedite replenishment of stocks provided to Ukraine, engaging with industry partners to understand the barriers to accelerating production and determining how and where the Department can make strategic investments to improve inventory, capability, and capacity. The Department is investing in the industrial base to expand and accelerate production throughput, streamline testing, and strengthen critical component supply chains. Simultaneously, the Department is placing investments in recertification as a cost-effective way to improve near-term inventories. Coupled with the ongoing replenishment of DON stocks, these investments into the munitions industrial base send the demand signal that building munitions inventories is a top priority.

The Department is leveraging the authorities granted in the fiscal year 2023 National Defense Authorization Act to pursue MYP contracts for critical munitions programs such as Standard Missile-6 (SM-6), and Naval Strike Missile (NSM). MYP contracts for Advanced Medium-Range Air-to-Air Missile (AMRAAM) and LRASM will be joint efforts with the USAF. The strategy allows the Department to use savings generated through EOQ financing to procure additional lots of missiles under a Buy-to-Budget concept, to further improve efficiencies and yields.

Missile Programs

As the Navy carefully manages the approach to end of life of *Ohio*-class SSBNs, addressing the viability of the Strategic Weapons System (SWS) throughout the life of the *Columbia*-class SSBNs remains a priority. The current TRIDENT D5 Life Extension (D5LE) remains an effective and credible Strategic Weapon System on both the *Ohio*-class and *Columbia*-class SSBNs into the 2040's, supporting the *Ohio*-class submarine through end of service life and serving as the initial Strategic Weapon System for the *Columbia*-class SSBNs. Modernization of the SWS, D5LE2, is required to maintain the Sea Based Strategic Deterrent starting with the ninth *Columbia*-class submarine by ensuring sufficient missile inventory and seamlessly supporting USSTRATCOM requirements. D5LE2 incorporates the necessary flexibility and adaptability needed to maintain demonstrated performance and survivability in the dynamic threat environment until *Columbia*-class end of life. The Administration's Nuclear Posture Review (NPR) states that D5LE2 needs to begin deploying on *Columbia*-class in the late 2030's to sustain sufficient missile inventories to support the U.S. sea-based strategic deterrent as well as the United Kingdom's independent nuclear deterrent. The Navy will prioritize near-term investments in accordance with the NPR to ensure that D5LE2 is effective in the expected threat environment and delivers on time. Fiscal year 2024 funding will support industrial base development, flight subsystem engineering, and flight component suppliers that are critical to the execution of D5LE2.

Tomahawk

The Navy is continuing investment into Tomahawk Block V new production, Maritime Strike Tomahawk, and recertification/modernization of Tomahawk Block IV. The fiscal year 2024 budget request adds \$23.4 million to reduce Tomahawk production lead time. These funds are being invested to increase industrial capacity, specifically by relieving chokepoints within the Tomahawk production line.

In the fiscal year 2024 budget request, the Department sustains the Tomahawk as the Nation's premier all-weather, long-range, survivable deep strike offensive weapon to include new production of and recertification of current inventory into modernized BLK V Tomahawk missiles. BLK V(a) Maritime Strike Tomahawk (MST) provides a long-range moving maritime strike capability to meet current and future threats, supporting the Surface Warfare Mission area through the inclusion of a seeker suite in the Tomahawk BLK V missile. The fiscal year 2024 budget request for MST provides continuation of Test and Evaluation (T&E) plans that include missile functional ground testing and missile test flights from a ground launcher apparatus to assess seeker performance, mature and refine seeker algorithms, and provide verification and validation data for Modeling and Simulation. MST IOC is planned for fiscal year 2025. The fiscal year 2024 budget request continues engineering, manufacturing, and development of the Joint Multiple-Effects Warhead System (JMEWS), which will deliver a hardened target penetration capability with the Tomahawk BLK V(b) missile in fiscal year 2027. The fiscal year 2024 budget request continues engineering, manufacturing, and development of the Military Code Global Positioning System (GPS) receiver, which will deliver significant increased resiliency in spoofing and jamming threat environments to the Tomahawk BLK V missile in fiscal year 2026.

Offensive Anti-Surface Warfare (OASuW) Increment 1 / Long Range Anti-Ship Missile (LRASM), LRASM C-1/C-3, and OASuW Increment 2 / HALO

The Fiscal Year 2024 President's Budget requests \$639.6 million to initiate LRASM MYP with the USAF. The fiscal year 2024 procurement funding covers the EOQ materials along with the buy of 91 DON LRASM weapon systems in the initial year of the 5-year MYP. The Fiscal Year 2024 President's Budget request also includes RDT&E funding for the completion of the LRASM 1.1 capability improvements.

The LRASM C-1 and C-3 variants add near-term, cost-effective capacity to the DON's long range strike capability while enhancing the OASuW mission. The fiscal year 2024 budget requests funding for Navy strike mission integration and employment by upgrading the existing AGM-158 product to respond to rapidly changing threats. Navy AGM-158 development efforts also involve development and integration of a Beyond Line-of-Sight radio subsystem to enable dual mission capability and enhanced operational flexibility, optimizing carrier magazine capacity to complement OASuW warfighting capability. The fiscal year 2024 President's Budget requests \$141.9 million to continue developing AGM-158 derived capability and radio integration on F/A-18; develop software for strike mission planning, Universal Armament Interface and missile Operational Flight Plan. The fiscal year 2024 President's Budget request also includes \$83.7 million for procurement of the initial 10 LRASM in the C-3 configuration.

The Fiscal Year 2024 President's Budget includes \$95.8 million in support of OASuW Increment 2, which is now referred as Hypersonic Air Launched OASuW (HALO). HALO supports the national imperative to mature hypersonic capabilities and will provide the Navy a necessary air-launched, carrier-based weapon to address evolving long range, high speed threats from near peer competitors. In order to deliver this capability to the warfighter when needed, the DON will collaborate heavily with the Air Force.

Advanced Anti-Radiation Guided Missile (AARGM) & AARGM Extended-Range (AARGM-ER)

AARGM domestic procurement completed in fiscal year 2021 with the award of the last DON Full Rate Production (FRP) contract. There have been 1450 AARGMs (All Up Rounds, Training Missiles, and Spares) delivered to the Fleet as of March 2023. Program of record delivery is 1803 missiles. Deliveries continue through fiscal year 2024 in support of the transition to AARGM-ER. AARGM-ER provides the DON with a 5th generation compatible extended-range asset to project power and provide Suppression of Enemy Air Defenses, both at-sea and on land. The first AARGM-ER delivery is scheduled for 4QFY23. The budget requests \$195.7 million in Weapons Procurement, Navy (WPN) to procure 77 AARGM-ER all-up-rounds and six Captive Air Training Missiles. The fiscal year 2024 President's Budget requests \$51.8 million in RDT&E to support operational and Integration testing of production representative hardware.

Hypersonic Program

The DON is developing a hypersonic weapon system that will enable precise and timely strike capability against deep inland targets in contested environments. In collaboration with the Army, the Department is leveraging a common All Up Rounds missile design and test opportunities to field a conventional hypersonic weapon system. *Zumwalt*-class DDGs will be the first Navy platform to field this hypersonic capability in the mid-2020's, followed by Block V *Virginia*-class SSNs starting in the early 2030's. In March 2020, the Services executed a successful flight test of the Common Hypersonic Glide Body, and in June 2022, the Services followed up that testing with several static-fire tests and a flight test of the newly developed two-stage Solid Rocket Motor. The DON has validated the design of the Navy's cold-gas launch approach and continued sounding rocket testing in support of future capability, manufacturability, and affordability improvements. This rapid development and demonstration of hypersonic strike weapon systems supports the U.S. ability to deter, and if necessary, defeat potential adversaries.

The Department's fiscal year 2024 budget request funds continued build of the first three All Up Rounds to be delivered to the first *Zumwalt*-class DDG and All Up Rounds for future flight testing, supports construction of the Underwater Launch Test Facility, and executes two flight tests, including the first launch of the CPS All Up Round using the cold-gas launch approach for sea-based fielding. The request totals \$901 million in CPS R&D funding. Additionally, the request includes \$341 million in funding to procure additional rounds in support of *Zumwalt*-class fielding.

The Marine Corps is working toward the capability to employ smaller, highly mobile hypersonic weapons through science and technology initiatives. The Marine Corps is pursuing an acquisition strategy that leverages the developmental work of other Services and agencies, investing when the capability has reached a higher technology readiness level that allows for expedited prototype experimentation at reduced costs.

Torpedoes

The Department continues to invest heavily in increasing the capacity and capability of both the Heavyweight and Lightweight Torpedo inventories to maintain our advantage in the undersea domain against our strategic competitors. The MK 48 Heavyweight Torpedo is the Navy's primary submarine-launched ASW and ASuW weapon. While the Navy has continued to upgrade its existing inventory to incorporate the latest technology and capability, the Navy restarted production of the MK 48 to meet munitions requirements and during the summer of 2022 accepted the first new production heavyweight torpedoes in over 20 years. In addition, the Department is progressing development of new capabilities with the MK 48 MOD 8 and MK 48 MOD 9 to maintain our advantage over the threat today and in the future. The MK 54 Lightweight Torpedo, which is employed by both surface ships and air platforms, continues to be produced and upgraded to keep pace with the ASW threat. At current production demand, the torpedo industrial base remains healthy, producing the MK 54 MOD 0 for the Nation's allied partners in addition to the upgraded MK 54 MOD 1 for the U.S. Navy.

The Department has also partnered with industry and University Affiliated Research Centers to rapidly develop and field new and advanced capabilities to further our advantage in the undersea domain. This includes the MK 54 MOD 2, which will improve performance against the high-end threat, as well as a Very Light Weight Torpedo that will deliver multi-mission capability as both a hard-kill torpedo countermeasure and a short range ASW weapon. The Navy is also expanding the methods in which the MK 54 is employed to provide greater flexibility, effectiveness, and lethality. From high altitude via the P-8A and the High Altitude ASW Weapon Capability (HAAWC) wing kit, to the Hammerhead encapsulated effector and future stand-off ASW capabilities, MK 54 payloads will continue to be essential to the US Navy's and its Allies' ASW mission.

MARINE CORPS GROUND PROGRAMS

Fiscal year 2024 Marine Corps investments are prioritized to enhance combined and Joint Force lethality. Marine Corps modernization has involved replacing legacy approaches with threat-based operating concepts, new command arrangements, emerging technology and modernized programs. These new concepts and technologically advanced capabilities enable our Stand-in Forces to gain sharpened situational awareness, set conditions in case of crisis or conflict, and contribute to Joint All Domain Command and Control (JADC2). With a clear understanding of the NDS and the current operating environment, the Marine Corps' budget provides a modern force that can sense, make sense, and close the kill webs in support of the Naval and Joint Campaigns.

Ground/Air Task-Oriented Radar (G/ATOR)

The Ground/Air Task Oriented Radar (G/ATOR) is a multi-role, ground-based, expeditionary three-dimensional radar system employed by both the Aviation Combat Element and Ground Combat Element within the MAGTF, satisfying the Marine Air Command and Control System and Ground Counter Fire/Counter Battery capability requirements. Deployable via KC-130J, the G/ATOR provides mobile, multifunctional, three-dimensional surveillance of airborne targets, detection of cruise missiles, Unmanned Aircraft Systems, Rockets, Artillery, and Mortars. Once those threats have been tracked, the G/ATOR will then cue the appropriate air defense weapons. Providing persistent surveillance and detection of enemy air threats in the littorals and participating in a cooperative engagement network of sensors and shooters via the Common Aviation Command and Control System (CAC2S), the G/ATOR contributes to both Naval and Joint Force domain awareness.

Serving as the forward component of the Joint Force, the Marine Corps continues to invest in and enhance the sensor capabilities of the G/ATOR. Fiscal year 2023 appropriations funded \$304 million to procure eight additional radars, bringing the total number to 53 of 57 planned. Additionally, the fiscal year 2024 budget requests \$25.3 million for critical G/ATOR maintenance and software upgrades. This program was on full display in Spring 2022, when a Marine Corps G/ATOR deployed to Lithuania to support NATO's air policing mission for the first time. Building upon the radar's successes, G/ATOR seeks to further integrate with the Medium Range Inter-

cept Capability (MRIC), providing protection to defended assets against airborne and cruise missile threats. Ultimately, as a modern and highly capable program, G/ATOR expands the Service’s integration into Navy and Joint integrated air and missile defense missions.

Common Aviation Command and Control System (CAC2S)

Common Aviation Command and Control System (CAC2S) connects and collates sensor inputs to facilitate MAGTF employment and targeting decisions. CAC2S fuses real-, near-, and non-real time data to provide a common operational picture across the Marine Air Command and Control System—this picture allows leaders to then task the air defense “arms” of the MAGTF, the Marine Air Defense Integrated System and the Medium Range Intercept Capability, to punch back and destroy threats as necessary. CAC2S fused information enables enhanced air control, improved situational awareness, sensor integration, full tactical data link integration, improved planning, and command functionality, as well as sensor-netting integration. CAC2S also provides integrated airspace command and control for the MAGTF and integrates real time sensor data into the Navy’s Cooperative Engagement Capability network. As the primary C2 system that integrates MAGTF aviation operations with Joint, combined, and coalition aviation agencies, the Marine Corps intends to continue to procurement of these small form factor variants until fiscal year 2029. The small form factor (CAC2S SFF) aspect of CAC2S reduces the footprint of the system to transit cases that can be utilized from the front seat of a dune buggy. The fiscal year 2024 budget requests approximately \$55.8 million to produce 32 CAC2S SFF that can be flown and resupplied via assault support aircraft to dispersed locations and will provide both the Joint force and the Marine Corps with a complete, common air command and control operational picture.

Marine Air Defense Integrated System (MADIS)

Marine Air Defense Integrated System (MADIS) is designed to counter the expected swarms of enemy drones and aircraft that will assault Marines on modern battlefields. MADIS provides an expeditionary, upgradable, state-of-the-art capability, developed to protect maneuver forces, installations, and other designated critical assets from Fixed and Rotary Wing aircraft along with Group 1–3 Unmanned Aircraft Systems (UAS). MADIS will also utilize sensors to provide Beyond-Line-of-Sight cueing and targeting. Organically transportable via KC–130J aircraft, MADIS incorporates a pair of Joint Light Tactical Vehicles that are designed to defeat airborne threats with a turret mounted 30mm cannon, Stinger missiles, and an electronic warfare jammer. MADIS will also employ CAC2S and its own organic radar sensors to collect, interpret, and pass radar tracks for target engagements. Funded to 113 of 131 systems, MADIS will begin fielding in late fiscal year 2024.

While MADIS represents the Marine Corps’ larger air defense program of record, the Light-MADIS (L-MADIS) provides similar capabilities to Marine Expeditionary Units (MEU), but with a smaller form factor on a pair of ultra-light tactical vehicles. Utilizing sensors to provide cueing and targeting, the L-MADIS employs electronic warfare jammers to defeat airborne threats. This system is actively employed by the Fleet Marine Force and during a Straits of Hormuz transit aboard the USS *Boxer*, the 11th MEU employed the L-MADIS in support of the defense of the amphibious task force. Utilizing electronic jamming, the L-MADIS successfully defeated an Iranian drone flying within 1km of the ship. L-MADIS is fully funded to 21 systems; 12 urgent-need variants are fielded to the Fleet at the present time. Whether MADIS or L-MADIS, the Marine Corps continues to pursue these critical force protection capabilities to defeat aerial threats.

Medium Range Intercept Capability (MRIC)

The Medium Range Intercept Capability (MRIC) defends the MAGTF against inbound cruise missiles and other precision munitions. Fully deployable via KC–130J aircraft, MRIC defends forward-deployed forces primarily against cruise missile threats, and secondarily against UAS and other aerial threats that enter the MRIC’s Weapons Engagement Zone. This capability is accomplished through the integration of fielded Marine Corps and Israeli systems that include the CAC2S, G/ATOR, the Iron Dome Battle Management Controller, and the Tamir missile and guidance uplink. Force Design plans to provide a cruise missile defense capability to each Marine Expeditionary Force (MEF) with a battery comprised of a headquarters element and four independently deployable firing platoons able to protect four defended assets. The fiscal year 2024 budget requests approximately \$43.9 million to fund the prototype platoon and build out three batteries, one for each MEF, that will allow Marines to survive within the adversary’s Weapons Engagement Zone

Unmanned Aircraft System Payloads

The Marine Corps currently operates two MQ-9A Extended Range (ER) and is scheduled to receive four additional aircraft by Q3 FY24. The MQ-9A ER serves as the platform solution for the MAGTF Unmanned Aircraft System Expeditionary Medium Altitude Long Endurance (MUX/MALE), hosting a suite of interoperable and complementary payloads that provides a persistent, networked, multi-domain reconnaissance, surveillance, and target acquisition capability to the Marine Corps, Naval and Joint Force. It enhances battlespace awareness by fusing information from onboard sensors and mission systems; detecting, identifying, and tracking targets in multiple domains; and disseminating information in advance of distributed friendly elements. Moreover, sensors are augmented by robust communications and data relay capabilities, enabling distributed platforms and systems to receive mission-critical sensor information in real-time via multiple networks, enhancing the lethality and survivability of force echelons at the tactical edge.

Onboard systems provide airborne early warning (AEW), maritime domain awareness (MDA), electromagnetic support (ES), and communications bridging. AEW and MDA is delivered through autonomous scanning, detection, identification, sorting, and tracking of targets. Operationally relevant, full-spectrum electronic warfare capabilities enable persistent stand-off ES. Supporting these capabilities, the MUX/MALE's Airborne Network Extension capability provides additional communications pathways for forces across the battlespace and allows for the transmission of intelligence, surveillance, reconnaissance, and targeting data via multiple, redundant networks and information systems. As UAS sensor payloads mature, the Marine Corps, through the MUX/MALE capability, will continue to enhance situational awareness and sensor overwatch with the goal of reducing ambiguity in the operational area around Naval and Joint Forces while mitigating human exposure to threats.

Networking On The Move (NOTM)

Networking-On-The-Move (NOTM) provides the MAGTF with a robust, over-the-horizon and beyond line-of-sight (BLOS), digital command and control (C2) capability while on-the-move and at-the-halt. NOTM is a critical enabler for C2 in a degraded environment. It enables a continuous and reliable flow of information inside contested environments, and provides the communications gateway needed to conduct sea control and sea denial operations as part of the Naval Expeditionary and Joint Force. This is achieved by providing an open architecture solution that enables forces to exercise C2 across operational domains—land, sea, air, space, and while transitioning between domains. The NOTM program encompasses three subordinate components, the NOTM Ground Combat Vehicle, incorporated onto the Ultra-Light and Joint Light Tactical Vehicles, as well as the Amphibious Combat Vehicle, the NOTM Airborne, incorporated on MV-22Bs and KC-130Js, and NOTM Tactical Entry Point kits, integrated with amphibious warfare ships to provide BLOS services to Marine forces ashore and afloat. The Marine Corps continues to procure and field these systems to distributed Fleet Marine Force units, enabling command and control, now and in the future.

Secure Expeditionary Resilient Positioning, Navigation, and Timing

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.

Satellite Communications (SATCOM)

Marine Corps Wide Band Satellite Communications FoS provides the MAGTF with resilient and diverse spectrum capabilities, enhances command and control of the distributed maritime force, and enables dissemination of intelligence and sensor-to-shooter communications. The Marine Wideband System (MCWS) FoS is modernizing our aging and very small aperture terminals. MCWS increases the MAGTF's orbital and spectrum options and the Satellite Communication Agile Reachback (SCAR) provides the MAGTF with options to incorporate low earth orbit capabilities at time of need.

Geospatial Intelligence (GEOINT)

Geospatial Intelligence (GEOINT) and Satellite Communications (SATCOM)/Re-Broadcast is the primary means for tactical units to rapidly receive and transmit Intelligence, Surveillance, and Reconnaissance (ISR) data from national and theater assets. The SATCOM solution consists of the AN-PRS-11A system which provides the high bandwidth required to ingest large GEOINT datasets from globally streamed national, theater, and tactical sensors and data repositories. The Re-Broadcast transmits ISR data from local sensor collection over a Defense Information Systems Agency (DISA) enabled global broadcast network for near-real-time data access to decisionmaking and targeting solutions. Both capabilities are compatible with existing Marine Corps ISR and Operations systems and enable organic sensing capabilities, supporting Long-Range Precision Fires as part of the Naval Expeditionary Force and Joint Force, writ-large. The Marine Corps intends to increase fielding of the AN/PRS-11A and Re-Broadcast suites to 37 systems for Fleet Marine Forces to support of Combatant Commander's requirements.

Senator Kaine. Wonderful. We will start a 5-minute round of questions, and I will hop around a bit and probably stay here for a second round too if anyone would like that.

First, talk a little bit about the Puget Sound challenge with seismic activity and how the Navy is viewing that and what will the effect of that be, shuttering those drydocks for a period of time.

Mr. Stefany. Yes, I will start. We updated our analysis based on computer models that are now available that were not available decades ago, looking at seismic, and we determined there were three docks at Puget Sound and one at Bangor, the Trident refit facility, that needed some upgrades. So we are doing temporary modifications to all of those. We expect at least three of those four docks, if not all four of those docks, to be back online in the coming months, by no later than June/July timeframe. And while we had to delay one availability going into one of those docks, overall we do not see any long-term mission impact on our ability to keep our submarine force sustained.

There will be longer-term improvements to those docks that will be incorporated into the SIOP [Shipyards Infrastructure Optimization Program] program overall, but for the near term, another 3- or 4-month impact and we should be back in good shape, sir.

Senator Kaine. Thank you.

Mr. Stefany. Admiral if you want to hop in there too?

Senator Kaine. Oh, please.

Vice Admiral Conn. Sure. The only thing I would add is on CNO's UPL [Unfunded Priorities List] is a \$300 million request for those drydocks, if not to pay for the drydocks, because we want to complete and we cannot wait. We are cash-flowing that, but it is the backfill of the resources that we were given.

From an operational perspective, right now there is no operational impact other than having to move one submarine maintenance period, which is recoverable.

Senator Kaine. Another item that was in the news last week was the announcement that the USS *Kennedy* aircraft carrier would be delivered in fiscal year 2025 rather than fiscal year 2024, which made some news, as I have talked to the shipyard and the Secretary of the Navy, and I just want to make sure that I am understanding this correctly. It is actually not really a delay in the availability of that ship to deploy. There was an earlier delivery date but then they were going to do a lot of post-delivery work on the ship before it was eligible to deploy. So sliding the delivery date to

fiscal year 2025 just lines the delivery up with what was the expected time for the availability and deployment of the ship.

Do I understand that correctly, Secretary?

Mr. STEFANY. Yes, sir. So the end date that is critical to us is the ability of that ship to be ready to deploy, and that date is not changing. As you mentioned, we have a construction period. Typically a ship will go off and do some workups and then it will go into what is called a post-shakedown availability period, and in this case it was set up to be a very long period. The *Ford* was a year and a half. For *Kennedy* it was looking at about a year-long period.

What we were able to do by extending the work at the shipyard during construction is shorten that availability later on to just fix anything we find in the workup period, shorten it down, so that the time the ship deploys is the same time in the end.

Senator KAINE. Mr. Secretary, let me ask one more question and then I will call on the ranking as I go over to the floor, to handle this next amendment. Last year during the posture hearing, where we had the SECNAV, the Commandant, and the CNO, a lot of us asked a lot of questions about the amphibs and about whether the Navy and Marines were on the same page. We were told, "We are definitely on the same page and you are going to get a study soon that will show we are on the same page." We got the study in December, so it was not exactly soon, and I noted it was very brief. But it was almost a page, on the same page. It was a few pages. But it did show that everybody was on the same page with respect to a requirement that has been testified to publicly often, that we should have 31 amphibs.

I think a number of us were surprised when we saw the President's Budget this year that there was not funding to enable us to get there. In fact, the funding, at least in the current year, or the proposal, would have us dropping the number of amphibs rather than advancing to the 31. We understand there is an additional desire for a strategic pause to study yet again what the amphib requirement was.

Just speaking for this Committee Member, everybody made such a good case last year that we are on the same page and the number is 31 that I kind of wonder about, well, what is the continuous review of whether 31 is the right number. Can you explain that to the Subcommittee?

Mr. STEFANY. Yes, Mr. Chairman. So first of all, we are all in agreement, the Secretary, the Commandant, and the CNO that 31 is the requirement. The question is how do we best get to that requirement, and what I will do is try to address the new construction side and I will let Admiral Conn here talk about the in-service ships, because there are two parts. We have to build enough new ones and we have to have enough existing ones in the inventory to get to that 31.

Senator KAINE. Just be mindful I am now over time, so try to do both of those things promptly.

Mr. STEFANY. Okay. So quickly, two parts of the amphibious: 10 large-deck amphibs and 21 of the LPDs [landing platform dock/amphibious transport dock]. In this budget, one priority was to move the LHA [landing, helicopter, assault], the large-deck amphib, from

2031 to 2027, so that it would be at that 4-year center. So on the large-deck amphib this budget improves by 4 years the ability to build those on center. So that piece that is the 10 large-decks, I think we got in a good place.

The 21 LPDs we bought one with your help in 2023, and the next one is in 2025, sir, if you put them on 2-year centers. So there is a period where we can look at a more affordable way, potentially, to build those. We do not need to build one in 2024. We can take some time to see if there is a more affordable way to build those before we buy the 2025 ships, sir.

Senator KAINE. Admiral Conn, do you want to add anything to that?

Vice Admiral CONN. I will try to be as quick as I can, so yes. The pressure that is being put on is decision on some of our older LSDs [dock landing ship/landing ship dock]. The original service life of an LSD was 35 years. Back in the 1990's we changed it to 40 years, and that was based on two assumptions: normal operations at the time defined as 6-month deployments, and that we would fully fund the maintenance of those ships. The War on Terror, we operated those ships much longer than 6-month deployments, and we know—we know—we did not put the resources in those ships to be able to sustain them.

Senator KAINE. Okay.

Vice Admiral CONN. So now we are at a position where we have some hard choices to make. The three LSDs that are listed, we do not have the confidence, because we are seeing growth work and new work, that those ships will get out of the maintenance phase, be able to get through a workup cycle through the basic phase, the advanced phase, integrated phase, which is a year long, and then go on deployment, and stay inside its expected service lives.

Senator KAINE. I need to cut you off now and turn it to Senator Cramer. Senator King, I will ask you to manage the air traffic control of this Committee until I return once the second vote starts. Thank you.

Senator CRAMER. Thank you, Chairman Kaine. Thank you, Senator King, for stepping in. This discussion we are having right now is a good one so I appreciate that. In fact, what I might do is just sort of tag onto that a little bit. Mr. Stefany, I will start with you, and maybe talk a little bit about the risk of not having the 31. In other words, on the phone we discussed the illustration of the Turkey disaster and not having availability either to respond to that tragedy or to demonstrate power should we need it.

Maybe just expand a little bit on whether you think 31, 32, why 31 is important, besides it being required.

Mr. STEFANY. Yes, I think actually, sir, if you do not mind I would like General Heckl to take that one.

Senator CRAMER. That would be great.

Mr. STEFANY. He is closer to the warfighter.

Senator CRAMER. He sure is.

Lieutenant General HECKL. Sir, great question and thanks for the time today. So 31 is the requirement, sir, the absolutely floor, and what 31 assures is that we would have a 2.0 MEU [Marine Expeditionary Unit] forward presence, with the ability to surge to 5 in time of crisis, right. We are beyond classification here but there

is a reason for that being able to surge to 5. It is key maritime terrain and it is SLOCs [Sea Lines of Control], et cetera.

My first 2 decades of Active Service we had a 3.0 presence. There was constantly a MEU forward deployed. In my case it was mostly in the Mediterranean, which, oddly enough, would have involved Ukraine. As Admiral Conn said, the War on Terror, we started riding assets a little bit hard and not properly maintaining them, so we started having problems, so we have larger gaps. So when the earthquake happened in Turkey, a NATO [North Atlantic Treaty Organization] ally, the MEU was not on station, and it should have been. That is what a MEU, a Marine Expeditionary Unit, is organized, trained, and equipped for. We can use surface-to-surface connectors, you know, the LCACs [Landing Craft Air Cushions], the LCUs [Landing Craft Utility], to deliver heavy equipment that could have assisted with search and rescue, and we would have come ashore with shelters that would have provided heat and supplies, and the ships would roll to hospitals. So that is the short answer.

Senator CRAMER. I think it is a great answer. I think it is a good illustration of the importance of it.

Maybe, Admiral Conn, I will come over to you now and talk more generally about ship maintenance. If we accept that the procurement of new ships will not be ready until the end of this decade, maintaining the existing fleet for the next 5 years, these critical 5 years I referenced earlier, becomes maybe one way to make sure we are okay.

I am going to ask two questions sort of as one, so you can sort of opine more generally perhaps. Are the surface and undersea fleet readiness rates where you think they should be, first of all? Then second of all, is the Navy deferring ship maintenance to keep ships in operation?

Vice Admiral CONN. Are we where we want to be? No. Do we know what we need to do? Yes. For the undersea domain there is over \$2 billion dedicated as part of this President's Budget 2024, dedicated to improving the maintenance of our submarine assets, decreasing the idle time for the ships that we already own. It is our most asymmetric advantage that we have in the undersea domain, but they have no advantage if they are tied to the pier, and same thing, just to be clear, on the LSDs. If we cannot get them away from the pier in the time that we have—and really, this is about opportunities. For the cruisers and the LSDs, to buy them back would be about \$3 billion. Is that the right thing to do with those \$3 billion? We believe, and from a best military advice perspective, based on our assessment, hull-by-hull of those ships, the answer is no.

Then there is also the opportunity to perhaps free up some of those yard piers where we could do other work, and for the sailors that are on those ships to be able to go at sea and start buying down some of the significant gaps at sea that we have.

So those are the opportunities and those are some of the tough choices. It was a tough choice for us and I realize it is a tough choice for you.

Senator CRAMER. Yes. No, well put.

Mr. Stefany, my understanding is that while the Navy has made some progress on the maintenance backlog we still have, obviously, a long way to go, I think. There is a significant amount remaining.

Can you tell me, what does it mean when it says 100 percent of ship depot maintenance requirements to be funded in this budget? What does that practically mean, 100 percent, because it does seem a little bit conflicting?

Mr. STEFANY. Yes, so I think that is focused at our public shipyards and the planned availabilities, the number of submarines that are going to go into those yards and the amount of work that is planned in all those availabilities is funded. It does not fund unplanned work, but all the planned work in those availabilities, sir.

Senator CRAMER. Well, I am just following up real quickly on it because on the phone we talked about the workforce challenge, and the public shipyards are claiming they need 5,000 to 10,000 more added to their workforce. Could that throughput even be done if we do not get that workforce up? I do not want to oversimplify getting that job done, but I just want to understand it.

Vice Admiral CONN. You know, we typically talk in terms of money, as the input metric, but in terms of President's Budget 2024, it funds 75 avails, 32 of which are private avails—15 east, 17 west, and it continues the OPN [Other Procurement, Navy] pilot for the fleets. It is \$2.7 billion but it is for 28 ships and 1 submarine. That is all part of this plan. So I think that is part of funding that maintenance requirement.

Mr. STEFANY. To your point, sir, we have a national workforce availability issue. So even if we had more billets and more funding at the public yards, our ability to hire might be constrained in getting to that higher number, sir.

Senator CRAMER. I appreciate it. Thank you.

Senator KING. [Presiding.] On behalf of the Chairman, Senator Hirono.

Senator HIRONO. Thank you, Mr. Chairman. It is nice to see you all again.

Getting back to the amphibious ships, the LPDs, did you say, Mr. Secretary, that you are conducting yet another study regarding? Who is going to respond to that? Why do we need another study? There have been 11 previous studies on amphib ships. Admiral.

Vice Admiral CONN. The Office of the Secretary of Defense (OSD) directed, as part of a cost capability study for the LPDs. We will have that study, we will complete that study, and that will inform the President's Budget 2025 shipbuilding plan. I think, as Mr. Stefany has stated, and I think the Commandant mentioned this morning, maintaining 2-year centers with a ship that was provided by Congress in 2023, the next opportunity for an LPD would be in 2025.

Senator HIRONO. What is yet another study going to show that the 11 other studies have not?

Vice Admiral CONN. That is a fair question.

Senator HIRONO. Mm-hmm. What is the answer?

Mr. STEFANY. The previous studies you are talking about were looking at requirements, right. I think we are all locked on requirements.

Senator HIRONO. Thirty-one.

Mr. STEFANY. What this study is looking at is, now that we know the requirements—

Senator HIRONO. It took 11 studies to get us to 31.

Mr. STEFANY. Yes, ma'am. This is now—I know I have to build that ship. Now what is the most affordable way to build it? That is what this one is looking at. It not looking at the requirements. It is looking at, an LPD costs \$1.9 billion. Is there a way to build it for a little bit less and still meet the requirements of the Marine Corps? That is what we have been asked to study as part of this. It is not a requirement study. It is a cost study, if you will, ma'am.

Senator HIRONO. This study is going to be pretty much it, right? I am sure General Berger would be very happy to come up with something pretty definitive so we can get on with it. Did you want to add something?

Lieutenant General HECKL. Well, ma'am, so we have already had a brief discussion about this, where this PDM-1 [Program Decision Memorandum-1] study has been directed, and the trade space will be my requirements, and I am the requirements officer of the Marine Corps. I am not coming off the requirement any further. We have already descoped LPD flight 1. Flight 2 has been descoped. It cannot be descoped anymore.

Senator HIRONO. Okay. So when is the study going to be finished, the cost study?

Mr. STEFANY. The tasking for the study is to be finished this summer in time to inform the 2025 budget, which again is the next opportunity, industrial base-wise, to build the next LPD, ma'am.

Senator HIRONO. Okay. Mr. Secretary, you are responsible for sustainment matters to include maintenance. Last year at this hearing we discussed the challenges the Navy has had getting their ships and submarines out of maintenance on time. It is still an issue. So the concern is clear this year those challenges remain.

Last year I worked to get \$40 million for the planning of a waterfront production facility at Pearl Harbor Naval Shipyard to address this very problem, and you mentioned the drydock that we need to build there. But the waterfront production facility should be very much, I think, included in the drydock coming online.

So these types of investments in our public infrastructure are necessary to make sure our shipyard workers have the tools they need to get our Nation's ships and submarines out of maintenance on time.

You have visited Pearl Harbor Naval Shipyard, have you not?

Mr. STEFANY. Yes, ma'am. I was there last summer.

Senator HIRONO. So you know where the drydock is going. You do not want the workers to have to run all the way across the shipyard in order to get the tools they need to utilize the drydock. That is why I have been pushing for the waterfront facility so heavily.

What role has years of failing to invest in aging infrastructure played in the Navy's sustainment challenges, and what are we doing about it?

Mr. STEFANY. So shipyard specific, ma'am, which I know you know, we appreciate the additional funding last year to start the design of that facility, and we will continue through the design process and ideally get the waterfront facility as close to the dry-

dock timing-wise as possible. As you know, we cannot get them there at the same time.

On the broader issue, though, we are putting together, Navy-wide, an infrastructure improvement plan that kind of looked at the shipyard and now expands into all of our infrastructure. While I am not the lead for that within the Navy. I am happy to get you an update on how that is progressing, that overall infrastructure improvement plan.

Senator HIRONO. I have been so focused on the infrastructure needs, particularly in Hawaii, as we have seen a number of crises starting with Red Hill and lights going off at Tripler, the biggest hospital there, and a number of other things, and that is why I think the maintenance of our facilities ought to be paid attention to. We should not wait until something breaks or something floods an area before we will go in and fix it, because these needs are identified and I would like to see a lot more attention being paid to fixing things before they create the kind of community issues that Hawaii has faced in the last year.

Thank you, Mr. Chairman.

Senator KING. On behalf of the Chairman, Senator Scott.

Senator SCOTT. Thanks.

General and Admiral, can you talk about the importance of the relationship with the Philippines, and military-to-military, is it getting better, is it as important, is it going to be important to deter China?

Lieutenant General HECKL. Sir, absolutely. Of all of our allies and partners, I would say this is the one asymmetric advantage we do still maintain is our extensive allies and partners. But Philippines in particular, especially in to the Marine Corps, we train with them regularly. As you know or probably know, they are developing a coastal defense regiment that is very similar to where we are going, and they train with us in all the various exercises, Balikatan and all the rest. So absolutely, sir, vital and critically important.

I do not know if you have anything to add.

Vice Admiral CONN. I could look at a map and identify its key terrain, and broader than the Philippines, but in terms of the places and access that we are going to need, that we need to continue with our partners that are throughout the Pacific, building relationships and trust that could be future access.

Senator SCOTT. Do both of you feel comfortable that our military-to-military relationship is improving?

Vice Admiral CONN. As the RIMPAC [Rim of the Pacific exercise] commander in 2020, I believe, the Philippines participated during COVID. During those types of exercises it is about building relationships and trust, at the task force level and below. The performance of the Philippines and all the allied and partners that were out there during COVID, they earned my trust.

Lieutenant General HECKL. Likewise, sir, I mean, you know, our standing force right now is the 3d Marine Expeditionary Force. They are there, right? They train, live, eat, sleep inside the CCP's weapons engagement zone, and they partner with allies and partners there all the time, sir. It is regular.

Obviously I think all of us are seeing accesses becoming opened up, right. I mean, things are moving. We just need to seize the initiative here and keep this momentum going, because quite frankly, my opinion is that I think Dictator Xi has overplayed his hand a little bit and people are starting to see what it is all about. So I think allies and partners are very quickly seeing they more align with the U.S.'s values and how we support international rules-based order. So I think it is moving in the right direction.

Senator SCOTT. Can you two talk about the AUKUS agreement? I mean, there is some criticism now in Australia over it. Is that really at risk, and if it is, how important is that to us?

Vice Admiral CONN. AUKUS presents an enormous opportunity that can lift all our industrial bases up by building dominance in the undersea domain.

Senator SCOTT. Do you think it is at risk right now?

Vice Admiral CONN. No, sir.

Senator SCOTT. You do not think so?

Vice Admiral CONN. We are committed. There is work to do. In 2023 we will start doing work calls and some embedded crews, if you will. Later, in 2027, we will get some—no, earlier than 2027, getting some rotational forces, and then early 2030's will make a decision of how we are going to sell *Virginia*-class submarines up through five.

Lieutenant General HECKL. Sir, obviously I am not in the submarine business other than trying to help the fleet detect them and help them kill them, which is part of what we are doing in Stand In Force, but I will tell you from a MRF-D [Marine Rotational Force-Darwin] perspective—and I think we have changed now to Marine Rotational Force Southeast Asia (MRF-SEA)—that continues to expand. So you now actually have the first Marine Expeditionary Force (MEF) from Camp Pendleton assuming responsibility for the MRF-SEA as well as you have III MEF obviously in Okinawa, and obviously with the U.K., sir, you know we deployed a JSF [Joint Strike Fighter] squadron aboard *Queen Elizabeth* that did a worldwide tour. So you had U.K. F-35Bs, Marine F-35Bs forward deployed on a really, really capable amphibious ship, and it obviously came over into the South China Sea. So all good news, sir.

Senator SCOTT. Is 3D technology important? I mean, are we going to be able to be able to come up with things quicker? Is it going to reduce cost?

Lieutenant General HECKL. Sir, absolutely. Maintenance cycle times, delivery, it is right there on the tactical edge. Obviously, my background is aviation so I have to be a little more careful. Things have to be certified, obviously, because bad things can happen. But we are using 3D printing now, sir, for small things, like consumables on airplanes that do not have to be certified, and it has been really helpful.

Vice Admiral CONN. I will leave the company name out but I was recently at a 3D Manufacturing Company in Ohio for an engine manufacture, and what they are doing in printing engine components, and what they can do is faster than we can typically pour metal to build the stuff.

I think there is enormous potential as this technology continues to mature. I am not an engineer so I am not going to talk about critical flight safety. I am aware of it. But just making sure we have an understanding of those critical components, that they meet the specifications.

Senator SCOTT. Mr. Stefany, in the short time, if you have anything to add.

Mr. STEFANY. Yes. Unleashing this and making it at scale, everywhere part of our business is where we have to get to. Casting and forgings is one huge area, but applies to all of our industry.

Senator SCOTT. Thank you.

Senator KING. On behalf of the chair, Senator Peters.

Senator PETERS. Thank you, Mr. Chairman.

I want to first just say I commend the efforts made by the Navy in developing an Unmanned Aerial Systems (UAS) aircraft refueling platform. Certainly as you are well aware, the vast distances in INDOPACOM [United States Indo Pacific Command] is probably one of the main difficulties in operating in that AOR [area of responsibility], and I know many have argued that the MQ-25 Stingray could be a game-changer in many respects, to help extend the range of the aircraft and give our forces more flexibility in operating across vast geographical areas.

My understand is, though, that the current planning calls for Active Duty squadrons to be stationed with carrier wings. But I also think it is potentially a mistake, and I would love to have your thoughts, to overlook the Reserve component as a place where additional force structure for these units could be situated. Reserve units could be forward deployed, if necessary, on a rotating basis to Luzon, Darwin, Guam, and elsewhere, to increase capacity.

So my question for you, sir, is the Navy exploring the possibility of standing up Reserve component detachments to operate MQ-25?

Vice Admiral CONN. Sir, the MQ-25 is the pathfinder for carrier aviation in terms of uncrewed capabilities. It is the first. We have to get it right.

Specific to your question, the MQ-25 will operate off the carriers. We have not yet addressed whether we are going to put them at various places with the Marine Corps in terms of Expeditionary Advanced Base Operations. There are control centers they have to use. Even though the program is probably sliding to the right a year for an IOC [Initial Operational Capability] in 2026, we need to continue to invest in the command and control suite on those carriers because it is coming, and we have finite periods of time to do that.

In terms of your questions on the Reserve, sir, I do not think that has been addressed right now but I will take that for the record.

[The information referred to follows:]

Vice Admiral CONN. The Navy does not currently have any efforts underway to implement Reserve component support to the MQ-25 program. Current efforts are focused on the development of the program and Fleet operations by Active Duty personnel. The Navy may consider the operation and or support of MQ-25 by Reserve component personnel in the future, much in the same manner that the Reserves support other aircraft platforms.

Senator PETERS. I would appreciate that. I appreciate it.

General Heckl, the Marine Corps continues to make significant investments in its organic UAS capabilities, and as we look to INDOPACOM as the theater of priority the ISR [Intelligence, Surveillance, and Reconnaissance] capacities offered by MQ-9s would certainly be a tremendous value not only to the Marine Corps but the entire Joint Force.

So my question for you, sir, is can you speak to the Marine Corps efforts to stand up UAV squadrons, and in particular, what role Reserve components could play in standing up and operating these units.

Lieutenant General HECKL. Sure, sir. As you know, we already have one VMU stood up that is operating MQ-9s in theater now. We are going to be moving them from CENTCOM [United States Central Command] down to the Indo-Pacific. The plan is for two more. So we will have VMU 1, 2, and 3, and the long-term plan is for VMU 4, 5, and 6. Four, 5, and 6 are obviously in the later years of Force Design and we are doing some pretty close analysis, rigorous analysis, on what is next.

MQ-9A is clearly not our long-term solution. We are looking at some other assets that are beyond the classification of this hearing. But we are working with Air Force and with DARPA [Defense Advanced Research Projects Agency] and others. So as you know, the Marine Corps is heavily invested in UAS of all categories.

Vice Admiral CONN. Sir, if I could, just to add—

Senator PETERS. Yes, please.

Admiral CONN.—as the Deputy Chief of Naval Operations for Warfighting Requirements and Capabilities I have to look across all domains. So the investments we are making in the air domain, with MQ-25, Triton will complete that program of record in this year. Large unmanned surface vessels, ramping up to 3 by the end of the decade for a total of 8, I believe. XLUUV [Extra-Large Unmanned Undersea Vehicle], who just got its feet wet, the undersea piece, and then the MQ-25 that you mentioned.

But I think there was mention about the growth of China and a mention about what our industrial base is willing to produce. It is these unmanned systems that are going to be force multipliers across the domain. We have some risks that we need to burn down, but we are not admiring the problem. We are not wringing our hands. We are rolling up our sleeves.

Senator PETERS. Yes, no question. Actually, General, the followup on the Marine Corps is a question I asked the admiral about Reserve components. Any plans to have Reserve components with UAS?

Lieutenant General HECKL. Sir, I do not believe the plans are now but the Marine Corps relies heavily on our Reserves across the entire enterprise, sir, so it would not surprise me at all if we ended up going that route, especially for 4, 5, and 6.

Senator PETERS. Great. Great, and another question, General. The Amphibious Combat Vehicle (ACV) is the next generation replacement for the Amphibious Assault Vehicle (AAV), as you know. But I know the ACV has faced a somewhat rocky rollout to the fleet, and my understanding is that the Marine Corps has gotten its hands around these issues. But could you speak about what is happening, to this Committee, please?

Lieutenant General HECKL. Absolutely, sir. The ACV, the amphibious combat vehicle, replacing the AAV, built by BAE [British Aerospace Engineering], is a great vehicle, sir. Where we ran into the problems is the surf zone, and so what I would simply say for that is that part of the problem was how Marines have traditionally, for decades, assessed the surf zone. We did it very inaccurately. We now have technology that we are fielding. It is I MEF now, it is on now. They are autonomous drones that go out into the surf and collect accurate data so Marines can make correct decisions.

So we are definitely moving in the right direction, sir, but the vehicle is going to be great. We have got to work out these problems and make sure when we make a decision to go or no-go through a surf zone, whether coming ashore or going back to the ship, that we have the right and accurate information to make that judgment.

Senator PETERS. Great. Thank you. Thank you, Mr. Chairman.

Senator KING. On behalf of the Chair, Senator Tuberville.

Senator TUBERVILLE. Thank you, Senator King. Thank you all for being here today.

Mr. Stefany, my understanding is in World War II we had 30 shipyards. We have 8 now. Is that correct? Does anybody know?

Mr. STEFANY. As significant shipyards, yes, 8 would be about right.

Senator TUBERVILLE. Is that enough?

Mr. STEFANY. No, sir, that is not enough to meet the demand overall, particularly on our submarine side of our industrial base.

Senator TUBERVILLE. So we have got problems, big problems. I have been to a couple of shipyards lately and they are having to recruit out of McDonald's, Walmarts, Targets, going in and saying, "Listen, we can teach you to weld. We can teach you to do plumbing, all those things." Do we need to get involved in this? I mean, are we going to leave it to the commercial shipyards? How are we going to handle this, because we are slipping on borrowed time here.

Mr. STEFANY. Sir, on the workforce side, which is frankly a national effort issue, for generations we have not kept our trade crafts as a Nation at the value that they need to be at.

But in the area of shipyards and getting the workforce we need so that we are not competing with McDonald's or Walmart, like you mentioned, sir, we are working at three levels. At the local we have started some initiatives with funding from this Committee to work on going into the high schools and going into trade schools and actually reinstating shop programs and things like that, where we can get people trained in high school to come out, and actually guarantee them jobs when we get on the outside. So we started that in Philadelphia last year, graduated about 200 people. We are repeating this year, moving to Pittsburgh, and then out to the Great Lakes, and then ultimately to the Gulf Coast as we expand that program.

Regionally, we are working with our shipyards. Each one has a really good apprentice program, and we are trying to figure out how to expand that to larger areas regionally to get that workforce. Because you are right—it is all about having that skilled workforce, sir.

Senator TUBERVILLE. You know, when most of us went to school we had shop, and we had that elective, and we do not have that anymore. Pardon?

Senator KING. That was my best course.

Senator TUBERVILLE. That was your best course? You made an A in it, right?

Mr. STEFANY. Most schools do not even have the equipment in the schools.

Senator TUBERVILLE. Yes, but we can talk about appropriating all these ships and submarines and everything. Thank God we have got a lot of commercial people out there working. How are we going to build these things, especially if all hell breaks loose, to be honest with you.

Mr. STEFANY. Yes. That is our number one challenge, unquestionably, and we look forward to working with the shipyards and, again, your Committee on what we can do about it. But it really is a national——

Senator TUBERVILLE. Well, we need more shipyards, and then we need more places to where people build ships.

Mr. STEFANY. Exactly.

Senator TUBERVILLE. We need to spread out.

Mr. STEFANY. Yes.

Senator TUBERVILLE. Okay, and I am encouraged by the commercial solutions and all the military's tough problems, Maxar being one on imagery, and XOM Analytics. Why don't you talk a little bit about your domain, Sairdrone, and how it has done, how you evaluate it?

Mr. STEFANY. So I will talk business-wise, but I will let the admiral go on the operational side first.

Vice Admiral CONN. So sir, you are speaking to, I believe, some of the efforts of Task Force 59 on Bahrain is doing, and that has been a great environment, which out of operational necessity, how do we create maritime domain awareness from the Red Sea into the Gulf and the adjacent seas, and understand what is out there. A lot of it was contractor-owned, contractor-operated concepts that went out to Bahrain and tell you this is what we can have. Sairdrone was one of them.

It is also working with our allies and partners that are in that area, and it is not just the things, if you will. It is the mesh networks and the data analytics which come to a fused picture.

So we need to look at what we are doing out in Bahrain and then how do we scale it for potential other areas? I think that will be kind of rolling out in the next few months.

Senator TUBERVILLE. Yes. I understand Iran tried to swipe a couple of our Sairdrones and we forced them to put them back. Correct?

Vice Admiral CONN. Yes. But really the question is "do we care, based on the level of technology." You know, it is affordable, plentiful, and——

Senator TUBERVILLE. Yes, and a lot cheaper.

Admiral CONN.—a lot cheaper.

Senator TUBERVILLE. Let me ask you about the 14 of 18 SSBNs. Is that going to be enough to meet the Nation's strategic force

needs? You know, the Navy has transformed four *Ohio*-class submarines. Kind of evaluate that, as we get into near time.

Vice Admiral CONN. Yes, the requirement is 12 right now, and based on the timing, those decisions to go in excess and above to the 12 would be made a long time from now, and whether or not we recapitalize the SSGN force.

Senator TUBERVILLE. How much would that cost to keep those in operation until we get the other submarines in? Would that cost us a fortune?

Vice Admiral CONN. The SSGNs?

Senator TUBERVILLE. Yes.

Vice Admiral CONN. I do not have the exact number. I know as a Third Fleet commander some of the SSGNs are too showing their signs of age, and we take care of our nuclear force, quite frankly, better than some of our non-nuclear force, and they are showing their age. There are some options to conduct PIRA [Pre-Inactivation Restricted Availabilities], but I will turn it back over to Mr. Stefany.

Mr. STEFANY. We will take it for the record to get you the cost to do what we call a PIRA [Pre-Inactivation Restricted Availability], which we would extend the life of those current boats, if they are able to be extended. So we can get that for you.

[The information referred to follows:]

Mr. STEFANY. The Navy looked into the feasibility of further extending select SSGN hulls via a Pre-Inactivation Restricted Availability. As part of this feasibility review, cost and schedule assessments were conducted to identify risks and opportunities of incorporating these additional unplanned availabilities into the current effort to maintain the submarine force. Results from the review indicated an unacceptable impact to projected CVN, SSBN, and SSN operational availability given the current limited capacity at public and private shipyards. Capacity analysis at the shipyards looked at drydock availability, manning capacity, and material availability.

Each SSGN PIRA is estimated to require more than 187,000 man-days of shipyard labor and to require over 2 years in a drydock at a cost of at least \$350 million. Additional costs above those directly associated with the PIRA include personnel (~\$34 million per year per submarine) and operations/maintenance of each submarine after PIRA until inactivation (~\$52 million per year per submarine).

Given the limited capacity at the public shipyards, these unplanned three year availabilities would have significant impacts on CVN, SSBN and SSN maintenance availabilities, offsetting the benefit of additional service life of the SSGNs. SSN availabilities are likely to be delayed to provide capacity for any SSGN PIRA. Specifically, Navy estimates that two SSNs would become idle for each SSGN PIRA added to the public shipyard workload

Senator TUBERVILLE. Would we want to do that?

Mr. STEFANY. We would want to. Again, depending on how many cycles they have done they may not be extendable. So we are going to look at each ship and then let you know. We will let you know what it would take to extend their lives, sir.

Senator TUBERVILLE. Thank you.

Senator KING. I understand the Chairman is still caught on the floor, that the first vote is not completed yet. If St. Peter ever comes to any of you fellows and says you have 10 minutes to live, you should say, "Could it please be during a 10-minute Senate vote?"

[Laughter.]

Senator KING. It will give you a lot more leeway.

Mr. Stefany, first I want to commend you—I know you get hard questions at these kinds of hearings—for the funding of the dry-dock project over the last 2 years at Portsmouth Naval Shipyard. That is going to be a dramatic increase of capacity at that shipyard, and it is going to serve the Navy well. So I appreciate that the funding is there, and was last year, and again this year at a slightly higher amount. So thank you for that.

Mr. Stefany, I want to talk about the transition from DDG Flight 3 to DDG(X). As you know, the Congress encouraged the Navy, and the Navy, I think, has been working in this direction, to allow and encourage Ingalls and Bath Iron Works to work together on the design, on getting it right. I am a great believer in competition, but I believe that having a design in place on a consistent basis, and that the manufacturers can be a lot of help in being sure that what is designed is buildable. So I hope you will continue to maintain that posture of allowing the two shipyards to be in discussion with the Navy on the DDG(X).

Mr. STEFANY. Yes, sir, that is exactly our approach, to come up with the design together with the same digital tools, digital manufacturing, and then once we get into production then we will start competing them going forward. We have awarded a contract to Bath and to Ingalls just recently to be part of our design team, and as we get into the design process we are going to work together very closely.

Senator KING. Two thoughts, as I have served on this Committee for 10 years. Let us be sure that the design is mature before we start building. In looking at some of the overrun problems of the *Ford*, for example, it is when we are doing R&D [research and development] while we are building that we get into trouble. So that is one observation.

The other is, having worked closely with Bath Iron Works, and knowing of Ingalls' work situation, we want to try to avoid a trough between the DDG Flight 3 and the DDG(X). In other words, if these yards lose welders they ain't coming back. There are just too many other places for them to go. So we have to be thinking about the transition so that it is a smooth one and not a loss of work, a loss of employment during a 2-or 3-year period where one ship ends and the other starts. Do you see what I am suggesting?

Mr. STEFANY. Yes, sir. You are right where we are. We see it as a 3-year period, and so we will have to be building DDG-51s and the new destroyer over that 3-year transition period, and we are committed to do that. We are not going to stop 51s and then just immediately go to the new program. We are going to have this 3-year overlap.

Senator KING. That is helpful and I appreciate that.

I was concerned there were only two DDGs in the President's Budget. We are talking about the industrial base. Part of maintaining the industrial base is a consistent demand signal. That is why this Committee recommended, and the Congress adopted, a 15-ship multiyear. So I am sure we are going to be discussing this in the Committee, but I am hopeful that we are not going to be able to add an additional destroyer.

Admiral Conn, you have a wonderful title. You are in charge of warfighting requirements and capabilities. My question is, and I

asked General Milley this question this morning in the full committee, warfare has changed dramatically, just in the last like 5 years. Electronic, cyber, directed energy, space. Do you feel that we are taking adequate account of the changing nature of the battlefield in terms of our strategy going forward of shipbuilding and projection of power by the Navy?

Vice Admiral CONN. I do, sir. I think it is a three-FYDP view in terms of getting to that hybrid fleet, which is part of CNO's vision for the future. There are risks that we have to burn down. We are already making investments in cyber, for defensive cyber. We are up to 30 ships by 2030 that will have the capabilities from at least HM&E [Hull, Mechanical and Engineering] perspective, from a cyber perspective. I will stop there, as for your time.

Senator KING. Okay. General, I know that your marines have to be prepared for no GPS [Global Positioning System], electronics out, no communication. I mean, this is the first step in a conflict is going to be this overall electronic, cyberspace compromise, and I hope that is something you are taking into account.

Lieutenant General HECKL. So we are exercising that way right now. Alternative PNT—position, navigation, timing—we are doing that all the time now, sir, and we are going to continue to stress that.

Kind of what you are alluding to, though, is the “left of bang” people say, which is term I really do not care for because bang is happening now in cyberspace, info—

Senator KING. It sure is.

General HECKL.—domain, and we train to that time now, sir. So yes, we are absolutely taking that into account.

Senator KING. The Secretary of the Navy was in my office last week and he brought a sextant with me to prove to me that this is being taken into account.

Admiral Conn, one more point, and it sounds somewhat facetious but it is serious. We would like you to bring some Navy ships to Maine, and I will tell you why. There is a huge diminution of military presence in New England, in the Northeast generally. Almost all the bases are closed. Our young people are growing up without seeing anybody in uniform, and for you to have a ship at the Eastport Fourth of July Festival, or a Fourth of July in Portland, that means a lot, and it means a lot to the citizens but also to exposing the military to young people.

We are having a recruiting problem, as you well know, and one way to counteract that, not to compromise readiness in any way, is to have the Navy show a presence along our coastline. I am partial to Maine, but I think there is other coastline in this country. I am not sure.

Vice Admiral CONN. Sir, there are various Fleet Weeks on both sides of the coast, but I will take your point. Having been up in Bath for the commissioning of *John Basilone*, and being able to speak up there where people were thanking previous military members who served, and then I had the chance to speak and I asked the shipbuilders to stand up and say thank you for your service. There are many ways to serve your Nation. So I think recognizing shipbuilding is serving your country is part of the narrative that we need to get out there.

Senator KING. Absolutely. It has got to be more than a job. It is a mission, and you can help us to underline that.

Senator CRAMER, further questions?

Senator CRAMER. Well, in an effort to stall while the chairman returns from the second vote, let me just say, Admiral, no need to bring ships to North Dakota.

[Laughter.]

Senator CRAMER. But we will take the Blue Angels every 2 years at the Fargo Air Show, if you do not mind. The commander just happens to be from North Dakota right now.

I think what I would like to do is just do the thing that is most dangerous, and I do it too much, is think out loud a little bit. But going back to the discussion of AUKUS—and, Admiral, I think you and Mr. Secretary referenced the opportunity. I think both of you may have even used that term—with that in mind and considering some of the recent details that have come out, that Australia would like to start buying *Virginia*-class submarines by 2030, you know, you both talked about two a year and we are at about 60 percent of that, some cuts to nuclear reactors, given all the stresses we are under.

What are some of the challenges of AUKUS, because I would see some? I happen to agree, though, there are more opportunities, certainly not just in alliances but even synergies as we talked about with regard to this workforce challenge and the industrial base. Maybe just talk a little bit about that challenge that AUKUS would bring as well, and maybe elaborate more on some of those opportunities.

Mr. STEFANY. So I will start on the business side. Two big challenges. One is a workforce in Australia to ultimately build. It has taken us 70 years to get the workforce we have to build nuclear submarines, and they are looking at less than 10. So I think that is a huge challenge to actually create the culture and the workforce that can build nuclear submarines. It is not commercial ships. You know, it is a special skill and talent.

So when they will be ready to do that, we have said is not date-driven. It is event driven. You have to show us you are ready, both on the nuclear propulsion plant side and the submarine side as well. So I think that is a huge item.

Then the second is what the design of the new submarine will look like. It is a mix of the U.K. submarine and a little other stuff, and what that actually is going to look like. How much of it will be United States content, Australia content, U.K. content I think is another huge, I will not say obstacle but something we have to work through.

On the operational side I will turn it over to the admiral.

Vice Admiral CONN. I think on the operational side—I have to check classification—in terms of some of the embedded crews, that is going to buy down some of those challenges that we have, both in terms of operating the power plant and then on the boat. But there is path. There is an optimal path to get there.

My real focus, sir, even if AUKUS was not out there, is getting our industrial base and our maintenance facilities to be able to produce and sustain two *Virginia*-class submarines a year on top of *Columbia*. We have to do that for ourselves, and both in the

2023 budget and in the 2024 budget the money is laid in but now we are going to have to execute.

Senator CRAMER. Well, and that is where I think market demand signals are fairly important as well. We have not talked a lot about that, but just your statement right there sends a signal, you know, of some sort to the market.

I mentioned earlier synergies once AUKUS is fleshed out a little bit more. While they need to get ready, they have the advantage of our 70 years of experience, right? So hopefully there is a synergy there.

With that I have stalled long enough for the chairman to get back here. In the meantime, two others showed up, so I will yield the rest of my time.

Senator KAINE. [Presiding.] I will go to Senator Blumenthal and then Senator Schmitt, and then Senator Sullivan, and then some of us will have second rounds of questions as well, because I understand the three of you have not yet asked questions. Is that correct? So we will go Blumenthal, Schmitt, and Sullivan.

Senator BLUMENTHAL. Thank you. Thank you for being here. I thank you for your service and to the teams behind you.

None of this is going to happen, and I agree, two submarines, Virginia-class attack submarines a year. We need to build the *Columbia*. It is done in Connecticut, in Groton, the submarine capital of the world. But it is not going to be done if we do not hire more people, if we do not give them the skills and the training.

I just think we are not investing in the vocational and career education that we need to produce those welders, pipe fitters, electricians, the folks who have the trades and who will receive not just jobs but careers if they are given that kind of training.

I know that colleagues are waiting to ask questions, but I just want to know if you can tell me what kind of major investment the military will advocate in this next NDAA so that we meet the national security need of a trained workforce?

Mr. STEFANY. So Senator, in the President's budget about \$600 million is requested between Navy money and DOD, what they call IBAS [Industrial Base Analysis and Sustainment] money, for the submarine industrial base, and about a third of that is for workforce development efforts. So we have some funding in 2023 and we are asking for more in 2024, to actually get into the schools in the areas that we think there is opportunity. Most schools do not have shop equipment anymore. They do not have shop teachers. You know, get in there and start investing with our Department of Labor folks and Education in recreating what maybe was in the 1970's and 1980's, a normal path through those schools to have opportunities coming out the back end.

Senator BLUMENTHAL. Are there resources that can be devoted right now?

Mr. STEFANY. We have 2023 money that was in last year's appropriation and authorization, that we are starting that process. We have a couple nascent programs. I am happy to come and brief you and your staff on that, sir.

Senator BLUMENTHAL. Could you do that?

Mr. STEFANY. Yes, sir.

Senator BLUMENTHAL. I would appreciate it.

I just left a family—different topic—a family of Xavier Sandor, a sailor on the USS *George Washington*. His ship came in for maintenance, and he was living in the midst of a construction zone, literally. Eventually he was sleeping in his car, driving home, against orders because he could not live or sleep. There are sailors who will spend their entire contract possibly stationed on a ship undergoing maintenance availability in a shipyard, essentially a construction zone. Currently sailors E-3 and below are not eligible for basic housing allowance, as you know. They are required to reside at duty station, under intolerable conditions, no real eating place, no chow hall, a 2-mile walk to the ship if they have anywhere to live, even in their car.

One idea I discussed was allowing the commander of ships in long-term maintenance availability to waive the prohibition on the basic allowance for housing for those junior sailors. I do not know what the options might be, but I would like a commitment—maybe I should ask Admiral Conn—will you look into this idea and report back to me and this Committee, give us your assessment of how conditions can be changed?

There is a report, an investigation ongoing. I spoke to Admiral Myers about it, literally moments ago, when the family—the dad, mom, and brother—came to visit in my office with Admiral Myers. It just happens, coincidentally, I asked the Secretary of Defense about it this morning, in a hearing, mentioning this specific instance.

The heartbreak is just almost impossible to describe, especially for a dad. I have had two sons who have been in the military, one Marine Corps infantry officer in Afghanistan, the other a Navy SEAL. This is just something that we need to do better on, I think.

Vice Admiral CONN. Sir, I will take that for the record and work with the Chief of Naval Personnel or others to get you the answer.

[The information referred to follows:]

Vice Admiral CONN. The Secretary of the Navy currently has authority to waive the prohibition on the receipt of a housing allowance for Sailors without dependents assigned to sea duty in the paygrades of E-5 and E-4. It remains preferable to house junior Sailors without dependents in unaccompanied housing or government leased housing. However, the Navy is reviewing your request and if appropriate, the Administration may propose changes in future legislative cycles.

Senator BLUMENTHAL. Thank you. I appreciate. Thanks, Mr. Chairman.

Mr. STEFANY. Sir, I will quickly offer there are, in the budget, some infrastructure, like parking garages and crew facilities that are actually in our proposed budget to alleviate some of those issues, but overall I definitely share your view. We have to do better.

Senator BLUMENTHAL. Thank you.

Senator KAINE. Thank you, Senator Blumenthal.

Senator SCHMITT.

Senator SCHMITT. Thank you, Mr. Chairman.

This is my first Subcommittee hearing and I want to note that Missouri has an Air Force base and an Army base, but I specifically wanted to be on this Subcommittee because I think I am going to be advocating plenty for those branches, but I think the challenges that we face in the Indo-Pacific and the pacing challenge

of China is so critical, and the work that you all will be doing as we hopefully step up our game. The ships that you need, the weapons that you need, it is certainly going to be a focus of mine.

My question, I guess, Vice Admiral Conn, I have two questions. The first one to you, I know there have been some concerns about the tactical aviation inventory, and by some assessments three to four carrier air wings short of what we need, and the capability we need to project the power in the Indo-Pacific. What is your assessment of where we are at and the efforts that might be undertaken to shore that up?

Vice Admiral CONN. Sir, in terms of meeting Navy force structure requirements, from a tactical air perspective, the strike fighter inventory management shortfall is 31 aircraft in 2027, that goes to zero by 2031. That is number one.

In terms of modernizing the air wing, you will see in this budget significant resources going after NGAD [Next Generation Air Dominance] and specifically F/A-XX. You will see MQ-25. I think you will see Collaborative Combat Aircraft. All these we are working in partnership with the Air Force, so that DOD does not have to pay twice in some cases. We are building different airplanes. They will be different. But some of the internals, if you will, the mission systems, is where we are trying to design as best we can.

Senator SCHMITT. Well, I want to followup, Mr. Stefany—am I saying that right? Stefany, Okay. I apologize. I want to followup a little bit on that as far as the strategy and the inventory and what we need. For 2 consecutive years now, Congress has added F/A-18 Super Hornets, and you might know where those are constructed, in St. Louis, Missouri. Where are we at with this, because Congress has appropriated it. There is really not a plan. I think a lot of even the maintenance we are falling short at this point. The F/A-18 Super Hornets, where does that fit in? I understand the modernization, but the needs that we have right now, it is a big concern.

Mr. STEFANY. So first of all our funding ended in 2021, but Congress added funding in 2022 and 2023, of 20 total aircraft. We asked, in January, for Boeing to give us pricing for that so we can get a proposal and start negotiating it. We expect that to come in in the June timeframe. We will then negotiate with them and hopefully have a contract in place toward later this year for those 20 aircraft.

As part of that, I am sure you have heard discussions of the data delivery and getting the right data for our sailors and marines to maintain our aircraft, on aircraft carriers or at our facilities, in a logistically constrained environment of the future, potentially. That is a detail that we are working in parallel to getting the pricing from Boeing to buy those 20 aircraft. We need to actually have their proposal so we can work on a contract.

Senator SCHMITT. One of the concerns that I have heard is that there are new challenges being placed on suppliers, so that would make the reality of actually paying for and building the F/A-18 Super Hornets nearly impossible because of the onerous restrictions and regulations on subcontractors. So I hope that is something that we can talk about.

Mr. STEFANY. Yes. I actually have not heard a specific case of that, but I am happy to either work with you or with Boeing on that.

Senator SCHMITT. Thank you. Thank you, Mr. Chairman.

Senator KAINE. Thank you, Senator Schmitt.

Senator SULLIVAN.

Senator SULLIVAN. Thank you, Mr. Chairman, and gentlemen, thank you.

I want to begin, Admiral, with this recent disturbing “Defense One” article, and I would like to submit it for the record, Mr. Chairman, “Navy on path to violate 31 amphib ship requirement in 2024.”

Senator KAINE. Submitted without objection.

[The information referred to follows:]

Navy On Path To Violate 31-Amphibious-Ship Requirement in 2024

BUDGET PROPOSAL ASKS CONGRESS TO ALLOW SHIP RETIREMENTS
THAT LAWMAKERS EXPLICITLY NIXED LAST YEAR.

By Caitlin M. Kenney
Staff Reporter, Defense One
March 13, 2023

The Navy is proposing to drop its amphibious fleet below 31 ships, despite an agreement with the Marine Corps and a potential violation of last year’s defense policy law.

Sent to Congress on Monday, the Navy’s proposed \$255.8 billion 2024 budget aims to retire eight warships before the end of their intended service life, including three *Whidbey Island*-class dock landing ships, or LSDs, that it proposed to scrap last year but which were saved by the 2023 National Defense Authorization Act.

The Navy’s \$32.8 billion shipbuilding request buys nine battle force ships but no amphibians, including the *San Antonio*-class amphibious transport dock ships, or LPDs, that are meant to replace the LSDs.

The LSDs chosen for early retirement were found to be in “poor material condition,” according to Defense Department budget slides.

“We’ve gone through, not only on LSDs but the other divestments proposed in this budget, did a ship-by-ship review, to understand the material State of each of the ships. What we found on the LSDs is that they are challenged in terms of readiness. We want to make sure that the capabilities that we field are the right capabilities, and are able to perform the mission to the standards that we expect,” Navy Undersecretary Erik Raven told reporters ahead of the proposed budget’s release.

“And so we’re proposing those divestments because we think the return on investment, on further investments on those particular ships, as judged hull by hull, that return on investment is not there,” Raven said. “Additionally, say that we have sailors and Marines who are serving on these ships, we think that getting them matched up to the right platforms is the way to go.”

Marine Corps Commandant Gen. David Berger last week rejected any plans that would cut these aging LSDs before their replacements were delivered.

Despite the delivery of one LPD in 2024, the early retirement of the three LSDs would mean the total number of amphibians that year would drop below the legally required 31 ships minimum laid out in the 2023 NDAA, according to the budget documents. Raven told reporters that the Navy is not seeking a waiver at this time.

It was a surprise that the Navy “has thumbed its nose that defiantly to the Congress” after lawmakers supported the ship minimum last year, said a congressional staffer who spoke to Defense One on condition of anonymity. “So what the Navy has done with this budget is they took all of those signals and all those indications and warnings, if you will, from the Congress and ... said you know, ‘Thanks, but no thanks, we’re going to do what we think what we ought to be doing, and we don’t really care what the Congress has to say on this subject.’”

Berger on Monday reiterated the reasoning behind the 31-ship requirement for amphibians.

“Anything less incurs risk to national defense by limiting the options for our combatant commanders,” he said in a statement to Defense One. “Per strategic guid-

ance, the Marine Corps must be able to provide the Nation with crisis response capabilities and build partnerships with allies and partners in support of integrated deterrence—difficult to achieve without the requisite number of amphibious warships.”

The requirement is linked to the Nation’s defense, said Sen. Roger Wicker, R-Miss., and ranking member of the Senate Armed Services Committee, at the March 9 Amphibious Warship Industrial Base Coalition event on Capitol Hill.

“We cannot defend this Nation, we cannot do what we need to do to prevent war, to prevent war, without the 31 ships,” Wicker said. “And so the National Defense Authorization Act . . . makes it clear that the Commandant of the Marine Corps is the one we’re finally going to listen to in terms of our ship requirement.”

This year’s 30-year shipbuilding plan, and what it may say about the long-term future of these ships, will be released “very soon,” Raven told reporters ahead of the budget roll out.

PROCUREMENT

The Navy budget documents also chart out the ship procurements from 2024 to 2028, and there are a lot of zeros in the amphibious fleet’s future. The Navy plans to buy its next *America*-class amphibious assault ship or LHA in 2027 and does not plan to buy any *San Antonio*-class LPD 17 Flight IIs in any of the years listed.

The shipbuilding topline includes new ship construction as well as funds for other vessels like the Landing Craft, Air Cushion (LCAC) Service Life Extension Program and the Landing Craft Utility LCU 1700 class.

The future Landing Ship Medium or LSM, is still planned for 2025. However, that is already 2 years past the original plan to buy the first ship in 2023. The Marine Corps just started to experiment with a commercially leased ship to inform the LSM’s future capabilities.

Last month, Navy Secretary Carlos Del Toro said the service is taking a “strategic pause” on buying more LPDs until additional studies are completed, Defense News reported. Afterward, the Navy would “probably” start buying them again, according to the report.

On Monday, Raven told reporters at the Pentagon that the office of the Secretary of Defense had directed the pause and a capabilities-based assessment, and that there is an “integrated team” to assess the ships.

“What we are making sure that we are doing as we move forward with our budget plans, is making sure that we have the right capabilities at the right price aligned to not only meeting military requirements, but working with industry,” Raven said. “And for LPD, we’re taking a look at the acquisition strategy moving forward, again, to make sure that we would have the right capabilities at the right price and working with industry partners to put together that plan moving forward.”

The Navy has “time to get this right” with the LPD, and that the Navy and Marine Corps are “fundamentally aligned” on the 31-ship requirement, Rear Adm. John Gumbleton, the deputy assistant secretary of the Navy for budget, said Monday.

“Both service chiefs like 31 [ships] as a requirement. Both service chiefs like multiyear procurements. Both service chiefs want to buy in a predictable future. And so if we can do a study and actually lower the costs of this, that’s all to the good of the Department of the Navy and Marine Corps,” Gumbleton said.

Buying amphibious ships tends to be the last priority for the Navy after spending shipbuilding funds on aircraft carriers, submarines, and destroyers, Hudson Institute Senior Fellow Bryan Clark said March 9 during Defense One’s State of the Navy event.

“Whatever gets left over is what can go toward the amphibious ships and the support ships. And when you do all the numbers for that, you always end up with you know maybe not quite enough for the amphibious ships, because if you’re building one LHA every four or 5 years that you can incrementally fund, that’s a chunk of money that’s on the scale of you know, \$500 million a year. And then you’ve got maybe \$500 million or a billion dollars leftover for one more amphibious ship, which isn’t quite an LPD,” Clark said.

Senator SULLIVAN. Thank you. As you probably know, a number of us—myself, the chairman—worked hard on this 31 amphib ship floor. This is not a suggestion. It is a law. It is a law, so my view is you do not even have the authority to do this. I have raised this with the CNO and others, but this is something that the Navy, the Marine Corps worked on, and out of the gate you guys say, “Eh, maybe we will just blow off those Senators and Congressmen.”

Again, not a suggestion. I am actually really pissed about this. So how do you answer this? My view is there is no answer. You have a law. We passed it. It went through. The President of the United States signed it. By the way, in the Committee it was unanimous. This Committee was in the base bill. So it was not controversial, and the Navy comes out and says, "Eh, we will just blow off those silly U.S. Senators."

So what are we doing here, Admiral, and how can you rectify this? It is a big issue.

Vice Admiral CONN. It is a big issue.

Senator SULLIVAN. I am not pleased about it, and no U.S. Member of Congress should be pleased about it. You guys do not have that authority to do what you just did in the President's Budget. That is my view.

Vice Admiral CONN. Yes, sir. In terms of the impact and in terms of getting below 31 amphibs is with our LSDs.

Senator SULLIVAN. But why don't you address the threshold issue, which is we told you not to go below it.

Vice Admiral CONN. The cost, in terms of—

Senator SULLIVAN. No. We told you, in a law, signed by the President, not to go below the floor. So what is your answer to that?

Vice Admiral CONN. My answer to that—

Senator SULLIVAN.—costs or anything. We balance the costs.

Vice Admiral CONN. Yes, sir. But the answer to that, sir, is having 31 ships, of which three of them may be tied to a pier for the next 5 years, is not really 31. We have an aging platform that came into the service about the same time I did, back in the mid 1980's.

Senator SULLIVAN. We need a serious discussion on this issue, because in my view the Navy would be pretty darn worried about a headline saying, "Navy on path to violate 31 amphib ship requirement in 2024." If you are saying the 31 ships, 3 of which are just going to be sitting there in maintenance for 5 more years, that is a problem.

I think what you guys needed to do, before you issued the budget, is come to this Committee. Given how important this was to a number of us, given, by the way, how important this was to the U.S. Marine Corps, and not surprise us with, in my view, a violation of a law that we worked really hard on last year.

Mr. STEFANY. Yes, sir. We will certainly take that, if we are going to be doing anything that looks like it is not going to make it, we will come and talk to you in advance. So that is a great request on your part, and happy to do that.

Senator SULLIVAN. Okay. Very important.

General, I want to turn to Force Design. I have written an , it was a while ago, in "Defense News." Mr. Chairman, I would like to submit this for the record.

Senator KAIN. Without objection.

[The information referred to follows:]

If the Marine Corps' Force Design plan is going to succeed, it needs more money and more Navy support

By Dan Sullivan
Jun 13, 2022

The Marine Corps' Force Design 2030 effort has come under considerable scrutiny. Supporters and detractors have waged a public debate on the merits of Commandant David Berger's 10-year modernization effort to adapt the Marine Corps to current and future national security threats.

I commend my Marine veteran colleagues in the House and Senate for their recent Wall Street Journal op-ed focusing on the bold, innovative effort Gen. Berger is leading, and I agree with most of their points. But the actual success of Force Design—scheduled for completion by 2030—depends on addressing three key areas my congressional colleagues did not mention.

First, 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. This is critical so as to not leave the Marine Corps less combat capable at a time when such capabilities are needed most, for example, around the second half of this decade when many see a heightened risk of a Chinese invasion of Taiwan.

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 anti-ship 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 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 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.

Indeed, that is one of the underlying assumptions of Force Design 2030, that the Marine Corps' bold modernization efforts would have to be undertaken with flat or declining defense budgets. Such budgets are clearly not commensurate with global threats facing our Nation and require the services to make the difficult choice between current combat readiness and force modernization for future foes, while managing the resulting risk.

Second, 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.

Presently, the Navy's enthusiasm for these innovative, and likely dangerous, Marine Corps operations appears non-existent. None of the Navy's current strategy documents mention, let alone highlight, its important role in supporting concepts like Expeditionary Advanced Base Operations and stand-in forces, which are the essential operational components of Force Design. Without robust Navy support and buy-in, the Marine Corps Force Design efforts and strategy will fail.

Finally, although appropriately focused on China, 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.

It is for that reason I am introducing bipartisan legislation for the upcoming National Defense Authorization Act to require a minimum of 31 amphibious ships in the Navy fleet to ensure the continuing global response capability of the Marine Corps both during and after Force Design 2030.

Dan Sullivan, a Republican, represents Alaska in the U.S. Senate. He is a member of the Senate Armed Services Committee and a colonel in the Marine Corps Reserve.

Senator SULLIVAN. It essentially lauds the Commandant for really focusing on a bold, innovative plan. However, there are a number of issues that are out there that are being debated within the Marine Corps. This is the biggest restructuring of the Corps at least in decades, maybe in 100 years, and I let the Commandant know this. I think it is important we have hearings on this, that we stress-test it, that the light of congressional hearings, people who are for Force Design, people who have issues with Force Design, that we do that either on this Committee, Mr. Chairman, as

you and I have talked about, or the Readiness Subcommittee, or the full committee.

But let me ask a really basic question that is one of the criticisms, and again, recognizing what the Marine Corps is trying to do. As you probably know I am a little biased in terms of the services, and the Marine Corps is one that I have a lot of respect for, for obviously reasons.

But there is this issue of, as I wrote in this op-ed, “Managing the gap between divestment of current combat capability and future combat capability development entails significant risk.” The Commandant acknowledged that in a hearing last year. Some critics have stated that the Marine Corps is starting to be designed for a niche force with a niche important combat mission—China, Taiwan—but leaving out the statutory mandates of a combined arms, three-division—again, that is the law, right, the 1947 act, so the Marine Corps does not have a choice on that either. In the very significant cuts that have already occurred with regard to infantry, 100 percent of armor, bridging, mine-clearing capabilities, combat engineer capabilities, very significant cannon artillery, Military Police are gone.

I mean, there is a whole host of things from my perspective that the Marine Air-Ground Task Force (MAGTF) seems to be something that has been the most important issue in the Marine Corps for decades. We do not rely on anyone for logistics, for clearing, for bridging, for air, for artillery, and all of a sudden, when I am pressing on these people, talking about, “Well, we are going to do an MOU [Memorandum of Understanding] with the Army for bridging.” Really? “We are going to do an Memorandum of Understanding (MOU) with the Army for road clearing.” Really? That, to me, seems to go fundamentally against the whole idea of the MAGTF and self-sustainment.

I guess the bottom-line big question is that force-in-readiness capability, that is the kick-in-the-door capability, anywhere in the world, which is the hallmark of the Marine Corps, some of the critics are saying that Force Design is dramatically undermining this, particularly when divestments have not been made up with future combat capabilities.

That is a lot to throw at you, General. I think this deserves its own hearing. But do you care to respond to any of that?

Lieutenant General HECKL. Sir, look, that answer does deserve—I would offer myself and my staff to come back with you and sit down.

Senator SULLIVAN. Well, I am talking about a hearing on it.

Lieutenant General HECKL. Yes, sir, and we would do that as well.

But, sir, I can tell you that having been in this job now for almost 18 months—I am a fleet Marine, sir. I came from commanding the First Marine Expeditionary Force—we are on the right track. The MAGTF, sir, is as strong, if not stronger, than it ever has been.

The issue, sir, let me just put it this way. How III MEF, the Stand In Force that has been that way for decades, right, and all the MEFs are different. They always have been different—different sizes, different capabilities—but they are MAGTFs. We simply did

not equip III MEF with the tools to deal with the National Defense Strategy (NDS)-directed pacing threat. General Dunford acknowledged it. General Miller acknowledged it, that the Marine Corps was not organized, trained, and equipped to deal with the Communist Chinese Party, and we are doing that. But sir, I think—

Senator SULLIVAN. I appreciate that, and like I said, I applauded General Berger for his—he is getting on it more than anyone else. But that does not mean that it does not have flaws, and that does not mean that some of the criticisms or Wargaming or this big issue, and the General acknowledged it, I mean, we have divested a lot. I mean, I have one number here—21 percent of infantry, 100 percent of armor, bridging, and mine-clearing capability, 100 percent of Military Police, 67 percent of cannon artillery, a significant amount of critical fixed-wing and rotary-wing aircraft. My numbers are 35 percent of all F-35s.

Now maybe those numbers are wrong and this is why we need a hearing, but that is a lot of divestment.

Lieutenant General HECKL. Sir, all I would say to some of the—and, sir, I do not like to get into the, you know, because a lot of these are respected individuals. But they are entitled to their own opinions. They are not entitled to their own facts.

We have not diminished a single program of record. I am a V-22 guy, and I am going to stay in classification level, but now we are going to stop at 16 VMMs. The Commandant added 2 more, right? He was going to go to 14. He added 2 more. We are going to be at 16, of 10 planes. If I maintained 16 squadrons of 12 planes, I would be coming to you with a bill for an addition 34 V-22s. Our program is 360. We bought 360. Our program of record for JSF is 420—353 Bravos, 67 Charlies. We are buying those, and the program record for CH-53 Kilo is 200. We are buying 200.

Sir, I would just point out that like we are fielding HIMARS [High Mobility Artillery Rocket System], and we are working on loitering munitions, and we are going to follow the Army down the path, because we are not big enough to pay our own way. GMLRS [Guided Multiple Launch Rocket System], which is going to be a phenomenal capability, we got the Naval Strike Missile that is going to be followed up by the Maritime Strike Tomahawk. These are real capabilities, sir, that not only apply in the Indo-Pacific—look what we did with the 61/2 and Major General Donovan in the High North, right in the wake of Ukraine.

What I would tell you is the existential threat to the Marine Corps, just from Karsten Heckl's point, is the lack of amphibious ships.

Senator SULLIVAN. So you agree with my point with the Admiral?

Lieutenant General HECKL. Sir, I could not agree more. Sir, I have said this numerous times, in multiple forums, CSIS [Center for Strategic and International Studies] and others. The concern for me and for the Marine Corps is not tied to artillery or tanks. See what is happening to tanks in Ukraine. I am not saying—tanks have their place. Most grunts said they like them in an urban fight. I can pull up open-source video of Ukrainians using a \$200 quadcopter that has been modified to hold an 81-millimeter mortar, destroying a T-72.

Senator SULLIVAN. Tanks are pretty relevant in Ukraine right now.

Lieutenant General HECKL. Sir, yes, well—

Senator SULLIVAN. Loitering munitions are not—what about—sorry, Mr. Chairman. We are waiting on others?

Senator KAINE. No. We had Members that did second rounds already so I am just going to let you go. I have got some other things too, but I am here until you are done, and then I have got a few more things. Go ahead.

Senator SULLIVAN. Again, it requires a further debate. I mean, combat engineers, road-clearing, bridging—it seems to be one of the most basic elements of Marine Corps ground capability is gone.

Lieutenant General HECKL. Sir, I mean—

Senator SULLIVAN. How do we cross a river when we do something in Taiwan or Iran? Call the Army?

Lieutenant General HECKL. Well, sir, I mean, right now the Commandant's focus was getting us—sir, look, multiple tours in Afghanistan and Iraq. My opinion is, and I do not know what your opinion is, that we have become a second land Army. We have walked away from the fleet. In 2010, we did not have a BLT [Battalion Landing Team] to put against a MEU, a Marine Expeditionary Unit. Everything thing got big. You know, the ACV [Amphibious Combat Vehicle] is a great vehicle, but it is built to MRAP [Mine-Resistant Ambush Protected] standards, right? It is completely survivable. It does not fit in the upper V, on ships. It weighs 70,000 pounds. We are working around it but these are issues. It takes 18 ACVs to do what 12 AAVs did.

So we got big, heavy, immobile, and we are just trying to get back to being a Fleet Marine Force again.

Senator SULLIVAN. So let me ask one of the big criticisms, and maybe you can address it, and I already mentioned it, and again, I know there is this notion that it is all the retired four-stars, and it is not. It is not just the retired four-stars. But this idea that Force Design—and again, I am not saying I agree with it. I am saying these issues need to be aired. It is time for oversight on this very—whether you love Force Design or hate it—I love the Marine Corps, right? I mean, I loved being a marine more than I love being a U.S. Senator, so this is important to all marines.

One of the criticisms is that Force Design appears to be building a niche force construct for only one situation in one location, and the whole concept of a combined arms Force-in-readiness that needs amphibs has been diminished or will be diminished or is being diminished.

So let me tee that one up for you, General.

Lieutenant General HECKL. Sir.

Senator SULLIVAN. I am sure you have heard it, and I am sure you want to disagree with it.

Lieutenant General HECKL. I completely and absolutely, fundamentally disagree with the whole premise. It is still a MAGTF. We are still a Marine Air-Ground Task Force. Depending on the scenario, just like we did for 61/2, you know, in the wake of Ukraine, we task organized, and we put together a MAGTF, and quite frankly, where we found our value, sir, in the High North, when this started, was the recon, counter-recon and, you know,

countersense, make sense. We were passing off high-fidelity, target-quality track data to our allies on what the adversary was doing with some assets that I cannot talk about here.

So the direct application to everything the Commandant—what we have moved out on, not just the Commandant—what we have moved out on Force Design—and so remember, this is the fleet. These are the Marine regional forces, and these are all the MEFs involved with this. So to think we are making this for a niche market I just fundamentally disagree with. We have fielded HIMARS. We are going to continue. We are taking that to the next level. Right now we are working on the loitering munitions to give us the full, all-weather capability that is going to cover that 5-kilometer to 18-kilometer gap that we currently have with HIMARS.

I just want to point out also, sir, that we kept seven batteries of tube artillery. There are 3 East, 4 West, and we actually, as you know an artillery battery, at that point traditionally it had been six guns. We upped them to eight. We are going to hold onto those for any kind of contingency.

Senator SULLIVAN. Well, General—and thanks, Mr. Chairman. Sorry I went on so long but I think it is an important issue. Two final comments. One is in last year's NDAA I had a provision—again, unanimous—that was requiring reporting from the Marine Corps on this very topic of what has been divested and what is the incoming combat capability. Those are due every 6 months. The first one is due in April, so in a couple of days. I hope we get it on time.

Then the other issue that I have been raising, which I believe the Marine Corps leadership agrees with, is that without full Navy support, Force Design fails, because you are talking about integration, which I am in agreement with you on that, General.

But one of the things I mentioned in this Defense News op-ed from a while ago is presently I said State of the Navy's enthusiasm for these innovative and likely dangerous marine missions—the Stand-In Force is a dangerous mission—and the ability to get logistics and delivering marines and sustainability in many ways is going to rely on the Marine Corps, but it is going to rely on the Navy. As I mentioned there—this is a year ago—the Navy's current strategy documents never mention once, or highlight once Marine Corps Force Design or concepts like Stand In Forces, or expeditionary operating base forces.

So where is the Navy on that, Admiral, because again, you could be the biggest proponent of Marine Corps Force Design 2030 there is, but if the Navy is indifferent or does not care or wants to cut amphibs, then Force Design is going to fail.

Vice Admiral CONN. There is no daylight between myself and Lieutenant General Heckl.

Senator SULLIVAN. Have the Navy documents been updated to reflect interest in Force Design, because last year there was zero.

Vice Admiral CONN. Yes. Okay, sir. I mean, I acknowledge or I will take a look at that—

Senator SULLIVAN. Well—

Admiral CONN.—get back to you on that.

Senator SULLIVAN.—is what I am saying.

Vice Admiral CONN. So Lieutenant General Heckl and I, we go on the road and we give briefs together, that talks to the Stand In Force and the Commandant's design, as well as where the Navy is going in the future. Went up to the Massachusetts Institute of Technology (MIT), a very classified setting with over 300 industry partners, to give them a set of headlights in terms of how we are going to fight so they understand the context, and what do we need to fight with. That is from the Marine Corps and the Navy perspective.

The medium landing ship is going to be late to need. We acknowledge that. So we are committed to have a bridging strategy to get to that medium landing ship capability, that the ship will start construction in 2025. We have to look for other alternatives. We are committed to that.

We are a naval team. We are out in contact across the globe day in and day out for the various combatant commanders. We are a family. Is there friction at times? Certainly. But we are committed to the outcomes that we are both driving to.

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

Senator KAINE. Thank you, Senator Sullivan. Senator, I mentioned something before you came, which was at the beginning of the hearing. They did not deliver the 30-year ship plan to us. So normally we would have the plan and then we would have this hearing and be able to really direct questions to the plan. We thought we were going to get it last week. It did not happen. So I committed to the Committee Members, we will get that plan soon. We will get it before the posture hearing. But, in fact, for the posture hearing, because there is so much to ask the SECNAV and the Commandant and the CNO, if after the posture hearing Members of this Subcommittee still have questions based on the 30-year ship plan that we did not get until after this hearing we will reconvene to enable us to dig into that. Secretary Stefany was very good about saying they are ready to do that.

Senator SULLIVAN. Great.

Senator KAINE. Then I will just say to you, General Heckl, when a witness says to a Senator, "I completely disagree with you," it just so reminds me of my conversations with my own staff. I mean, it is kind of like, it just kind of gives me that homesick feeling for Russell 231.

Senator SULLIVAN. Well, I appreciate the frankness because it is great. It is what we need.

Senator KAINE. Yes, it is good.

Senator SULLIVAN. It is what we expect, especially from the Marine Corps.

Senator KAINE. Let me ask a couple of things, and they may have been covered when I was over on the floor, but first I just want to do a little bit on block buy. Inflation is a challenge and connected too, but there are some separate issues, supply chain disruptions are a challenge. The block buy, when it is done right, is not only a hedge against inflation, because you can buy up front before price goes up of various components, but it also enables you to avoid some of the supply chain delays because you are able to purchase in advance, and then when you are finally getting ready

for maybe the second in a class or something like that you have got a huge percentage of the material together.

I have heard very strong pro block buy testimony from the SECNAV in the past, but do you see it the same way, Secretary Stefany?

Mr. STEFANY. Yes, sir. Block buy really enables, whether it is a second, third, or fourth, it takes that whole “having the right material at the right time” issue out. That is one of our key constraints we have right now in getting ships and aircraft out on time is getting the material there when we need it. So block buy totally facilitates making sure the material is not an issue for following units.

Senator KAINE. Great. Let me ask about the SIOP. Is the fiscal year 2024 budget and what we are thinking going forward, are we putting enough resources in the SIOP to enable you to accomplish what you need to?

Mr. STEFANY. Yes, sir. For the major projects, fully funded through the FYDP, so that is really very, very helpful. Then what we call the optimization plans or the area plans, that analysis started last year, this year, and next year, going through that process, and we have sufficient funds in the budget to meet the need as those reports come out on how we optimize each of the shipyards.

Senator KAINE. Admiral Conn, if I remember right from my first round of questions, the \$300 million that you need for the kind of current fixes on the bases where there is seismic activity, that is in the unfunded priorities list, right?

Vice Admiral CONN. Yes, sir, it is.

Senator KAINE. Okay. Let me ask you, finally, a question about Navy aviation. As I understand the Navy’s striker fighter shortfall estimate has fluctuated pretty widely over the past few years. In simple terms there are two pieces to solving strike fighter inventory gap—buying new aircraft and extending service life of existing. The budget does not include buying new F/A–18E/F aircraft, only F–35B and F–35C.

What the latest assessment of the strike fighter shortfall?

Vice Admiral CONN. Sir, we got to a deficit peak of 31 in fiscal year 2027, and we go to zero by 2031.

Senator KAINE. So the deficit hits its peak in 2027—

Vice Admiral CONN. Yes.

Senator KAINE.—but then down to zero by 2031.

Vice Admiral CONN. That is correct.

Senator KAINE. Then let me ask you on pilots and maintainers. The Air Force has been experiencing significant shortfalls in both. I mean, everybody is having a hard time hiring the people they need, and some of our pilots and maintainers have a lot of other options. Have you seen, in the Navy and Marine Corps, shortages in the pilots and maintainers, and if so what are you doing to try to counter that?

Vice Admiral CONN. We are in competition for the air crew and we are in competition with the airlines that are hiring. We have been here before. Through the bonus structures and whatnot, I do not have particular insight of how well the bonus or the input metric, what are the outcomes. I do not have any insight on that, sir.

We do, in CNATRA [Chief of Naval Air Training], the aircraft, we had some trouble with the T-45s, with the engine, with that engine. The aircraft will be back up to our levels prior to the engine problem in April. We are going to continue to ramp up and probably meet in excess of 90 percent of the requirement for the year, and the maintainers, I think retention as well. But in terms of our ability to recruit talent and retain talent and talk conversations with the Chief of Naval Personnel, we are going to have our challenges in meeting some of our recruiting goals.

Senator KAINE. In many of the MOSs [Military Occupational Specialties] in the military—we had a full committee hearing on just recruitment and retention about 2 weeks ago, and most of the services were coming in with pretty positive message on the retention side, and most were coming in with some real challenges on the recruiting side. But I would think in the pilot and maintainer space the retention challenge is very real. I mean, the airline industry sort of went flat on its back during COVID, but it is really coming back strong now. So in periods where you see that ramping up then the competition for your folks is pretty intense.

Vice Admiral CONN. Sir, I agree with that. I mean, people join the Navy for a lot of different reasons. They stay in the Navy because they want to be on a winning team, and they stay in the Navy because they think they are making a difference. They enjoy the job. They like the people they work with. But what we need to continue to go after is some of those quality-of-life aspects that the Secretary of the Navy is very hot on.

Senator KAINE. Well, there was good testimony about that even today with the SECDEF [Secretary of Defense] and the head of the Joint Chiefs about some aspects of the budget. You mentioned them, Senator Stefany. You know, investing in a parking garage does not sound like a great quality-of-life thing, but if you are a ship that is in drydock and you are having to walk a mile across a construction site to and from every day, and it is hard to find a place to park near, that is an agitator. When you are on a berthing barge that is old, and the quality of it is not high, and there is not great internet access on it, that is a real issue for people. It is about readiness, it is about retention, and it also can exacerbate or create mental health challenges that we all, I think, are committed to dealing with.

So, listen, I appreciate this hearing today. Good candid dialog back and forth. My Committee Members are very, very focused on this Committee. We look forward to meeting again, and with that the hearing is adjourned.

[Whereupon, at 4:22 p.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

 QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

NAVY AND MARINE CORPS INTEGRATION

1. Senator SULLIVAN. Mr. Stefany, in your testimony you stated the [3d Marine Littoral Regiment and Task Force 61/2] will actively participate and support operational concepts, including Distributed Maritime Operations, Expeditionary Advanced Based Operations, and Stand-in Forces. As I have stated before, the success of Marine Corps Force Design 2030 is in large part based on the Navy's buy-in. Will the Department of the Navy release any updated documentation this year which clearly articulates how the Navy will support the Marine Corps in Distributed Maritime Operations, Expeditionary Advanced Based Operations, and Stand-in Forces?

Mr. STEFANY. The Navy and Marine Corps continue to lead Joint and Coalition forces through integrated deterrence and remain postured to adapt to emerging threats as demand for our naval capabilities continues to increase. Last July the CNO released an updated Navigation Plan, aligning our priorities to the 2022 National Defense Strategy (NDS). In this document, the CNO states that Naval Forces will leverage warfighting concepts including the Joint Warfighting Concept (JWC), Distributed Maritime Operations (DMO), the concept for Stand-in Forces (SIF), Expeditionary Advanced Basing Operations (EABO), and Littoral Operations in a Contested Environment (LOCE) to persist forward, prevail in conflict, and end hostilities on favorable U.S. terms.

Due to the rigor associated with developing or revising Navy directives I am not able to provide an update on any pending CNO directives, but the Naval Board continuously seeks ways to improve Navy-Marine Corps integration. The PB24 budget request is in alignment with the Secretary of the Navy's priorities, and enables the One Navy-Marine Corps Team to continue strengthening our maritime dominance, building on our culture of warfighting excellence, and enhancing our strategic partnerships.

SAN ANTONIO-CLASS AMPHIBIOUS SHIP

2. Senator SULLIVAN. Mr. Stefany and Vice Admiral Conn, I want to revisit the *San Antonio*-class LPD-17 Flight II Warship, which is the Marine's Corps number one unfunded priority by the way. Vice Admiral Conn, in your testimony you described the LPD-17 as an essential component of the amphibious warfare ship inventory. During the annual McAleese Conference, the Commandant doubted the Navy's fear that purchasing a single ship in fiscal year 2025 is not going to drive the price down or make it more competitive. As the Commandant stated, the initial production of a ship always has a learning curve and stopping production now is only going to increase the price curve. The *San Antonio*-class Landing Platform, Dock LPD-17 Flight II is a critical component of the Navy and Marine Corps' Amphibious Ready Group, tasked by our Nation with forward-deployed conventional deterrence, humanitarian assistance, and crisis response. This is a capability we are lacking in, as Lieutenant General Karsten Heckl stated last year in front of this Committee. The Marine Corps was unable to respond to the NATO/ EUCOM commander's urgent tasking in 2022 due to existing LPD maintenance and excess capability. How many marines are currently working on the Navy's shipbuilding plan?

Mr. STEFANY and Vice Admiral CONN. I agree that the *San Antonio*-class is a critical component of the Amphibious Ready Group, and amphibious ships in general provide capabilities critical to providing strategic mobility, force projection, and the range to respond across the globe. I will note that there were no Combatant Commander requests for ARGs to support the crisis response in Ukraine or Humanitarian Assistance/Disaster Relief (HADR) operations in Turkey.

As to the shipbuilding plan, it was coordinated across the Department, and was reviewed by senior uniformed and civilian marines including; the Director, Expeditionary Warfare Division of OPNAV, the Deputy Commandant for Combat Development and Integration, the Deputy Commandant for Plans, Policies and Operations, and the Assistant Commandant of the Marine Corps. Prior to final approval, the Secretary of the Navy reviewed the plan with the Commandant of the Marine Corps and the Chief of Naval Operations.

FORCE DESIGN 2030

3. Senator SULLIVAN. Lieutenant General Heckl, what does title 10 require the Marine Corps to do?

Lieutenant General HECKL. Title 10 United States Code, Section 8063 (United States Marine Corps: composition; functions) states that:

(a) The Marine Corps, within the Department of the Navy, shall be so organized as to include not less than three combat divisions and three air wings, and such other land combat, aviation, and other services as may be organic therein. The Marine Corps shall be organized, trained, and equipped to provide fleet marine forces of combined arms, together with supporting air components, for service with the fleet in the seizure or defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign. In addition, the Marine Corps shall provide detachments and organizations for service on armed vessels of the Navy, shall provide security detachments for the protection of naval property at naval stations and bases, and shall perform such other duties as the President may direct. However, these additional duties may not detract from or interfere with the operations for which the Marine Corps is primarily organized.

(b) The Marine Corps shall develop, in coordination with the Army and the Air Force, those phases of amphibious operations that pertain to the tactics, technique, and equipment used by landing forces.

(c) The Marine Corps is responsible, in accordance with integrated joint mobilization plans, for the expansion of peacetime components of the Marine Corps to meet the needs of war.

The following amendments were made in the Fiscal Year 2023 National Defense Authorization Act. Specific amendments are indicated in *BOLD* text.

Fiscal Year 2023 NDAA—Section 1022. Navy Consultation with Marine Corps on Major Decisions Directly Concerning Marine Corps Amphibious force structure and capability.

“The Secretary of the Navy shall ensure that the views of the Commandant of the Marine Corps are given appropriate consideration before a major decision is made by an element of the Department of the Navy outside the Marine Corps on a matter that directly concerns Marine Corps aviation or **amphibious force structure and capability.**”

Fiscal year 2023 NDAA—Section 1023. Amphibious Warship Force Structure.

(a) The Navy, within the Department of the Navy, includes, in general, naval combat and service forces and such aviation as may be organic therein. The Navy shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations at sea. It is responsible for the preparation of naval forces necessary for the effective prosecution of war except as otherwise assigned and, in accordance with integrated joint mobilization plans, for the expansion of the peacetime components of the Navy to meet the needs of war.

(b) The naval combat forces of the Navy shall include not less than 11 operational aircraft carriers **and not less than 31 operational amphibious warfare ships, of which not less than 10 shall be amphibious assault ships.** For purposes of this subsection, an operational aircraft carrier **or amphibious warfare ship** includes an aircraft carrier **or amphibious warfare ship** that is temporarily unavailable for worldwide deployment due to routine or scheduled maintenance or repair.

Add new subsection (g)—**(g) In this section, the term ‘amphibious warfare ship’ means a ship that is classified as an amphibious assault ship (general purpose) (LHA), an amphibious assault ship (multi-purpose) (LHD), an amphibious transport dock (LPD), or a dock landing ship (LSD).**

4. Senator SULLIVAN. Lieutenant General Heckl, does Force Design adhere to those requirements?

Lieutenant General HECKL. Yes, Force Design adheres to the requirements set forth in Title 10 of the United States Code. The Marine Corps regularly assesses our force structure, capabilities, and readiness to ensure that we can fulfill our obligations as outlined in title 10. Force Design 2030 optimizes Marine Corps force structure to meet the demands the National Defense Strategy and of modern warfare. This plan was developed with the direction and oversight of senior civilian and military leaders.

After the Commandant’s Planning Guidance (CPG) was released in the summer of 2019 and Force Design modernization began, the Marine Corps has conducted over 400 congressional engagements with Members, Professional Staff Members, and staff from personal offices some of which were repeated engagements or deep dives with the same staff. The Marine Corps has averaged more than five congressional engagements a month for the past 3.5 years. Marine Corps leadership values and honors the need for congressional oversight and has actively supported that

lawful requirement. My Command, Combat Development and Integration (CD&I) alone has conducted 209 of those engagements as of April 2023. Of those 209 engagements roughly 30 percent were classified briefs at the secret level and above, we must respect the threat and the associated security classification protocols to safeguard critical capabilities. The remaining 70 percent of those engagements were at the unclassified level to be as transparent as possible in our modernization efforts.

Force Design was also informed by an extensive and continuous review of current and future threats. The Intelligence Community (IC) Annual Threat Assessment continues to highlight the increase in military modernization from the Peoples Republic of China (PRC). The 2023 IC Annual Threat Assessment has identified the PRC as working to field a military by 2027 designed to deter U.S. intervention in a future cross-strait crisis. Furthermore, the 2022 NSS identifies the People's Republic of China (PRC) as the only competitor with the intent and the capacity to reshape the international order. The 2018 and 2022 NDS clearly State the case for change by identifying the Indo-Pacific as the priority theater from a competition and threat perspective.

Force Design 2030 creates a more agile, flexible, and lethal force that is better equipped to operate forward, compete, project power and influence as directed by the National Defense Strategy and other strategic guidance documents. This includes enhancing the Marine Corps' ability to conduct expeditionary and amphibious operations, improving our ability to operate in contested and denied environments, and increasing our capacity to conduct distributed operations with joint and allied partners. These efforts are directly tied to our title 10 requirements of:

"The Marine Corps shall be organized, trained, and equipped to provide fleet marine forces of combined arms, together with supporting air components, for service with the fleet in the seizure or defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign."

Over the past two decades the Marine Corps has been involved in a land campaign as the Nation directed and required. Force Design redirects the Marine Corps to our original mission as a naval expeditionary force in readiness that supports the fleet commanders within the naval campaign. Overall, Force Design intends to ensure that the Marine Corps remains a highly capable and responsive force that can effectively fulfill our obligations under title 10 and other statutory and regulatory requirements.

The Marine Corps has also worked this year to adhere to the amended Fiscal Year 2023 NDAA requirements that require the Department of the Navy to maintain no less than 31 amphibious warfare ships. The current 30-year Ship Building Plan (SBP) does not achieve nor maintain the Fiscal Year 2023 NDAA directed requirement for no less than 31 amphibious warfare ships and does not continue the LPD Flight II program. The Fiscal Year 2023 NDAA and appropriations actions authorized and appropriated advanced procurement funds (\$250 million) for LPD to be procured in fiscal year 2024.

5. Senator SULLIVAN. Lieutenant General Heckl, what does the 2022 National Defense Strategy require the Marine Corps to do?

Lieutenant General HECKL. The 2022 National Defense Strategy (NDS) requires the Marine Corps to be trained and equipped as a naval expeditionary force-in-readiness and prepared to operate inside actively contested maritime spaces in support of fleet and Joint operations to deter adversary aggression. Furthermore, the NDS requires the Marine Corps to divest in legacy platforms that are less relevant and to modernize the force with asymmetric capabilities supported by innovative concepts.

Integrated Deterrence, Section IV, 2022 NDS, page. 8:

Deterrence by Denial. To deter aggression, especially where potential adversaries could act to rapidly seize territory, the Department will develop asymmetric approaches and optimize our posture for denial. In the near-term, we will continue to develop innovative operational concepts and supplement current capabilities and posture through investments in mature, high-value assets. Over the mid-to long-term, we will develop new capabilities, including in long-range strike, undersea, hypersonic, and autonomous systems, and improve information sharing and the integration of non-kinetic tools.

Force Planning, Section VII, 2022 NDS, page. 17:

To enhance our ability to deny aggression, we will improve the speed and accuracy of detection and targeting to deny adversary freedom of action. To mitigate adversary anti-access/area-denial capability, the Department will develop concepts and capabilities that improve our ability to reliably hold at risk those military forces and assets that are essential to adversary operational success, while managing esca-

lation. For logistics and sustainment, we will reinforce our capability to quickly mobilize and deploy forces and to sustain high-intensity joint denial operations despite kinetic and non-kinetic attack and disruption.

Achieving success in these operational areas requires tightly linking our concepts and capabilities for operating forces. The Department will continue to develop operational concepts that realistically expand U.S. options and constrain those of potential adversaries. The Department will explore force employment concepts and capabilities that degrade adversary power projection while weighing crisis stability and escalation risk; integrate new technologies; experiment with creative applications of existing capabilities; and selectively share the most effective asymmetric capabilities with threatened allies and partners.

Building Enduring Advantages, 2022 NDS, page 19:

Transform the Foundation of the Future Force. Building the Joint Force called for by this strategy requires overhauling the Department's force development, design, and business management practices. Our current system is too slow and too focused on acquiring systems not designed to address the most critical challenges we now face. This orientation leaves little incentive to design open systems that can rapidly incorporate cutting-edge technologies, creating longer-term challenges with obsolescence, interoperability, and cost effectiveness. The Department will instead reward rapid experimentation, acquisition, and fielding. We will better align requirements, resourcing, and acquisition, and undertake a campaign of learning to identify the most promising concepts, incorporating emerging technologies in the commercial and military sectors for solving our key operational challenges. We will design transition pathways to divest from systems that are less relevant to advancing the force planning guidance, and partner to equip the defense industrial base to support more relevant modernization efforts.

6. Senator SULLIVAN. Lieutenant General Heckl, did the Marine Corps divest of certain equipment and capabilities to cut cost and invest the savings in capabilities it deemed a higher priority because it assumed defense budgets would not grow to allow it to bring new capabilities online before divesting old ones?

Lieutenant General HECKL. Yes, over the past five President's Budget cycles from fiscal year 2020 through fiscal year 2024, the Marine Corps divested \$18.2 billion of legacy equipment and invested \$15.8 billion in modernization. The Marine Corps adopted a funding strategy based on investing in capabilities to maintain operational relevance, budget constraints, and compliance to strategic guidance. The following table shows the amount of funding divested and invested over the Future Years Defense Program in each of the five most recent budget cycles:

USMC DIVEST TO INVEST (PB-20 TO PB-24)						
(\$B)	PB-20	PB-21	PB-22	PB-23	PB-24	Total*
Divestment	0.7	1.8	5.9	8.7	1.1	18.2
Investment	0.7	1.2	5.9	7.0	1.1	15.8

*Note: Numbers may not add due to rounding

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 to divest of legacy force structures 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. Furthermore, 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.

In the President's Budget 2020 cycle, the Marine Corps reallocated \$0.7 billion by divesting of the AN/TPS-59 Air Defense Radar, AAV7A1 Project Improvement Program, and the MV-22 Aerial Refueling System (VARs). These funds were used to invest in such programs as Ground Based Air Defense (GBAD), F-35 spares and Block 4 modification, nascent Command-and-Control systems, sensors, and communications platforms.

In the President's Budget 2021 cycle, we reallocated \$1.8 billion by divesting of certain ground programs such as the Light Armored Vehicle Program Improvement Project (LAV PIP) and M1A1 Weapons and Combat Vehicle Modification Kits. The Marine Corps also made a 2,300 Active component reduction in end-strength, and unit modifications of Fleet Anti-terrorism teams and Combat Logistics Battalion. The Marine Corps used \$1.2 billion of these funds to invest in Strike/Anti-surface warfare capabilities, network, sensors, intelligence platforms, Air Defense, Ground Combat lethality modernization, and S&T programs.

In the President's Budget 2022 cycle, as part of the overall Force Design 2030 investment strategy, the Marine Corps made our second largest divestment of \$5.9 billion by reducing the Active component end-strength by 5,100, completing our divestments in legacy force structure such as Tanks, Bridging Companies, and Law Enforcement Battalions in addition to reducing Active and Reserve Infantry Battalions, Cannon Artillery Batteries, and Aviation Squadrons. One hundred percent of these divestments were directly used to invest in critical ground-based fires programs such as Navy Marine Corps Expeditionary Ship Interdiction System (NMESIS) and Organic Precision Fires Family of Systems (OPF FOS). Advanced sensor investments included the MAGTF Unmanned Aircraft System Expeditionary (MUX)/Medium Altitude Long Endurance (MALE)—MQ9A, Ground/Air Task Oriented Radar (G/ATOR) and MAGTF Electronic Warfare Ground Family of Systems (MEGFOS). Furthermore, critical ground networking investments were made in our Network on The Move (NOTM) and Marine Corps Enterprise Network (MCEN).

In the President's Budget 2023 cycle, the Marine Corps made our largest divestment of \$8.7 billion with a 744 reduction in Active component end-strength, as well as further reduction to legacy capabilities such as the Marine Corps Security Cooperation Group (MCSCG) and Marine Augmentation Program-Korea (MAP-K) programs and delayed procurement of Joint Light Tactical Vehicles (JLTVs), F-35B Joint Strike Fighters, CH-53K Heavy Lift Helicopters. We also took unique approaches to save resources by reducing capacity during Marine Week, made a 10 percent reduction to Permanent Change of Station (PCS) moves, and a 15 percent reduction to Headquarters Marine Corps (HQMC) staff positions to include Marine Forces Reserve (MARFORES) and the supporting establishment. Nearly all these divestments, over \$7.0 billion, were directly used to modernize critical areas that enable Force Design by investing in multi-domain areas such as Command and Control (Big Data Platform), Counter Air, Counter C5ISR-T, MQ-9A Unmanned Aircraft System (UAS) sensors and enablers, and Anti-Surface Warfare capabilities.

In the President's Budget 2024 cycle, the Marine Corps reallocated over \$1.1 billion from such programs as Organic Precision Fires, Amphibious Combat Vehicles, and Advanced Reconnaissance Vehicles, as well as a 15 percent reduction in the Marine Corps Bands program to eight field bands. All divested funds were directed utilized to invest in critical warfighting capabilities such as Signature Management (YETI), Secure Expeditionary Resilient Position, Navigation and Timing (SERPNT), Light Marine Air Defense Integrated System (L-MADIS), and Tactical Communication Modernization. Aviation investments were utilized to increase Flight Hour Program and the MV-22 nacelle improvement program. Additionally, several Talent Management investments were made, including increased funding for Sexual Assault Prevention and Response programs and the Marine Corps Embassy Security Guard.

After completing five budget cycles with this approach, the Marine Corps does not plan to divest any more capacity or legacy programs. As part of the modernization strategy, the CMC prioritized the identification of risk areas to mitigate near term readiness and installations. The Marine Corps understands that modernization strategies in any organization will not be successful if the Marine Corps:

- fails to resource our major initiatives;
- fails to make the hard choices to align available resources with the strategy's level of ambition;
- fails to effectively incorporate new technologies and identify, recruit, and leverage new talent; and
- fails to reduce the barriers that limit collaboration with allies and partners.

We aim to mitigate these and other risks through ruthless prioritization. The Marine Corps is now at a juncture where the service can no longer accept additional risk in readiness and installations.

7. Senator SULLIVAN. Lieutenant General Heckl, if the Marine Corps had a larger budget, would it make any different divestment or force structure decisions going forward?

Lieutenant General HECKL. 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. The Marine Corps Unfunded Priority List (UPL) identifies areas that would be accelerated if a larger budget was provided.

* Refer to page 11 that identifies the Marine Corps UPL submitted to Congress.

**FISCAL YEAR 2024
MARINE CORPS UNFUNDED PRIORITY LIST**

PRIORITY	ITEM	APPN	LI	#-1	SM
JOINT EXPEDITIONARY WARFARE					
1	(+1) LPD-17 Flight II (LPD-33)	SCN	3010	16	1,712.5
FORCE DESIGN					
2	CH-53K Initial and Outfitting Spares	APN	0605	68	93.0
3	Project 7/11 - Modular Operations Cells	PMC	5132	43	21.1
4	(+2) KC-130J Aircraft and Initial Spares	APN	0416 / 0605	16 / 68	252.9
5	Distributed Common Ground/Surface System-Marine Corps (DCGS-MC) All-Source SCI Workstations	PMC	4767	25	5.1
6	Family of Field Medical Equipment (FFME) Damage Control Resuscitation (DCR) and Damage Control Surgery (DCS) Equipment Sets	PMC	6522	50	11.0
7	(+4) AN/TPS-80 G/ATOR Radar	PMC	4655	19	160.0
8	Satellite Communications Terminal, Network-on-the-Move (NOTM)	RDTEN	0206313M	223	16.3
9	Joint Light Tactical Vehicles and Trailers	PMC	5095	41	206.3
10	Ultra-Light Tactical Vehicle - High Power (ULTV-HP) Purchase	PMC	6545	53	6.0
11	Digital Interoperability (DI) - Marine Agile Network Gateway Link (MANGL) Roll-Up	RDTEN	0605217N	161	78.5
12	Ultra-Light-Weight Camouflage Netting System (ULCANS)	PMC	6670	54	21.0
13	Joint All Domain Command and Control (JADC2) / Testing, Evaluation and Engineering Environment	PMC	4620	17	5.1
14	(+4) F-35B Engine/Lift System USMC Spares	APN	0605	68	122.4
15	USMC MAGTF Defensive Cyberspace Operation-Internal Defensive Measures (DCO-IDM) Suites (MDS)	PMC	4645	29	15.0
16	Marine Corps Cyberspace Environment (MCCE) - Archimedes Program	PMC	4645	35	24.0
17	Joint Marine Innovation Unit (MIU) Fusion and MARFORCYBER Continuity of Operations Site	PMC	5132	43	11.0
18	(+1) KC-130J Weapons System Trainer and Initial Spares	APN	0416 / 0605	16 / 68	36.4
OTHER MODERNIZATION					
19	Demolition Equipment Set, Squad Engineer/Explosive Hazard Defeat Systems	PMC	6520	48	8.0
20	(+3) UC-12W(ER) Beechcraft King Air 350ER with Cargo Door and Initial Spares	APN	0465 / 0605	68	67.5
21	Multi-Terrain Loader - Replacement	PMC	6544	52	10.0
22	H-1 Digital Interoperability (DI) Link-16	APN	0532	37	16.4
23	H-1 Digital Interoperability (DI) Mobile User Objective System (MUOS)	RDTEN	0604245M	112	14.8
MILITARY CONSTRUCTION					
24	P875 Water Reclamation Facility Compliance Upgrade, MCB Kaneohe Bay, HI	MCN	00318875		227.4
25	P1556 10th Marines Maintenance & Operations Complex, MCB Camp Lejeune, NC	MCN	670011556		91.3
26	P258 2D LAAD Maintenance and Operations Facilities, MCAS Cherry Point, NC	MCN	00146258		145.0
27	P982 Consolidated Communication Facility, MCLB Albany, GA	MCN	67004982		64.0
28	P1499 Corrosion Repair Facility Replacement, MCB Camp Lejeune, NC	MCN	670011499		92.5
29	P1546 Amphibious Combat Vehicle Shelters, MCB Camp Lejeune, NC	MCN	670011546		31.9
30	P521 Fire/Emergency Response Station (53 Area) Replacement, MCB Camp Pendleton, CA	MCN	00681521		26.8
31	P100 Unspecified Minor Construction	MCN	64481100		30.0
32	P101 USMC Military Construction Planning & Design	MCN	64482101		48.7
TOTAL >>>>>					3,672.0

It is important to note that budget alone does not determine decisions related to divestment and force structure. Strategic considerations, service priorities, and operational needs also play important roles in these decisions. Therefore, even with a larger budget, the Marine Corps would still need to carefully evaluate our priorities and make decisions based on a range of factors.

8. Senator SULLIVAN. Lieutenant General Heckl, did the decision to divest certain capabilities result from a capability analysis or from a cost analysis?

Lieutenant General HECKL. The decision to divest certain capabilities resulted from a threat informed, strategy driven, concept-based capability analysis. As described in the response to question #6 above, 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 modernize 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. Furthermore, 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.

Threat Informed

The opening forward of the 2019 Worldwide Threat Assessment of the U.S. Intelligence Community (IC) states:

"Threats to U.S. national security will expand and diversify in the coming year, 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. Russia and China seek to shape the international system and regional security dynamics and exert influence over the politics and economies of states in all regions of the world and especially in their respective backyards."

In the same annual threat assessment, the emerging and disruptive technologies, and threats to economic competitiveness section states:

"For 2019 and beyond, the innovations that drive military and economic competitiveness will increasingly originate outside the United States, as the overall U.S. lead in science and technology (S&T) shrinks; the capability gap between commercial and military technologies evaporates; and foreign actors increase their efforts to acquire top talent, companies, data, and intellectual property via licit and illicit means. Many foreign leaders, including Chinese President Xi Jinping and Russian President Vladimir Putin, view strong indigenous science and technology capabilities as key to their country's sovereignty, economic outlook, and national power."

In the same annual threat assessment, the China section states:

"We [The IC] assess that China will continue increasing its maritime presence in the South China Sea and building military and dual-use infrastructure in the Spratly Islands to improve its ability to control access, project power, and undermine U.S. influence in the area. A body of open-source reporting shows that China seeks to achieve effective control over its claimed waters with a Whole-of-Government strategy, compel Southeast Asian claimants to acquiesce in China's claims—at least tacitly—and bolster Beijing's narrative in the region that the United States is in decline and China's preeminence is inevitable. Meanwhile, Beijing almost certainly will continue using pressure and incentives to try to force Taipei to accept the One China framework and ultimately Chinese control, and it will monitor the U.S. reaction as an indicator of U.S. resolve in the region."

"The People's Liberation Army (PLA) continues to develop and field advanced weapons and hardware while honing its ability to fight in all military domains. The force is undergoing its most comprehensive restructuring ever to realize China's long-held goal of being able to conduct modern, rapid military operations based on high technology to assert and defend China's regional and growing global interests. PLA reforms seek to reinforce the Chinese Communist Party's control of the military, improve the PLA's ability to perform joint operations, increase combat effectiveness, and curb corruption. As China's global footprint and international interests have grown, its military modernization program has become more focused on investments and infrastructure to support a range of missions beyond China's periphery, including a growing emphasis on the maritime domains, offensive air operations, and long-distance mobility operations."

The 2023 *Annual Threat Assessment* of the IC states:

"Beijing is working to meet its goal of fielding a military by 2027 designed to deter U.S. intervention in a future cross-Strait crisis. The PLA Navy and Air

Force already are the largest in the region and continue to field advanced platforms that improve China's ability to try to establish air superiority and project power beyond the first island chain. The PLA Rocket Force's (PLARF) short-, medium-, and intermediate-range conventional systems probably already can hold U.S. forces and bases in the region at risk."

Strategy Driven

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 2018 and 2022 National Defense Strategy (NDS) clearly State the case for change by identifying the Indo-Pacific as the priority theater from a competition and threat perspective. China has rapidly modernized and has accelerated its forecasted, out-year modernization objectives. According to the DOD's 2022 Annual Report on China, "the PLA's evolving capabilities and concepts continue to strengthen the PRC's ability to "fight and win wars" against a "strong enemy [a likely euphemism for the United States], coerce Taiwan and rival claimants in territorial disputes, counter an intervention by a third party in a conflict along the PRC's periphery, and project power globally." The report highlights the People's Liberation Army Navy (PLAN) battle force of 355 ships and submarines "that is largely composed of modern, multi-role platforms." Additionally, the report describes China's long-range precision strike capabilities from cruise and ballistic missiles.

Concept Based

The Marine Corps' Expeditionary Advanced Base Operations (EABO) and Stand-in Forces (SIF) concepts meet the 2022 National Defense Strategy (NDS) intent and are theater agnostic. The plan for light, lethal, and distributed forces would be successful in other Combatant Commands (COCOMs), such as European Command (EUCOM) or Central Command (CENTCOM)—and have shown to be successful. For example, Task Force 6½ executed a proof of concept during 2022 in which they provided 6th Fleet Headquarters with real-time Maritime Domain Awareness (MDA). In that effort, Marine forces tested, refined, and validated concepts of employment for MDA and closing kill webs, while also conducting real-world, time sensitive reconnaissance-counter reconnaissance missions. These efforts continue to support 6th Fleet operations as nested within EUCOM and Africa Command (AFRICOM) priorities and have sense turned into a rotational force.

9. Senator SULLIVAN. Lieutenant General Heckl, can the Marine Corps field the same, fewer, or more Marine Expeditionary Units after Force Design 2030 than with the previous force structure (assuming sufficient amphibious ship numbers)?

Lieutenant General HECKL. Force Design 2030 has not changed the number of MEUs the Marine Corps can field; in fact, Force Design 2030 reinforces the need for the continued global employment of this versatile and highly capable unit. The Marine Corps continues to have capacity for seven MEUs. That is, regardless of the availability or readiness of amphibious warfare ships, the Marine Corps has and will continue to field the same number of Marine Expeditionary Units (MEU) even as the service continues to modernize. In the late 1980's, the Marine Corps changed the nomenclature of the Marine Amphibious Units to become the Marine Expeditionary Unit (MEU). Since then, and for the foreseeable future, the Marine Corps will maintain seven MEUs.

However, unrelated to the Marine Corps modernization efforts with Force Design 2030, the Navy's readiness and inventory of amphibious warfare ships do impact the ability of the MEUs to be forward postured and available for Combatant Commander requirements. Over the past 10 years the average operational readiness or availability of amphibious warfare ships has been 46 percent. This challenges the Amphibious Ready Group (ARG)/MEU team to adequately conduct critical pre-deployment training requirements and qualifications to conduct day and night operations at sea. This not only decreases the safety of our forces by reducing proficiency, but also decreases the Flexible Response Options (FDOs) and Flexible Deterrence Options (FDOs) of the Combatant Commanders to have ready and available forces for operational requirements.

During the 1990's the amphibious warfare ship inventory exceeded operational employment allowing adequate time for maintenance, and more materially available ships to surge when required. For example, in 1991 the Department of the Navy maintained roughly 60 amphibious warfare ships while only 37 percent were deployed. However, in the early 2000's the amphibious warfare ship inventory decreased by nearly half while the operational requirements maintained the same. Overtime as the operational demand remained consistent to historical baselines

while inventory decreased, the material condition of amphibious warfare ships has been strained. This has led to common delays of ARG/MEU deployments and provides fewer ready ships to surge if directed.

The 22d, 24th, and 26th MEUs will continue to garrison and deploy from Marine Corps Base (MCB) Camp Lejeune in North Carolina. The 11th, 13th, and 15th MEUs will continue to garrison and deploy from MCB Camp Pendleton in California. Last, the 31st MEU will continue to garrison and deploy from MCB Butler in Okinawa, Japan.

The structural organization of our MEUs will also remain the same and will be comprised of a Command Element (CE), a Battalion Landing Team (BLT) as the Ground Combat Element (GCE), a Composite Aviation Squadron as the Aviation Combat Element (ACE), and a Combat Logistics Battalion (CLB) as the Logistics Combat Element (LCE).

Currently, the 26th MEU is conducting their Pre-Deployment Training Period (PTP) with the Bataan Amphibious Ready Group (ARG) in preparation for their upcoming deployment this Summer. The Artillery Battery within the BLT for the MEU will be organized with a traditional M777 Howitzers platoon and a Force Design incorporated High Mobility Artillery Rocket System (HIMARS) platoon. Throughout the PTP, the battery has been training on new Tactics, Techniques, and Procedures (TTPs) for HIMARS-Tactical Insertion Dynamic Employment (HI-TIDE) that will enable the rapid employment of long-range precision fires after ship-to-shore connectors have maneuvered the assets. This employment concept is an aspect that supports the ability of expeditionary units that can contribute to sea-denial and sea-control operations. Maintaining control of Sea Lines of Communication (SLOC) and the race for key maritime terrain is critical in the current operating threat that has created an Anti-Access, Area-Denial (A2AD) environment through the proliferation of low-cost long-range fires, sensors, and a communications architecture that place U.S. assets at risk. Although Force Design is modernizing, the capabilities resident within the MEU has increased lethality while the core structure and organization of the MEUs remain the same.

10. Senator SULLIVAN. Lieutenant General Heckl, how has the composition and capabilities of the Marine Air-Ground Task Force changed with Force Design 2030?

Lieutenant General HECKL. Composition of the Marine Air-Ground Task Force (MAGTF) remains unchanged from its defined construct as a task organized, air-ground, combined arms formation under a single commander. MAGTFs continue to consist of four core elements—a Command Element, a Ground Combat Element (GCE), an Aviation Combat Element (ACE), and a Logistics Combat Element (LCE). The exact composition and capability inherent in each MAGTF are determined by what is required for that MAGTF's given mission.

Notably, post Force Design 2030, MAGTFs are both more capable and lethal. The pre-Force Design MAGTF was capable of fighting in three domains—land, air, and sea. Today, the MAGTF is capable of fighting in all five domains with significant additional 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 occupation specialties and the establishment of the Marine Information Group (MIG) within the MEF. Furthermore, we have significantly increased the lethality of the Ground Combat Element (GCE) with long range precision fires, loitering munitions, 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 in Active component KC-130C squadrons. The ACE has also increased in our 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.

The most common MAGTFs in the Marine Corps is the Marine Expeditionary Unit (MEU). The composition of the MEU is described in the previous response. However, the composition of how the MEU is spread across the three ship Amphibious Ready Group (ARG) and what capabilities that are within it will be tailored to the threat environment and historical trends of Combatant Commander mission assignments to the ARG/MEU team. Prior to deployments, the ARG/MEU will conduct a 9-month pre-deployment training period (PTP) with various at sea exercises that allow the two commands to build and work on Standard Operating Procedures (SOPs) for assigned Mission Essential Tasks (METs). During at sea periods the ARG/MEU commanders, staff, and major subordinate commands will execute a variety of full mission profile exercises such as amphibious raids, amphibious assaults,

non-combat evacuation operations (NEO), etc. The two commands will also coordinate with Fleet and Joint headquarters in the Combatant Commands that the ARG/MEU is expected to be assigned to during the deployment to coordinate Theatre Security Cooperation (TSC) exercises and receive intelligence briefs to understand the threat environment. Through the combination of the at sea training periods, development of SOPs, understanding of anticipated assigned missions, and the threat environment, the ARG/MEU team tailors what assets are assigned to each amphibious warfare ship within the ARG to be appropriately organized for operational deployment. As such, MAGTFs can and will vary in size and capability according to their assigned or likely missions.

Given its modular organization, the MAGTF remains tailorable, able to receive attached units from other services or nations, such as naval construction battalions, or infantry/armor brigades. In 2016, the 26th MEU with the Kearsarge ARG was operating in the Central Command (CENTCOM) area of operations when the Combined Joint Task Force-Operation Inherent Resolve (CJTF-OIR) was exploring different options for fire support accelerants in support of the fight against Islamic State of Iraq and Syria (ISIS) forces in Northern Iraq. The CJTF-OIR tasked the 26th MEU with sending an artillery battery ashore to provide an Indirect Fire (IDF) capability to support Iraqi Forces in offensive operations to regain control of Mosul. The 26th MEU rapidly tasked organized a force that was comprised of an artillery battery, a reduced infantry company, and critical enablers that would provide specific capabilities for the unit. However, the artillery battery did not have a robust counter fire radar system that was critical for the threat environment. The Army had a AN/TPQ-53 radar system in Kuwait that accurately detects mortars, rockets, and artillery point of origins (POO) and expected point of impact (POI) to rapidly develop a counter-fire mission. The Army also had a Counter-Rocket, Artillery, and Mortar (CRAM) system in Kuwait that provides force protection measures to ground force units from enemy IDF. Both the AN/TPQ-53 and the C-RAM assets were attached to the task organized force that the 26th MEU assigned to the mission. This is just one small example of the flexibility of the MAGTF to rapidly task organize for an assigned mission and integrate within the Joint Force to meet the operational requirements of the Combatant Command.

The recently established Marine Littoral Regiment (MLR) is an example of a MAGTF that has been optimized to its assigned mission. The MLR is organized with a Regimental Headquarters (Command Element), a Littoral Combat Team (GCE), a Littoral Anti-Air Battalion (ACE), and a Littoral Logistics Battalion (LCE). As such, the MLR, as part of the Stand-in-Force, disrupts the adversary in a contested littoral environment through reconnaissance, counter-reconnaissance, and sea denial operations to support the Naval Expeditionary Force's maritime campaign.

When replying to a question during the House Armed Services Committee (HASC) hearing on the Indo-Pacific National Security Challenges. Admiral John C. Aquilino provided the following response when asked about the MLR in this theatre of operations.

“First the Marine Littoral Regiment again, General Berger who came out of MARFORPAC as you know I think was pretty understanding of the threat, the scenario, and what was needed. So, I appreciate his effort to focus on the Indo Pacific problem set. That said, we need to deliver that organization with the capabilities to deliver effects to surface to air, surface to surface, surface to ship. When that force is armed, prepared, and that set of capability, it's exactly what we need in the Indo-Pacific to support the fight.”

11. Senator SULLIVAN. Lieutenant General Heckl, where does the Marine Corps define combined arms in its doctrinal publications? Has that definition been revised since Force Design started?

Lieutenant General HECKL. The Marine Corps defines combined arms in our doctrinal publications, specifically in Marine Corps Doctrinal Publication (MCDP) 1 Warfighting (dtd 4 April 2018). According to MCDP 1, combined arms is “the synchronized and simultaneous application of different arms and elements of combat power to achieve an effect greater than if each element were used separately or sequentially.” In detail the combined arms section of MCDP-1 states that:

“In order to maximize combat power, we must use all the available resources to best advantage. To do so, we must follow a doctrine of combined arms. Combined arms is the full integration of arms in such a way that to counteract one, the enemy must become more vulnerable to another. We pose the enemy not just with a problem, but with a dilemma—a no-win situation.

We accomplish combined arms through the tactics and techniques we use at the lower levels and through task organization at higher levels. In so doing, we take advantage of the complementary characteristics of different types of units and enhance

our mobility and firepower. We use each arm for missions that no other arm can perform as well; for example, we assign aviation a task that cannot be performed equally well by artillery. An example of the concept of combined arms at the very lowest level is the complementary use of the automatic weapon and grenade launcher within a fire team. We pin an enemy down with the high-volume, direct fire of the automatic weapon, making them a vulnerable target for the grenade launcher. If they move to escape the impact of the grenades, we engage them with the automatic weapon.

We can expand the example to the MAGTF level: We use assault support aircraft to quickly concentrate superior ground forces for a breakthrough. We use artillery and close air support to support the infantry penetration, and we use deep air support to interdict enemy reinforcements that move to contain the penetration. Targets which cannot be effectively suppressed by artillery are engaged by close air support. In order to defend against the infantry attack, the enemy must make themselves vulnerable to the supporting arms. If they seek cover from the supporting arms, our infantry can maneuver against them. In order to block our penetration, the enemy must reinforce quickly with their reserve. However, in order to avoid our deep air support, they must stay off the roads, which means they can only move slowly. If they move slowly, they cannot reinforce in time to prevent our break-through. We have put them in a dilemma.”

MCDP 1 explains that combined arms are a fundamental concept of Marine Corps warfare, which involves the integration of various combat kinetic and non-kinetic capabilities. The goal of combined arms, employed with maneuver, “. . . is to shatter the enemy’s cohesion through a series of rapid, violent, and unexpected actions which create a turbulent and rapidly deteriorating situation with which the enemy cannot cope.” Furthermore, MCDP 1 emphasizes that combined arms are not limited to the integration of combat arms but includes other elements of combat power, such as intelligence, logistics, and command and control.

The definition of combined arms remains valid, though the means and methods of employment continue to evolve under Force Design 2030. One of the Marine Corps’ capstone research and development projects in Force Design is the family of integrated targeting cells. The effort accelerates the evolution of combined arms multi-domain formations by fusing operations, intelligence, and fires functions (i.e., Combined Arms) together in a single center, creating the means for Marine units to participate in and control joint fires, while also gaining and maintaining persistent custody of adversary targets. The Marine Corps today now has the ability to fight and contest in all five warfighting domains to include space and cyber. The integration of advanced technological capabilities has increased the lethality of the MAGTF to deter, but also contend against our adversaries in these domains with combat credible formations and capabilities that can provide precision fires at range. Additionally, Force Design investments have prioritized sensing and communication capabilities that enable forward postured formations to detect and track adversaries’ targets and provide the Joint Force with the necessary target data to project combat power into an Anti-Access/Area Denial environment. These efforts will continue to enable maneuver of units, but more importantly the maneuver of Joint Force units and the maneuver of maritime platforms.

12. Senator SULLIVAN. Lieutenant General Heckl, can the Marine Corps still conduct combined arms operations without any tanks and with less cannon artillery?

Lieutenant General HECKL. Yes, the Marine Corps can still conduct combined arms operations without tanks and with less cannon artillery. At its core, the Marine Corps modernization effort is focused on enhancing the ability to conduct combined arms. A key element of Force Design 2030 is developing and employing modern capabilities that contribute to a multiple joint “kill webs.” This approach also improves our ability to leverage non-lethal fires that provide the combatant commander more options in day-to-day competition and pre-conflict deterrence activities. However, we continue to invest in modern lethal fire platforms that provide a more effective capability than legacy systems. This includes legacy systems such as heavy tanks and towed, tubed cannon artillery that lack the precision and range to be relevant in the maritime and littoral battlespaces applicable to our directed pacing threat. See question #20 for breakdown of retained artillery, as part of our kinetic, combined arms capability.

Prior to Force Design initiatives, the Marine Corps focused primarily on kinetic combined arms consisting of surface and air assets making our combined arms capabilities two dimensional. Today, the Marine Corps still maintains the ability to conduct combined arms in the surface, air, and sea domains but we have significantly increased both the kinetic and non-kinetic combined arms capabilities in the cyber and space domains creating a multi-domain capability. Regardless of what assets are utilized to employ combined arms, they will only be as effective as the Command

and Control (C2) architecture that is designed to enable the execution of the assets. Therefore, Force Design has focused significantly on organizing, training, and resourcing the MAGTF to effectively conduct MAGTF C2 at echelon and rapidly transition across the competition continuum to enable all-domain joint and combined kill webs. To do this we must transition from a legacy, air-land battle paradigm to a 21st century, all-domain, joint single battle mindset. We can no longer accept multiple, disparate C2 systems optimized for single-domain awareness bound by analog/human-speed processing. There are a variety of ongoing efforts to evolve the Service's C2 capability to conduct all domain operations, enable kill webs, and further expand our value to the joint and combined force.

Our Marine Air Command and Control System remains the exemplar for the Service's evolving C2 ecosystem and has showcased an innovative capability to enable kill webs across multiple domains via the Multi-functional Air Operations Center (MAOC). Additionally, we are on track to create the first cadre of kill web subject matter experts via the C2 Interface Control Officer Primary Military Occupational Specialty in 2025.

As evidenced by experiments, exercises, wargames, and analyses, the integration of intelligence, fires, and C2 is at the heart of the targeting cycle and is required to enable and conduct kill webs across multiple domains.

13. Senator SULLIVAN. Lieutenant General Heckl, what engineering and breaching capabilities have been divested?

Lieutenant General HECKL. Through detailed operational planning, historical analysis, and a rigorous Campaign of Learning we made some hard decisions regarding engineering and breaching capabilities. The requirement for a globally responsive Marine Air Ground Task Force (MAGTF) remains imperative. More specifically, strategic guidance has driven us to focus on enabling the Naval Expeditionary Force to rapidly respond to crisis and persist in the distributed maritime operating environment of the Indo-Pacific region. This focus requires a force that is distributed but lethal, low signature, mobile, and sustainable in a forward environment. The equipment we field to our Marine forces needs to match those force attributes, and many of our legacy engineering and breaching capabilities were not appropriate to enable this responsiveness. Our legacy engineering and breaching capabilities were designed for land-centric campaigns with mechanized and motorized forces that we experienced in the Central Command (CENTCOM) area of operations over the past 30 years.

Based on analysis, wargaming, and experimentation the Commandant concluded in 2020 that the Marine Corps' inventory of bridging platforms—Armored Vehicle Launched Bridge (AVLB), Medium Girder Bridges (MGB), and Improved Ribbon Bridges (IRB), were too heavy and slow to be relevant in modern operations. For reference, the AVLBs, MGBs, and IRBs all require large black-bottom commercial sealift or Maritime Prepositioning Ships to get to the fight, requiring permissive off-load at seaports and significant preparation time to prepare for onward movement to support maneuver. During the opening land conflict of the 2003 invasion of Iraq, maneuver forces routinely outpaced supporting assets such as heavy logistical assets, bridging, and breaching capabilities. The tempo and threat environment of the future operating environment renders these heavy capabilities much less relevant, particularly considering the limited quantity of systems and the significant requirements for large shipping and aircraft to move these capabilities into position across a maritime theater. The Marine Corps and Army are working collectively with industry to develop a more suitable lightweight, scalable tactical bridging platform that can be transported on current Joint Light Tactical Vehicles (JLTVs). The Marine Corps is currently awaiting delivery of three test vehicles for experimentation within our engineer formations.

We retain our capability to do nonstandard bridging. Marine engineers are receiving enhanced training in the classification, design, and construction of non-standard bridging using locally available resources to enable light motorized and mounted maneuver. On a frequent basis, marine engineers are used for theater security cooperation and for support to other government agencies to construct non-standard bridges, which continues to build their experience with the use of local materials. Additionally, marine engineers also employ rope bridges to enable dismounted maneuver.

Marine forces still require a capability to conduct tactical bridging for maneuver and mobility; however, the characteristics of this bridging are lighter, more scalable, and employable by non-specialized units. From this change in requirements, we are researching and identifying new bridging options, as well as enhancing the training of our engineers to construct non-standard bridging using locally available or procurable materials.

Breaching remains a critical capability to support maneuver, however with the decision to divest the M1A1 main battle tank, the Marine Corps also divested the Combat Engineer M1150 Assault Breacher Vehicle (ABV) as well as associated force structure. The ABV is built upon the M1A1 chassis which presents significant embarkation and debarkation challenges for amphibious and littoral operations. As with legacy bridging solutions, the ABV requires black-bottom shipping or Maritime Prepositioning Ships to get into the theater. This limitation restricts the ability to even get the ABV to many of the locations where we will be operating across the Indo-Pacific region or as a 911 Force in Readiness. With the divestment of tanks, this heavy breacher vehicle was no longer relevant to support maneuver.

14. Senator SULLIVAN. Lieutenant General Heckl, can the Marine Corps still breach mine fields, conduct route clearance, and cross water obstacles using organic equipment?

Lieutenant General HECKL. Yes, the Marine Corps can still breach minefields, conduct route clearance, and cross water obstacles using organic equipment and enhanced tactics, techniques, and procedures more aligned with the lighter, highly mobile, and low signature maneuver capabilities required to survive in a contested operating environment.

Breaching consists of four sequential activities: detect, reduce, mark, and proof mined areas and obstacles. The Marine Corps can detect and mark explosive hazards by hand and still explosively create lanes through minefields and mark those lanes. Marine engineer battalions remain equipped with the man-portable Anti-Personnel Obstacle Breaching Systems (APOBS) for clearing 45m lanes for foot-traffic, as well as with the trailer mounted M58 Mine Clearing Line Charge (MICLIC) for clearing up to 100m vehicle-capable lanes.

Through large land battles in CENTCOM over the past 20 years, route clearance capabilities have erroneously become synonymous with large Mine Resistant Ambush Protected (MRAP) vehicles. In 2007, Secretary of Defense Robert Gates initiated the MRAP Task Force to rapidly procure the Department of Defense's highest priority program to meet the need of the Improvised Explosive Device (IED) threat in the Central Command (CENTCOM) theater. These vehicles were a critical asset during a prolonged land campaign against an inferior adversary that relied on improvised capabilities and saved many American lives.

Today's threat environment is characterized by great power competition with multiple peer adversaries that maintain advanced threat capabilities that put large, heavy, high-signature vehicles at risk. Furthermore, the size of these vehicles requires heavy sealift or airlift capabilities to get into the region, which limits the global responsiveness demanded of our Marine Forces as America's Force in Readiness. Even the employment of these 18-ton vehicles is limited on the unimproved roads across the landscape of archipelagos in the Indo-Pacific region. In 2021, the Marine Corps divested of mounted route clearance capabilities that used 18-ton Mine Resistant Ambush Protected (MRAP) vehicles as base platforms.

Currently, we are investing in the development of lighter route clearance capabilities; using unmanned air and ground platforms intended to detect and neutralize landmines and IEDs from a safe distance (i.e., outside the serious injury zone around the mine/IED). Between fiscal year 2023 and fiscal year 2028, \$80M will be invested into these emerging capabilities. One of these capabilities is the Littoral Explosive Ordnance Neutralization (LEON) program of record designed to provide an initial organic Marine Corps counter-mine capability from shallow water through the beach zone. Derived from a 2019 Rapid Statement of Need (RSON), the program fields a family of systems (FoS) that enables Explosive Ordnance Disposal (EOD) Marines to detect and neutralize underwater explosive hazards from standoff distances with robotic and autonomous platforms. When fully operationally capable, this FoS complements Navy Mine Countermeasure (MCM) capability and capacity, enhances multi-domain awareness, and ensures the maneuver, protection, and sustainment of the Naval expeditionary force. In the interim, marine engineers will continue to use hand-held detectors and sickle sticks to execute route sweeping operations and use combinations of emplaced charges and remote detonation techniques to sympathetically detonate explosive hazards to clear routes for smaller, light maneuver forces.

The Marine Corps divested manufactured assault and support bridging and rafting platforms, primarily due to size, weight, signature, and limited mobility. The Marine Corps' inventory of bridging platforms—Armored Vehicle Launched Bridge (AVLB), Medium Girder Bridges (MGB), and Improved Ribbon Bridges (IRB)—all require large black-bottom sealift or Maritime Prepositioning Ships to get to the fight, requiring permissive offload at seaports and significant preparation time to prepare for onward movement to support maneuver. These limitations in transport

are not compatible with the mission profiles and globally responsiveness required of America's 911 Force.

We retain our capability to do nonstandard bridging. Marine engineers are receiving enhanced training in the classification, design, and construction of non-standard bridging using locally available resources to enable light motorized and mounted maneuver. On a frequent basis, Marine engineers are used for theater security cooperation and for support to other government agencies to construct non-standard bridges, which continues to build their experience with the use of local materials. Additionally, marine engineers also employ rope bridges to enable dismounted maneuver. The Amphibious Combat Vehicle (ACV) and Light Armored Vehicle (LAV) are both capable of swimming across wet gaps if depth, current, and bottom conditions allow. Moreover, the High Mobility Multipurpose Wheeled Vehicle (HMMWV), the Joint Light Tactical Vehicle (JLTV), and the Medium Tactical Vehicle Replacement (MTVR) can negotiate limited water obstacles with appropriate fording capabilities of up to 60 inches. To ensure that the Marine Corps is capable of expeditionary MAGTF operations globally, Marine Corps is working with the Army and Defense Industry to develop a lightweight, scalable tactical bridging capability which can be transported on current Marine Corps Tactical Vehicles (i.e., JLTV). The Service is currently awaiting delivery of three test vehicles for experimentation with our engineer formations.

15. Senator SULLIVAN. Lieutenant General Heckl, are Stand-in Forces viable without the Light Amphibious Warship/Landing Ship Medium?

Lieutenant General HECKL. All forces are dependent on Joint, Naval, and organic mobility assets to maneuver throughout the battlespace. However, the current programmatic timeline for LSM does not support delivery to support (1) Marine Regiment until fiscal year 2033. Until the LSM becomes fully operational, the service has explored other interim solutions to support SIF. The interim planned composition is (2) T-EPPFs, (5) SLVs, and (5) LCUs until the Medium Landing Ship becomes available to support (1) Marine Regiment in fiscal year 2033. T-EPPF is a Military Sealift Command (MSC) operated vessel with capabilities comparable to LSM during competition (speed and lift capacity) but faces challenges in higher sea states and has no shore-to-shore capability. SLVs operated by contracted civilian crews provide shore-to-shore capabilities comparable to LSM during competition. Moreover, emerging platforms such as the stern landing vessel (SLV) and ancillary surface connectors (ASC) will be experimented with to determine the tactics, techniques, and procedures needed to best support the SIF. LCUs provide marine elements of the SIF with proven tactical mobility that does not necessitate T-EPPF or SLV but will face adequate crewing and maintenance challenges.

Once LSMs are available in fiscal year 2033, the Marine Corps current requirement is (35) Medium Landing Ships (LSMs). The LSM requirement stems from a minimum of (9) LSMs required to support (1) Marine Regiment. Our SIF required maritime mobility for (3) Regiments. To ensure (27) LSMs are available for these forces at any given time, procurement includes (8) additional LSMs due to routine maintenance cycles at an 80 percent readiness rate. The LSM provides the Stand-in Forces (SIF) maneuver options and connect logistics webs within contested spaces. The LSM will be an important littoral maneuver platform that supports the SIF while forward deployed, engaging in campaigning activities that assure integrated deterrence. The LSM is capable of transporting personnel and equipment within an archipelagic environment such as the first island chain (1IC) where there is limited access to ports or runways.

III Marine Expeditionary Force (MEF), as the service's only forward postured MEF, is uniquely suited to validate new concepts such as Expeditionary Advanced Based Operations (EABO) and Stand-in Forces (SIF). As an element of the SIF, III MEF supports naval, joint, and allied and partnered forces with agile, capable, and lethal forces able to operate across the competition continuum. Forces Stand in during competition alongside partners and allies, are forward postured to respond during crisis, and are capable of seizing and defending key maritime terrain during conflict while maintaining critical target data and maritime domain awareness for the Joint Force to project fires into the battlespace.

One of the most significant contributions the SIF makes to the Joint Force is the ability to sense and make sense of the environment by creating maritime domain awareness. Task Force 61/2 demonstrated this capability in the European Command (EUCOM) area of operations with a Navy-Marine Corps integrated team. TF 61/2, led by a Marine General Officer with a task-organized staff was integrated into the U.S. 6th Fleet Headquarters in Naples, Italy, and executed a combined joint exercise, planned operations for various ARG/MEU teams in multiple locations throughout the theater, and improved Maritime Domain Awareness for the Fleet Com-

mander and partners and allies. This proof of concept has now transitioned into a rotational headquarters that aligns forces under a Naval Amphibious Force Commander to orchestrate a wide range of integrated operations, from exercises to contingency planning.

Although III MEF demonstrates the ability to operate as a SIF without the Medium Landing Ship (LSM), the service and III MEF have registered the requirement for both inter-(operational) and intra-(tactical) mobility.

16. Senator SULLIVAN. Lieutenant General Heckl, what percent complete would you estimate Force Design is?

Lieutenant General HECKL. Force Design is happening now. We are done divesting. Force Design is happening now. As with all modernization initiatives across the DOD, optimization strategies are not conditions based and do not have a set end date. Modernization strategies are an ever-evolving process tied to the changing character of war that adapt and maintain pace with the threat environment with the objective of creating a warfighting advantage that ultimately deters conflict but is prepared to prevail if directed. It is our obligation to continue modernization of the force as the threat continues to evolve.

In 2014, Commandant James Amos published *Expeditionary Force 21* (EF21) as a vision for designing and developing the Marine Corps into 2025. During this timeframe the drawdown of forces from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) was taking place and the Marine Corps was refocusing on title 10 requirements of maintaining an expeditionary naval force in readiness. EF21 stated:

“The increased likelihood of operations in the littorals requires a renewed focus on the Marine Corps Title 10 responsibility to be organized, trained, and equipped, “for service with the fleet in the seizure and defense of advanced naval bases.” While this task appeared anachronistic to some during much of the cold war and the years immediately thereafter, it is taking on renewed importance in this emerging security environment. Conflicting claims over portions of the sea and its resources, growing naval competition, and the rise in land-based threats to access are all indicators that future joint campaigns are more likely to be naval in character. The development and proliferation of anti—access and area-denial (A2/AD) capabilities threaten freedom of action at sea and endanger the limited number of U.S. bases overseas. These conditions are remarkably similar to those that existed before and during World War II in the Pacific, but with the added challenge of the increased range and precision of modern sensors and weapons. During that conflict, the ability to establish advanced bases and deny an adversary the use of his bases played a key role in gaining and maintaining air and maritime superiority.”

In 2016, Commandant Robert Neller published the Marine Corps Operating Concept (MOC) that continues to build off EF21 while identifying a path forward that adapts to the changing character of war with the proliferation of technology advancements. The MOC identifies the central problem with the status of the Marine Corps in 2016 as:

“Over the past 15 years, we have been continuously involved in both major combat and crisis response missions. All that time, our competitors have observed and learned much from how we operate. As a result, our future enemies will use that knowledge to oppose us in the physical and cognitive dimensions of conflict. In contrast, we have not been able to adapt at the rate of change required to ensure our success in future conflict. Restoring our advantage requires to us address our central problem—The Marine Corps is currently not organized, trained, and equipped to meet the demands of a future operating environment characterized by complex terrain, technology proliferation, information warfare, the need to shield and exploit signatures, and an increasingly non-permissive maritime domain. The MOC is the starting point to address this problem by reaffirming the primacy of maneuver warfare and combined arms for the 21st century and identifying the critical tasks to develop the future force.”

As with previous Commandants, General Berger’s planning guidance provided his vision and direction for the service over a 10-year period. EF21, the MOC, and Force Design have all identified similar if not identical problem sets to the current threat environment and the changing character of war. Furthermore, each vision prioritized the necessity to adapt to these emerging threats. Over the past 4 years, Force Design has been executing the modernization strategy of the Marine Corps that multiple Commandants have identified in the past. Our next Commandant may provide a similar outlook to 2035 and will continue to modernize the force based

on the threat environment. Overall, given the ever-changing character of war, the Marine Corps must be postured to evolve accordingly. The same goes for the entire joint force. If we, as a Nation, do not modernize, we risk losing our strategic military advantage.

17. Senator SULLIVAN. Lieutenant General Heckl, what capabilities have not reach full operating capability yet?

Lieutenant General HECKL. The Marine Corps began the early stages of Force Design in 2019. As a result, many of the capabilities enabled by Force Design will be in full operating capability (FOC) by 2027. Even more of these capabilities have already reached initial operating capability (IOC) and are in the hands of marines in the field today.

The terms IOC and FOC are used to track contractual obligations between the vendor and the Marine Corps for the delivery of materiel solutions to capability requirements. With each platform being different and with a unique set of requirements, there is no standardized metric for IOC and FOC. The metrics for each program are captured during the drafting of the capability documents process between Marine Corps Systems Command and Combat Development & Integration. It is important to note, platforms and systems do not translate into capabilities until placed into the hands of trained marines. However, many of these capabilities are currently being fielded to units today such as the CH-53K, MV-22B, KC-130J, ACV, JLTV, NMESIS, MADIS & L-MADIS, I-CUAS, FSJ F-35, MQ-9ER, Small UAS, Expeditionary Tactical UAS, G/ATOR, Network on the Move (NOTM), and the Common Aviation Command and Control System (CAC2). Last, the below list of programs that have and have not reached FOC. The projected FOC dates are subject to change.

Program/System	IOC (Y/N)	Projected FOC
MAGTF Unmanned Aerial System Expeditionary / Medium Altitude Long Endurance Increment I	Y	FY25
MAGTF Unmanned Aerial System Expeditionary / Medium Altitude Long Endurance Increment II	N	FY27
Long Range/Long Endurance Small UAS	Y	FY28
Medium Range/Medium Endurance Small UAS	Y	FY28
Short Range/Short Endurance Small UAS	Y	FY30
CH-53K	Y	FY29
KC-130J	Y	FY27
F-35	Y	FY30
Common Aviation Command and Control Small Form Factor	N	FY29
Medium Range Intercept Capability	N	FY28
Marine Air Defense Integrated System	N	FY28
Light-Marine Air Defense Integrated System	N	FY28
Installation Counter Small UAS	N	FY34
Ground/Aviation Task Oriented Radar	Y	FY25
Medium Range Air Defense Radar	N	TBD
Cryptologic Technician Networks	Y	FY26
High Mobility Artillery Rocket System	Y	FY24
Navy Marine Corps Expeditionary Ship Interdiction System	N	FY30
Long Range Unmanned Surface Vessel	N	FY31
Joint Light Tactical Vehicle	Y	FY30
Amphibious Combat Vehicle Family of Vehicles	Y	FY28
All-Domain Reconnaissance Vehicle	N	TBD
Littoral Explosive Ordinance Neutralization Family of Systems	N	FY27
EOD Robotics	N	FY26
Ordinance Exploitation Modernization	N	FY26
Render Safe/Access Tool Modernization	N	FY27
Mounted Explosive Hazard Defeat	N	FY26
Operational Command Post	N	FY26
MAGTF Common Handheld – Dismounted	Y	FY25
Network on the Move-Ground	Y	FY26
Defense Advanced Global Positioning System Receiver with M-Code replacement	Y	FY27
Advanced Electronic Warfare Digital Payload	N	FY26
Constructive Electromagnetic Spectrum Operational Environment System	N	FY25
Spectrum Services Framework	Y	FY27
Multi-Function Electronic Warfare	Y	FY24
Multi-Function Electromagnetic Warfare Ground Family of Systems	N	FY29
Signature Management	Y	FY26
Maritime Targeting Cell Expeditionary	Y	FY25

UH-1Y	Y	FOC ACHIEVED
AH-1Z	Y	FOC ACHIEVED
MV-22B	Y	FOC ACHIEVED
Full-sized Common Aviation Command & Control System	Y	FOC ACHIEVED
Communication Emitter Sensing and Attacking System II	Y	FOC ACHIEVED
Engineer Reconnaissance	Y	FOC ACHIEVED
Family of Medium/Heavy Tactical Trailers & Ancillary Equipment	Y	FOC ACHIEVED
Joint Battle Command Platform	Y	FOC ACHIEVED
Network on the Move-Air	Y	FOC ACHIEVED

18. Senator SULLIVAN. Lieutenant General Heckl, how does the composition and capabilities of the Marine Littoral Regiment differ from other infantry regiments?

Lieutenant General HECKL. The Marine Littoral Regiment (MLR) is an optimized Marine Air Ground Task Force—organized to accomplish a prescribed mission set based on our threat-informed and concept-based capabilities analysis. The MLR and Marine Infantry Regiment differ based on the mission, task organization, and equipment of each organization. 3d Marine Division’s basing and posture in the western Pacific required modernization to align with strategy; importantly, the MLR is key a Force Design output with global applicability. The Marine Infantry Regiment exists within all three Marine Divisions and is tailorable and scalable to support operations across the conflict continuum. Both the MLR and the Marine Infantry Regiment support the Marine Corps’ roles as the Nation’s premier global crisis response force; to seize and defend key maritime terrain; and to support stand-in force operations to enable joint and combined operations. These two different and combat credible formations fight as a Marine Air Ground Task Force (MAGTF) to support naval, joint, and combined operations.

The MLR is commanded by a Marine Colonel. Currently, 3d MLR in Hawaii is one of three planned MLRs task organized within 3d Marine Division, III Marine Expeditionary Force.

Posture changes announced on January 11, 2023, by the United States and the Government of Japan Security Consultative Committee (2+2) ensure the Marine Corps remains ready to address evolving regional and global security challenges. In 2025, the 12th Marine Regiment, an existing unit on Okinawa, will undergo a transition to the 12th Marine Littoral Regiment in accordance with Marine Corps modernization efforts. The 12th MLR will provide a ready and capable stand-in force in the first island chain, prepared to support the U.S.-Japanese alliance, bolstering our ability to support deterrence efforts and respond to contingencies, while the 3d Marine Division Headquarters (3dMARDIV) will provide command and control capabilities.

MLR mission: The MLR, as part of the stand-in force, disrupts the adversary in a contested littoral environment through reconnaissance, counter-reconnaissance, and sea denial operations to support a maritime campaign.

MLR Tasks:

- Conduct Expeditionary Advanced Base Operations
- Support Maritime Domain Awareness
- Conduct Reconnaissance in the Maritime Domain
- Support Littoral Targeting
- Conduct Littoral Transportation Operations
- Conduct Air Direction in Support of Expeditionary Advanced Base Operations
- Command and Control Distributed Maritime Operations
- Plan and Direct Littoral Maneuver
- Plan and Direct Sea Denial Operations
- Support Sea Denial Operations
- Support Operations in the Information Environment

The MLR comprises a headquarters (Headquarters Company, Communications Company, and the Long-Range Unmanned Surface Vessel Company), and three subordinate commands—Littoral Combat Team (LCT), Littoral Anti-Air Battalion (LAAB), and Littoral Logistics Battalion (LLB), each command by a Lieutenant Colonel.

LCT mission: The LCT conducts reconnaissance and counter-reconnaissance, employs, and enables multi-domain fires, and establishes expeditionary sites to support the maritime campaign across the competition continuum.

The LCT is composed of an infantry battalion, a medium range missile battery, and an engineer platoon. The LCT seizes, secures, controls, and defends key maritime terrain to allow expeditionary advanced base operations, conducts bilateral operations with the host nation, and attacks enemy maritime targets with naval strike missiles (NSM) utilizing naval and joint sensors.

LAAB mission: The LAAB conducts anti-air warfare and enables integration of aviation operations with organic and joint fires to support the maritime campaign across the competition continuum.

The LAAB is composed of a low altitude air defense battery and an air control squadron with an air surveillance platoon and air support platoon. The battery is capable of short-range air defense and counter-unmanned aircraft systems. The squadron provides the MLR with multiple scalable command and control nodes providing air control and fires integration throughout the MLR area of operations. Additionally, the LAAB provides airspace surveillance, limited air direction, air control, air intercept control, and coordination of support anti-air and anti-surface fires. The LAAB's capabilities enable joint or combined forces to gain and maintain custody of littoral targets supporting sea denial operations.

LLB mission: The LLB provides tactical logistics and explosive ordnance disposal support to sustain regimental operations across the competition continuum.

The LLB is composed of two direct support combat logistics companies that support the LCT and LAAB, and a general support logistics company. The direct support logistics companies support managing cache sites and connects tactical and operational logistics distribution. The support companies provide functional logistic support across all functions of logistics and classes of supply. The general support logistics company establish logistics support areas for logistics command and control to provide timely support to forward expeditionary advanced base positions.

The Marine Infantry Regiment is commanded by a Marine Colonel. Currently, the Marine Corps has six Active component Marine Infantry Regiments across 1st, 2d, and 3d Marine Divisions.

Marine Infantry Regiment mission: Conduct expeditionary combined arms operations as the ground combat element (GCE) of a Marine Expeditionary Brigade (MEB) sized MAGTF or as part of the division in larger MAGTFs, in the execution of amphibious forcible entry operations and land operations across the range of military operations (ROMO) to defeat the enemy and otherwise influence the operational environment.

Marine Infantry Regiment Marine Corps Tasks:

- Conduct Amphibious Operations
- Conduct Offensive Operations
- Conduct Defensive Operations
- Conduct Stability Operations
- * Provide Forces

The Marine Infantry Regiment comprises of a headquarters company, and three infantry battalions.

Marine Infantry Battalion mission: Conduct expeditionary, offensive, and defensive operations as an element of a Marine Expeditionary Unit (MEU), Marine Littoral Regiment (MLR), or infantry regiment to enable fleet or joint operations.

The Marine Infantry Battalion comprises of a Headquarters and Service Company and three rifle companies.

19. Senator SULLIVAN. Lieutenant General Heckl, does Force Design degrade the Marine Corps' ability to conduct a forced entry operation?

Lieutenant General HECKL. No, but it does make necessary adjustments to ensure the Marine Corps will continue to effectively deter, fight, and win in the future operating environment.

The Marine Corps still possesses (7) Marine Expeditionary Units. Additionally, III MEF is capable of being employed as Joint Task Force headquarters (JTF-HQ) for various missions to include a forcible entry operation. Furthermore, the Commandant in his 2022 annual Force Design update directed the service to develop an-

other JTF-HQ in II MEF to enhance our force offerings to the Combatant Commands.

The Marine Corps still maintains all organic crisis response capabilities that enable the forward posture and rapid deployment of flexible and tailorable forces to the needs of the Combatant Commanders (COCOMs). The Amphibious Ready Group (ARG) and Marine Expeditionary Units (MEU) are the most well-known naval expeditionary Navy-Marine Corps tactical units that are forward deployed at the operational level and can accomplish strategic level engagements.

The Marine Corps routinely trains to forcible entry operations in a number of joint and service-level exercises to include, but not limited to, exercises Talisman Saber, Cold Response, and various Marine Expeditionary Force exercises and Marine Warfighting Exercises (MWXs).

Furthermore, the Marine Corps continues to train for all crisis response missions during the MEUs pre-deployment training period (PTP). Training consists of afloat and ashore training environment that require the synchronization of assets across the MAGTF to accomplish an assigned objective. Our Training and Education 2030 publication describes the investment in Live, Virtual, and Constructive training environment (LVC-TE) that is inherently joint and enables the simultaneous training of geographically dispersed units. This capability will replicate, to the greatest extent possible, the conditions and threats that a commander will experience on tomorrow's battlefield.

When the Marine Corps was completing the withdrawal from Afghanistan and there was a need for forces to support the embassy and non-combatant evacuation operations, the ARG/MEU was a key component of those operations. At a moment's notice, the Marine Corps was able to hold a defensive perimeter and process evacuees while providing a variety of aviation and other assets to support the broader evacuation.

A heel-to-toe ARG/MEU provides the Nation a mobile, multi-mission force that is forward deployed and able to quickly move to any number of crises around the world. A naval crisis response force is significantly more flexible than other land-based crisis response forces because it is less restricted by issues of access, basing, and overflight. The ability to maneuver by sea to the point of crisis makes the ARG/MEU critical to our Nation's ability to demonstrate resolve in a HA/DR mission or to project power in a limited conflict.

In the next two to 5 years, many of our amphibious ships will reach the end of their service life and will cause delays in ARG/MEU deployments. When there are gaps in global ARG/MEU coverage, the Nation risks not having the right assets capable of getting to the crisis in time. If the U.S. is not able to perform this role, our adversaries would be happy to step in with their forces and their messaging. The best way to address the complex situation in Afghanistan and other similarly chaotic areas around the world is to maintain a minimum of 31 amphibious ships to support our ARG/MEU deployments.

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.

The Marine Corps, more than any other service, has a unique nature regarding essential requirements that are subject to the Naval Service budgetary process. For example, the amphibious warfare ship (AWS) statutory requirement includes capabilities that are critical for amphibious ships such as connectors, C4I afloat capabilities, preposition afloat assets, and the Next Generation Logistics Ship (NGLS). All of these are essential to the Stand-in Forces (SIF) and crisis response operations, yet all fall outside the Marine Corps Total Obligation Authority (TOA). We identify the Marine Corps' dependency on the Navy to champion naval requirements. Our Nation is a maritime nation that requires a modern, ready, and forward postured naval force that can deter war and prevail in conflict if deterrence fails.

20. Senator SULLIVAN. Lieutenant General Heckl, what logistics capabilities have been divested?

Lieutenant General HECKL. The limited divestment of logistics capabilities resulted from extensive studies, wargames, and historical analysis through a deliberate Campaign of Learning. The only logistics platforms divested were heavy legacy systems, ill-suited toward operating in a distributed, contested littoral environment. These heavy legacy platforms increased the logistics burden on supported commanders due to their size, transportability, and sustainment requirements. The Marine Corps has retained existing logistics capabilities and is actively capitalizing upon technology advancements and modernization.

The Marine Corps is currently completing initial phases toward optimizing logistics organizational structure, adjusting legacy assets and platform inventories, and

seeking future acquisition to ensure the logistics organizations are prepared to effectively support maneuver forces in distributed and contested environments. Developed against the pacing threat, our logistics capabilities must be transportable, survivable, and sustainable across the spectrum of conflict. Below are some examples of programs divested, or reduced in quantity based on the analytic rigor provided by the Campaign of Learning:

- Logistics Vehicle System Replacement (LVSR) variants designed to support the Improved Ribbon Bridge (IRB) raft composed of (2) ramp bays, (2) interior bays and (2) Bridge Erection Boats. Since the IRBs were divested, these LVSR variants are no longer relevant.
- Six Bridge Companies and associated equipment sets divested in fiscal year 2021 in conjunction with the divestment of Tank Battalions.
- Bridge unit divestments included over 1,050 legacy items such as:
 - Armored Vehicle Launcher Bridge (AVLB)
 - Bridge Erection Sets
 - Medium Girder Bridges
 - Boats and associated cradles
 - Bridge Pallets and Ramp Bays
- Bridge Unit divestment included 1,037 personnel within the fiscal year 2025 FYDP
- Additional heavy horizontal, earth-moving engineer equipment and heavy or medium motor transport capabilities tied to the Bridge and Tank organizations.

Outside of the divestments related to Tank and Bridge units, the Marine Corps has only marginally reduced legacy logistic platforms. Selective reductions of legacy medium and heavy motor transport platforms (Medium Tactical Vehicle Replacement and Logistics Vehicle System Replacement) over the course of the FYDP have been tied to specific unit reconfigurations. High Mobility Multipurpose Wheeled Vehicles (HMMWV) have begun a programmatic sunset synched with the fielding and complete service transition to the Joint Light Tactical Vehicles.

21. Senator SULLIVAN. Lieutenant General Heckl, what logistics capabilities have been added?

Lieutenant General HECKL. The most significant logistics capabilities that have been added, or will be added, are tied to distribution, forward prepositioned stocks, and medical capabilities. In terms of equipment, we are increasing our options for multi-domain distribution to include the replacement of a majority of our fleet of HMMWVs with JLTVs and Ultra-lightweight Tactical Vehicles, and the fielding of the Tactical Resupply Unmanned Aircraft System (or TRUAS). The TRUAS provides low signature distribution capability for small, distributed forces.

Our experimentation with theater mobility in the littorals is underway. Programs such as the Stern-landing Vessel (SLV) and various littoral connectors and enablers ensure that Stand-in Forces are capable as we transition to the acquisition and employment of the Landing Ship Medium.

The Marine Corps is in the process of developing, testing, or procuring enhanced all domain manned and unmanned logistics distribution capabilities. These are critical capabilities to operate in distributed and contested environments. New capabilities include, but are not limited to, development of a new Medium Tactical Truck with hybrid energy attributes and Unmanned Logistics Systems Air (ULS-A) platforms of various sizes, ranges, and payload capacity that autonomously support distributed forces. We have just initiated production of the small ULS-A to be fielded to logistics units this summer.

The future operating environment requires a deep look at core methods of how the Service has closed and employs forces. At an enterprise level, the service's prepositioning program of record requires modernization. It lacks flexibility across the competition continuum, its Maritime Prepositioning Fleet (MPF) is aging and incurs long force closure times. Analysis supports transforming our current program into a Global Positioning Network or GPN. The GPN will integrate afloat/ashore capabilities to enable day-to-day campaigning, rapid response to crisis and contingency, and deterrence. Fully realized, the GPN will dynamically employ multiple ashore sites and a modernized MPF fleet responsive to the joint force commander. It will be regionally aligned yet globally employable and positioned astride key maritime terrain. In fiscal year 2023 to begin this modernization, Additional resources in POM-24 and future budget submissions. Current and requested programmed funding will support initial equipment maintenance, facility leasing, contracted labor, and varying level of consumable support. We intend to establish three GPN sites in the priority theater NLT fiscal year 2027.

Specific to the future concept of operations in the Pacific, expeditionary medicine advances underway will position critical trauma level care closer to the point of injury and enhance patient holding capacity. Examples of enhancement include the Emergency Fresh Whole Blood program that enables walking blood banks and direct transfusions, smaller and more capable expeditionary Damage Control Resuscitation and Damage Control Surgery equipment and advanced team training, to enable greater survivability. The ability to constantly sustain forces across the conflict spectrum is critical and will be accomplished through the Global Positioning Network, a combination of new ashore and legacy afloat prepositioned equipment and supply stocks. Near term investment will complete the realization of several initial Global Positioning Network ashore locations, deemed most essential, while the legacy afloat capabilities and capacity will be tailored to the needs of the future concept of operations.

22. Senator SULLIVAN. Lieutenant General Heckl, where does the Marine Corps define the composition of a division?

Lieutenant General HECKL. Marine Corps Reference Publication (MCRP) 1-10.1 Organization of the United States Marine Corps defines the composition of a division. This reference publication is currently in the final stages of republication in the first time since August 2015. Key updates to this republication will include the additions of the Marine Littoral Regiment (MLR), Marine Corps Information Command (MCIC), Marine Forces Cyber, and updated missions, capabilities, and organizational charts. This publication will also include the Amphibious Combat Vehicle (ACV) for the first time, along with references to Force Design formations like the Littoral Anti-Air Battalion (LAAB), Littoral Combat Team (LCT), and Littoral Logistics Battalion (LLB). Finally, the publication standardizes all doctrinal terms in accordance with the latest Marine Corps and DOD dictionaries.

As the MCRP provides the high-level overview of the current structure of the Marine Corps at the time of publication, it is not a prescribed document. Thus, the three MEFs and the subordinate divisions, wings, and logistics elements will not be identical across the service. For example, 3d Marine Division has always been organized differently than the other divisions (pages 5-2 through 5-4 of the 2015 publication). In this document, 3d Marine Division is composed of only two infantry regiments, one of which is filled by units throughout the Marine Corps under the unit deployment program (UDP). After its full transition with three operational MLRs, 3d Marine Division retains a similar structure but with a different organization of the units within it.

As defined in the publication, the mission of the MARDIV is to provide forces for amphibious assaults or to execute other operations as may be directed. The MARDIV must be able to provide the ground amphibious forcible-entry capability to an amphibious task force and conduct subsequent land operations in any operational environment. The division commander fights by using combined arms tactics and tailors the force to the demands of each mission.

The MARDIV is employed as the GCE of the MEF or may provide task-organized forces for smaller MAGTFs. The MARDIV depends on the MLG as its primary source of logistic support. However, the organic capability of the division must be fully understood and used before requesting support from the MLG. In the areas of combat engineer support and motor transport support, the division possesses the significant capabilities of the combat engineer battalion (CEB) and the truck company of the headquarters battalion.

The capabilities being developed as part of our modernization will ensure all three divisions have the tools needed to accomplish their mission in the 21st century operating environments. The Marine Corps has retained our ability to conduct combined arms at echelon while modernization enhances our ability to serve a critical role in gaining and maintaining custody of targets. Subsequently, this unique ability enables the closing of "kill webs" for the Naval and Joint force. Our continuous experimentation in reconnaissance and counter reconnaissance is informing these capabilities.

Since 2019, the lethal capacity of the Marine Divisions has increased. As measured by crew served weapons and above, to include artillery firing systems, combat vehicles, and infantry weapons systems, the Marine Corps more combat power. By 2030 towed artillery, rockets, and missiles more than double (132 percent) than since 2019.

Active Marine Division Firepower			
Combined Firepower of 1st, 2D, and 3D Marine Divisions			
	2019	2023	2030
Towed Artillery/Rockets/Missiles	156	198	362
HOWITZER, LTWT, TOWED, 155MM	132	132	62
LONG RANGE FIRES (LRF) LAUNCHER		16	48
NAVY MARINE CORPS EXPEDITIONARY SHIP INTERDICTION SYSTEM (NMESIS) LAUNCHER		8	252
ROCKET SYSTEM, ARTY, HIGH MOB (HIMARS)	24	42	
Infantry Weapons	6958	6852	7123
HEAVY MACHINE GUN, 40MM	711	996	936
JAVELIN	288	202	221
LAUNCHER, ROCKET, ASSAULT, 83MM	501	498	483
MACHINE GUN, HEAVY, CAL .50	2354	1148	1124
MACHINE GUN, MEDIUM, 7.62MM	2556	2628	2964
MORTAR, LW COMPANY, 60MM, M224A1	216	198	198
MORTAR, MEDIUM, 81MM, EXTENDED RANGE	210	186	192
MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM (MAAWS)		820	829
SABER SYSTEM	122	176	176
Combat Vehicles	742	624	801
AMPHIBIOUS COMBAT VEHICLE	0	183	362
ASSAULT AMPHIBIOUS VEHICLE	373	127	4
LIGHT ARMORED VEHICLE	267	309	390
LONG RANGE UNMANNED SURFACE VESSEL		5	45
TANK, COMBAT, FT, 120MM GUN	102		
Air Defense Systems		30	26
GUIDED MISSILE BATTERY CONTROL CENTRAL, VEHICLE MOUNTED (ADVANCED MANPADS)		30	0
MARINE AIR DEFENSE INTEGRATED SYSTEM (MADIS) MK1		0	13
MARINE AIR DEFENSE INTEGRATED SYSTEM (MADIS) MK2		0	13

Overall, the Marine Corps remains a combined arms force that will operate across multiple domains. Combined arms in the 21st century now encompasses additional domains such as space, cyber, and information, and new capabilities in each of these domains must be integrated within our combined arms approach. Additionally, the Marine Corps will still sense, communicate, and fire—just in new ways that are effective against technologically advanced peer adversaries.

As it relates to lethal fires, the Marine Corps will retain 7 AC and 6 RC tube-artillery batteries, 14 Medium Range Missile (MMSL) batteries that employs the Navy Marine Corps Expeditionary Ship Interdiction System (NMESIS), and 3 Long Range Missile (LMSL) batteries that employs the Long-Range Fires (LRF) Launcher. Each future AC tube-artillery battery will be structured to have eight pieces of tube artillery vice the pre-Force Design standard of six. Moreover, following the completion of the AC artillery restructure, six pieces of tube-artillery will remain with 3d Battalion, 12th Marine Artillery Regiment. While initially fielded with an anti-ship missile, the MMSL will incorporate the MLRS Family of Munitions (MFOM) allowing a wider array of effects. The NMESIS launcher will fire the Naval Strike Missile, but the Marine Corps is developing a launch unit that will also have the ability to mount and fire upwards of six MFOM. In aggregate, we have increased our ground indirect fires capability.

Legacy systems such as tanks provided a protected, direct-fire capability, their logistics burden, limited range, and vulnerability against modern weapons made them a lower priority, especially in INDOPACOM. The Marine Corps retains other direct-fire capabilities within other platforms such as, the AH-1Z and UH-1Y.

The Marine Corps is pursuing a new capability, the Organic Precision Fires (OPF). This long-range capability provides a javelin type warhead capability with ranges more than 100nm.

These new capabilities at echelon enhance the combined arms effects (both kinetic and non-kinetic) that units can generate. Combining anti-armor (loitering munitions, Multi-purpose Anti-Armor Anti-personnel Weapon System (MAAWS), Javelin and manned aviation) systems along with fielding the Amphibious Combat Vehicle (ACV) provides an ability for armor protected maneuver, fires, and anti-armor capability.

23. Senator SULLIVAN. Lieutenant General Heckl, does the transition of three regiments into Marine Littoral Regiments mean that Third Marine Division is no longer a division?

Lieutenant General HECKL. No, the transition of 3d, 12th, and 4th Regiments into Marine Littoral Regiments does not mean 3d Marine Division is no longer a division. It is important to note that the composition of a Marine Corps Division may vary based on the mission and specific needs of the unit as described in question

twenty. MCRP 1–10.1 serves as a guide for the organizational structure and composition of Marine Corps Divisions.

MLRs in III MEF operate in the INDOPACOM area of responsibility (AOR). The MLRs are purpose built MAGTFs that are designed to support the National Defense Strategy in achieving integrated deterrence. Of note, the MLR's ability to support sea denial, sense, and conduct counter-reconnaissance in support of a maritime campaign has value to all geographic combatant commands. Wargames and experimentation continue to evaluate the effectiveness and efficacy of MLRs in key maritime terrain globally. The Marine Corps' modernization initiatives may provide similar capabilities to other geographic combatant commands. NMESIS Battalions, GLCM Batteries, LAAD Battalions, and MACCs units from I and II MEFs can dynamically task organize to provide MLR capabilities.

While we do not currently plan to create MLRs in I and II MEF or Marine Forces Reserve (MARFORRES), every MEF and MARFORRES are included in our modernization process, to develop the ability to conduct tasks associated with sea denial. I and II MEF remain focused in the near-term on employing MAGTFs to support global requirements and crisis response. These MEFs maintain capabilities across the spectrum of offensive and defensive operations to provide a credible combat capability, ready to rapidly respond globally to all ranges of threats.

The Hawaii, Okinawa, and Guam based MLRs will reach IOC in fiscal year 2023, fiscal year 2025, and fiscal year 2027, respectively. We are fielding Force Design capabilities to MLRs today. (23) Ground/Air Task-Oriented Radars (G/ATORs) were fielded by the end of 2022, (31) will be fielded by the end of June 2023, and (57) will be in the fleet by the end of 2025. (6) Navy Marine Expeditionary Ship Interdiction System (NMESIS) medium missile batteries will be fielded in Q4 fiscal year 2023, providing 3d MLR with 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) providing 3d MLR with more resilient Satellite Communication (SATCOM) capabilities in September of this year.

The Marine Corps will continue our Campaign of Learning (CoL) to validate concepts and capabilities required to maintain pace with the threat environment. Experimentation was invaluable in fiscal year 2022 leveraging Balikatan, Valiant Shield, and Rim of the Pacific (RIMPAC). The Marine Corps will continue to expand MLR experimentation in fiscal year 2023 concentrating on developing 3d MLR in Hawaii in exercises, such as Balikatan, Kamandag, Keen Sword, and Northern Edge. The synthesis of these experiments and training will be the focus of a capability demonstration by 3d MLR in late fiscal year 2023. Experiments will continue in fiscal year 2024 with expanded participation in Valiant Shield and RIMPAC.

24. Senator SULLIVAN. Lieutenant General Heckl, how have the Marine Corps' aviation capabilities changed with Force Design?

Lieutenant General HECKL. Marine Aviation has evolved and changed since Lieutenant A.A. Cunningham reported to the aviation camp in Annapolis on 22 May 1912. Strategic guidance today calls for a Marine Corps able to survive and thrive inside contested spaces and to meet the demands of current and future national security interests.

Our adversaries are modernizing and optimizing themselves by building a robust, lethal force with capabilities spanning the air, maritime, space, and information domains. To face the reality of this ever-changing operating environment, Force Design provides a roadmap for modernizing and optimizing Marine Aviation to deliver lethal, effective, and survivable capabilities to satisfy Joint Force requirements and better support Service needs to organize, train, and equip. The Aviation Combat Element (ACE) remains central to the Marine Air-Ground Task Force (MAGTF), the JFMCC, and the Joint Force.

Marine Aviation contributes to massing distributed effects across the Naval Expeditionary Force (NEF) as the stand-in ACE through the Six Functions of Marine aviation, which consists of Offensive Air Support, Anti-Air Warfare, Assault Support, Air Reconnaissance, Electronic Warfare, and Control of Aircraft and Missiles, and, in the future, the four types of maritime aviation operations: anti-submarine warfare (ASW), surface warfare (SUW), information operations warfare (IWC), and intelligence, surveillance, reconnaissance (ISR) missions.

Today, Marine Aviation consists of fifth generation F-35s, tiltrotor MV-22s, the only marinated heavy lift helicopter in the US arsenal—the CH-53K, H-1s that have been upgraded in lethality and survivability, the venerable C-130J, new MQ-9As, the Ground/Air Task Oriented Radar (G/ATOR) and the Marine Air Defense Integrated System (MADIS). As a result of Force Design 2030, no aviation programs of record were reduced.

The MV-22 has revolutionized military air transport. The revolutionary capability of the tiltrotor, with the optimized organizational construct, enables the Marine Corps to generate unprecedented tempo across our operating environment, allowing commanders to seize and retain the initiative not found in traditional rotary platforms. For the MV-22, Force Design modernization from a 12 to 10-aircraft squadron enables the Marine Corps to extend the service life of this unmatched capability from the mid-2030's to the early 2050's.

From the sea, Marine Aviation deploys and employs off amphibious ships while serving as the ACE of the Marine Expeditionary Unit (MEU). A MEU ACE onboard an amphibious assault ship brings formidable and sustainable aviation capabilities to every corner of the globe.

For the F-35, Force Design modernization directing an organizational construct change to 18 squadrons of 10 F35 aircraft allows the Marine Corps to deploy 10 F-35Bs aboard our MEUs compared to the traditional six AV-8B TACAIR contingent. This offers the Combatant Commanders (COCOMs) a 66 percent increase in TACAIR—5th Gen aircraft—forward deployed and globally engaged with our Marine Expeditionary Units (MEUs) time now. The transition to 5th Gen TACAIR provides the MAGTF, Joint Force Maritime Component Commander (JFMCC), and Joint Force enhanced situational awareness, greater freedom of maneuver, and flexible response options in what was previously considered a denied environment.

Additionally, the MEU ACE can transition to two squadrons of 5th Gen TACAIR aircraft consisting of 20 F-35B onboard an amphibious assault ship operating as a “lightning carrier.” The Navy and Marine Corps demonstrated this critical capability last April when they operated 20 F-35B from *America*-class amphibious assault carrier USS *Tripoli* from March 30 through April 8, 2022, fully exercising the Marine Corps’ lightning carrier concept for the first time in naval history on an amphibious assault ship.

For the CH-53K, as the only maritized heavy-lift helicopter in the DOD in development or production, provides a greater payload capability for Assault Support than any current or emerging rotorcraft at sea level and high-altitude conditions at great ranges. The CH-53K program of record has remained at 200. Achieving Initial Operational Capability (IOC) in April 2022, the CH-53K was approved for Full Rate Production in December 2022 and plans to deploy for the first CH-53K MEU detachment in fiscal year 2025. The CH-53K provides critical expeditionary organic heavy-lift sustainment and mobility capability to the MAGTF, Joint Force, JFMCC, and COCOM.

For the AH-1Z and UH-1Y, Force Design modernization increases the H-1s readiness and provides flexibility for our operational commanders for decades to come. Deploying in detachments as part of the MEU onboard amphibious shipping, H-1s provide a wide variety of capabilities and mission sets and the entire spectrum of conflict.

Additionally, the post-Force Design force construct enables the activation of an additional KC-130J squadron in the Pacific, as well as the additional three squadrons of UAS. The KC-130J provides organic lift and tactical aerial-refueling capabilities to the Marine Corps. At the same time, MQ-9A supports the MAGTF by providing multi-sensor surveillance, maritime domain awareness, and enables the detection and engagement of targets during expeditionary, joint, and combined operations. As a result of Force Design efforts, the KC-130J has increased from 79 in fiscal year 2018 to 86 in fiscal year 2024. Additionally, the MQ-9A has increased as a new program of record to 18 in this coming fiscal year 2024.

In sum, evolutionary change is not new to Marine Aviation; we have led in the past with Close Air Support, Vertical Envelopment, and the development of tiltrotor aviation. Marine Aviation capabilities have expanded since Force Design efforts began in 2019. Across all platforms, modernization efforts have integrated readiness initiatives, incorporated advanced technologies, and ensured the capabilities procured meet or exceed those of their preceding platform. Force Design 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.

25. Senator SULLIVAN. Lieutenant General Heckl, is there anything in terms of aviation the Marine Corps cannot do that it could do with the previous force structure?

Lieutenant General HECKL. No. In fact, Force Design 2030 brings significant additional capabilities to the Aviation Combat Element.

Force Design efforts have expanded Marine Aviation with modernized capabilities, increased readiness, and enhanced lethality across all platforms to meet the demands of global force management, rapidly changing technology, and the ever-

changing operating environment. Historically, the number of squadrons (organizational construct) and aircraft (composition) within aviation units has always evolved inside the Program of Records (POR) to ensure the Marine Corps remains the Nation's crisis response force while modernizing and optimizing the fleet to meet the challenges of the future operating environment. To provide examples of this evolution, between 1990 and 2016;

- 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.
- 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.
- Between 2011 to 2014, MV-22 Active component Marine Medium Tiltrotor Squadrons (VMM) fluctuated from 18 to 16 to 18.
- F/A-18 squadrons changed organizational construct or composition nine times between 1990–2016.
- In 1992, the Marine Corps had only one 18 plane EA-6B Prowler squadron which disaggregated into four squadrons with five planes each.
- In 2007, the Marine Corps planned an all F-35B fleet consisting of 14 squadrons of 10 aircraft and seven squadrons of 14 aircraft.
 - In 2009, we 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 the Program of Record.
 - To support the 2007, 2009, 2011, and 2013 organizational constructs, a POR of 510 F35s would have been required.

Force Design modernization optimized Marine Aviation to operate from austere, distributed locations and across extended distances while providing cutting-edge advantages to the naval expeditionary force through the six functions of Marine Aviation, which consists of: Offensive Air Support, Anti-Air Warfare, Assault Support, Air Reconnaissance, Electronic Warfare, and Control of Aircraft and Missiles. Marine Aviation is manned, trained, and equipped to conduct the six functions and is integral to tomorrow's Marine Air-Ground Task Force (MAGTF), bringing lethal, agile, and sustainable capabilities to compete with, deter, and—if necessary—defeat our Nation's adversaries. These functions have not changed as a result of Force Design 2030.

Last, Force Design not only provides a roadmap for Marine Aviation to modernize and optimize into a more capable agile expeditionary force, but Force Design also sets Marine Aviation on the path to look to the future. For example, Marine Aviation is teaming with U.S. Navy in the development of the Marine Air Ground Task Force Unmanned Expeditionary Family of Systems (FoS). These efforts include acceleration of prototyping and experimentation of TACAIR Collaborative Combat Aircraft and building a common interoperable system control architecture for control of Joint assets. In parallel, Marine Aviation is also exploring the Vertical Takeoff and Landing Family of Systems (VTOL FoS), where the Logistics Connector is the first major effort to support the execution of the Stand-in Force (SiF) through airborne logistics in a contested environment. This portfolio also includes but is not limited to Air Loitering Munitions, an Attack/strike capability, and a future Assault support capability to replace our extant platforms.

In sum, Force Design has expanded, optimized, and enhanced Marine Aviation's ability to provide unique and unmatched lethal, sustainable, and fiscally responsible capabilities to the MAGTF, JFMCC, and Joint Force.

QUESTIONS SUBMITTED BY SENATOR ERIC SCHMITT

OUTSTANDING F/A-18 APPROPRIATION

26. Senator SCHMITT. Mr. Stefany, considering the Navy's significant strike fighter shortfall, I am concerned that the Navy has yet to contract for the 20 additional F/A-18 Super Hornets that Congress appropriated in fiscal years 2022 and 2023. Given this ongoing delay, do you assess that the Navy will still be able to procure the full complement of 20 F/A-18s with the funding that Congress appropriated?

Mr. STEFANY. It is the Navy's intent to award 20 aircraft with the appropriated fiscal year 2022 and fiscal year 2023 funding. We will be able to provide a more definitive answer when we receive pricing information in Boeing's proposal, which we expect in the late June timeframe.

27. Senator SCHMITT. Mr. Stefany, is the Navy experiencing any delays due to similar proposal disputes with prime contractors for any other major platforms?

Mr. STEFANY. For each acquisition, the Navy requests delivery of technical data and computer software to align to the particular acquisition and sustainment strategy or plan. As might be expected, negotiation timelines and the impact to award schedules varies. However, the F/A-18 Lot 46 production negotiation regarding technical data delivery is one of the larger Navy programs in this position at this time.

28. Senator SCHMITT. Mr. Stefany, what is the impetus for the Navy's change in technical data requirements for this instance of F/A-18 procurement considering the Navy's long history of procuring F/A-18s?

Mr. STEFANY. There is no change in the data requirement/rights in this procurement. The Navy sought delivery of the required technical data under previous F/A-18 contracts, which the contractor agreed to deliver, but did not and still has not. This technical data is the minimum required for organic repair capability, which is critical to maintain Fleet assets on our ships or at our Fleet Readiness Centers during wartime or in a contested logistics environment.

29. Senator SCHMITT. Mr. Stefany, is a build-to-print Level 3 Technical Data Package required for every major weapons system that composes the carrier air wing, e.g., MH-60, E-2C, F-35C, CMV-22?

Mr. STEFANY. Technical data package requirements vary by platform, as the mission sets and support requirements are not identical between the platforms. The Navy is only asking for the minimum data required to support organic maintenance, which will be critical in a high end fight or during wartime.

QUESTIONS SUBMITTED BY SENATOR ANGUS S. KING, JR.

LARGE SURFACE COMBATANT ACQUISITION STRATEGY

30. Senator KING. Mr. Stefany, we have worked in a bipartisan manner to encourage the Navy to continue collaborating on the design and production of DDG(X). The best way to avoid first of class problems is to make sure we collaborate, which in turn will save money and achieve the best value for the tax payer. The fiscal year 2023 NDAA section 130 requires maximum collaboration between the two DDG shipbuilders and the Navy.

Is collaboration a priority for the Department of the Navy as you develop the acquisition strategy for DDG(X)?

Mr. STEFANY. Collaboration is a priority for the Navy and the DDG(X) program. As part of Concept Refinement and early adoption of a collaborative Integrated Product & Process Development (IPPD)-type programmatic approach, the DDG(X) program has integrated shipbuilders and other Navy industry partners into the design team as part of a collaborative, multi-disciplinary team. Concept Refinement through Detail Design for DDG(X) will also be accomplished through a collaborative, multi-disciplinary Navy-industry effort composed of the DDG 51 shipbuilders, suppliers, ship design agents and other subject matter experts. In March 2021, the DDG 51 shipbuilders, General Dynamics Bath Iron Works (BIW) and Huntington Ingalls Industries Ingalls Shipbuilding Division (HII), were integrated into the Navy's Concept Refinement team. In fiscal year 2022, the DDG(X) program awarded a Surface Combatant Ship Design Engineering contract to Gibbs & Cox and separate Preliminary through Contract Design contracts to BIW and HII. These contracts are integral to the Navy's plan to fully involve the shipbuilders and industrial base into the DDG(X) design efforts. It is the Navy's intention and plan to maintain this collaborative strategy with both BIW and HII to leverage their expertise and experience in the identification of opportunities to improve the productivity and affordability of the ship, prior to the detail design and construction phase of the program.