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HEARING
ON
NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEAR 2025
AND
OVERSIGHT OF PREVIOUSLY AUTHORIZED
PROGRAMS
BEFORE THE
COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED EIGHTEENTH CONGRESS
SECOND SESSION
SUBCOMMITTEE ON SEAPOWER AND
PROJECTION FORCES HEARING
ON
**DEPARTMENT OF THE NAVY
FISCAL YEAR 2025
BUDGET REQUEST FOR
SEAPOWER AND PROJECTION FORCES**

HEARING HELD
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**DEPARTMENT OF THE NAVY FISCAL YEAR 2025 BUDGET
REQUEST FOR SEAPOWER AND PROJECTION FORCES**

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES,
Washington, DC, Wednesday, April 17, 2024.

The subcommittee met, pursuant to call, at 3:00 p.m., in room 2212, Rayburn House Office Building, Hon. Trent Kelly [chairman of the subcommittee] presiding.

OPENING STATEMENT OF HON. TRENT KELLY, A REPRESENTATIVE FROM MISSISSIPPI, CHAIRMAN, SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES

Mr. KELLY. The subcommittee will come to order.

I ask unanimous consent that the chair be authorized to declare a recess at any time. Without objection, so ordered.

Thank you to our three witnesses for being here today to discuss the Navy's fiscal year 2025 budget request for seapower and projection forces. I would like to also thank the members of the subcommittee for their hard work on this year's NDAA [National Defense Authorization Act] and our staffs on both sides of the aisle.

Today we face an increasingly assertive and powerful China. To maintain America's command of the world's ocean, we must expand our Navy and its capabilities in order to deter and defeat the adversaries.

We have heard the CNO [Chief of Naval Operations] talk about keeping more players on the field, yet this President's budget request sends a different signal, seeking to divest 19 ships, including 10 that haven't reached their expected service life, and purchasing only 6. A diminished Navy emboldens Beijing and undermines America's position as a global maritime leader.

As our subcommittee grapples with critical challenges and strategic decisions in this year's NDAA, our goal remains clear: to ensure our Navy and Marine Corps team is equipped, ready, and capable of defending freedom in the world's ocean.

The Navy recently undertook a 45-day review of its major shipbuilding programs. To be frank, it is unclear exactly what has been achieved. What is clear is that we need a deeper level of self-reflection from the Navy. Today I hope to better understand your strategies for improvement and how you plan to recover schedules with industry.

We continue to face production challenges with our submarines. The decision to include only one Virginia-class submarine in the budget request does not align with the two-plus-one cadence that was predicated under the AUKUS [Australia-United Kingdom-United States] agreement. Sending a strong demand signal is essential for maintaining industrial capabilities and international

confidence in our naval production. Reducing our order from two boats to one in this year's budget does not inspire confidence, nor does it forecast stability to our industry partners or allies.

Turning to surface vessels, the Constellation-class frigates have not been spared from setbacks. Originally slated for delivery in September of 2026, the first ship's arrival has now been pushed to December of 2027, with subsequent ships on an equally tentative schedule. This delay represents a broader trend of inefficiencies that we must address.

This year's 30-year shipbuilding plan presented two, rather than three, future pathways, a step in the right direction, but it is still sure to confuse our industry partners. If I were industry, I would be scratching my head trying to decipher these changing plans. It is critical that the Navy provide a coherent strategy and clear headlights that industry can align with and invest with confidence.

I am pleased to see the inclusion of LPD-33 in the budget request, adhering to the 31 amphibious ship requirement mandated by the NDAA. This is a positive step, and I hope the Navy and Marine Corps can use block/buy authority provided by Congress for the acquisition of future amphibs [amphibious ships].

I would also like to restate that the future LSMs [Landing Ship Medium] must be affordable and producible. We must also be cautious about the tendency to pile on requirements in ship design and production. History has shown us that this often leads to increased cost and extended delivery timelines.

In closing, I look forward to transparency today, addressing recent setbacks, and outlining proactive steps to overcome them. Our national security and the lethality of our naval forces depend on your commitment to resolving these issues promptly.

And, with that, I turn it over to my good friend and ranking member, Joe Courtney, for his opening remarks.

[The prepared statement of Mr. Kelly can be found in the Appendix on page 31.]

STATEMENT OF HON. JOE COURTNEY, A REPRESENTATIVE FROM CONNECTICUT, RANKING MEMBER, SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES

Mr. COURTNEY. Well, thank you, Chairman Kelly. Again, I want to thank the witnesses, Assistant Secretary Guertin, Vice Admiral Pitts, and Lieutenant General Heckl for being with us today. We had an opportunity to speak together last week, and I thank you for your engagement ahead of today's hearing.

The Fiscal Responsibility Act, which passed in May 2023 to avert a default on the full faith and credit of our Nation's currency and bonds, mandated a 1 percent increase in the Department of Defense budget request for fiscal year 2025. Given what is going on in the world, this is a very tight cap, and it has created tremendous downward pressure on all of the services, including the Navy and Marine Corps.

At a time when there is strong consensus about the need to strengthen our maritime and expeditionary forces, our subcommittee has perhaps its most difficult task in years. It is important to note, however, at the outset of this hearing that the Navy's shipbuilding and conversion request cuts even deeper than the

FRA's [Fiscal Responsibility Act] mandated budget cap. To be clear, the Navy's shipbuilding procurement request is not for only a 1 percent increase. Rather, it decreases that line item by 3.4 percent from the fiscal year 2024 enacted level that President Biden just signed into law last month.

This request includes six battle force ships, a sharp deviation from last year's Future Years Defense Plan and 30-year shipbuilding plan. At the same time, 19 battle force ships are being decommissioned, as Chairman Kelly just noted. Of particular note, it seeks to reduce procurement of the Virginia-class submarine program from 13 consecutive years of steady two-per-year cadence down to just one submarine in fiscal year 2025.

This decision to cut procurement in the Virginia program contradicts our own combatant commanders that have emphasized the need for more attack submarines to deter the intensifying threats in the undersea domain. During our posture hearings in the last month, we have consistently heard from combatant commanders from INDOPACOM [U.S. Indo-Pacific Command], EUCOM [U.S. European Command], and NORTHCOM [U.S. Northern Command], Admiral Aquilino, General Cavoli, General Guillot, that their requirements for attack submarines are far higher beyond the number of boats in the Navy's inventory.

Equally concerning is that Congress has already appropriated in the last 2 years nearly \$1 billion in advance procurement for the second submarine that the Navy now seeks to eliminate. This unexpected change in demand signal has and will cause serious reverberations throughout the industrial base in friends overseas who, based on my conversations in those arenas, are, frankly, incredulous. I have already shared those concerns with you, and we will explore that in further depth today.

The Navy's public justification for dropping a submarine is that the sizeable investments in the submarine industrial base, known as the SIB [Submarine Industrial Base] in the budget, will offset its cut in procurement and fleet size. As a member who has secured congressional increases in the SIB starting in 2018, I wholly support the Navy's embrace of that effort. However, I reject the ivory tower theory that SIB investment is a substitute for a consistent demand signal for orders and business. The two enterprises have to occur in tandem.

Over the Easter break, I had the opportunity to meet with several supply chain companies, and the message was clear. Submarine industrial base investments, as welcome as they are, don't pay the bills, and particularly for these firms that doesn't -- particularly for those firms that don't qualify for SIB assistance.

It is important to remember that cutting procurement going back to the 1990s is precisely the reason why the submarine industrial base has eroded over the last 30 years. Indeed, Undersecretary Robert LaPlante testified to that point before the House Armed Services Committee a few weeks ago. The decades of financial trauma the industrial base has experienced due to the Navy's consistently inconsistent procurement profiles is still deeply seared in the supply chain companies and metal trades unions that represent the welders, electricians, machinists, and pipefitters that are hard at work today as we sit here in this committee room.

Mr. Chair, I request unanimous consent to enter into the record two letters from the International Association of Machinists and the Metal Trades Department of the AFL-CIO [American Federation of Labor and Congress of Industrial Organizations] that was addressed to President Biden, urging sustainment of the two-per-year procurement of the Virginia-class submarine program.

Mr. KELLY. Without objection, they are admitted.

Mr. COURTNEY. Mr. Chairman, I will end my remarks on a positive note, which is that as someone who visits the shipyards on a frequent basis, who goes to the job training programs, who goes to the trade schools, who goes to the comprehensive high schools that are expanding career pathways in the metal trades, that goes to the job fairs, to me what I see is that our industrial base is recovering from COVID, that the numbers are going up, the retention is going up, and the output is going up.

Again, this chart, which I brought with me, which I apologize are a bit of a distance away, but it shows that four Virginia-class submarines have been delivered in the last -- in over a 14-month period, starting last year with Rickover, Mr. Norcross' USS New Jersey, the Iowa, and the Massachusetts by the end of this calendar year. And the USS Idaho was just commissioned a few weeks ago, which Mr. Guertin was present for that.

This is not a stagnating industrial base. It is an industrial base which took a big hit during COVID, like all of shipbuilding, but it is not stagnating. It is recovering, and the hiring and the quality of the deliveries in terms of both Rickover in New Jersey were almost at the highest level over the whole course of the Virginia program.

So, again, I think, you know, we should be looking forward and not dwelling too much on the past in terms of what is needed, which our combatant commanders have articulated to us. And, again, we look forward to working with the witnesses over the coming days and weeks to get a good mark, so that we can allow that positive momentum to proceed further.

Again, I just would also associate my remarks with Mr. Kelly regarding the other platforms. I have talked too long already. But, with that, I yield back.

[The prepared statement of Mr. Courtney can be found in the Appendix on page 36.]

Mr. KELLY. Well, I forgot to congratulate my battle buddy on being another year older a couple of weeks ago, and also on the UConn victory for the national championship.

I now recognize today's witnesses. We have the Honorable Nickolas Guertin, who is the Assistant Secretary of the Navy for Research, Development and Acquisition. We have Vice Admiral James Pitts, the Deputy Chief of Naval Operations for Warfighting Requirements and Capabilities, the N9, Office of the Chief of Naval Operations. And Lieutenant General Karsten Heckl, who serves as the Commanding General, Marine Corps Combat Development Command, and the Deputy Commandant for the Combat Development and Integration.

And, with that, it is my understanding there is just one statement. I recognize Secretary Guertin.

STATEMENT OF THE HONORABLE NICKOLAS H. GUERTIN, ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT AND ACQUISITION, DEPARTMENT OF THE NAVY; JOINT WITH VICE ADMIRAL PITTS AND LIEUTENANT GENERAL HECKL

Mr. GUERTIN. Good afternoon. Thank you, Chairman Kelly, Ranking Member Courtney, and the distinguished members of the subcommittee. On behalf of myself, Vice Admiral Pitts, and Lieutenant General Heckl, thank you for the opportunity to appear before you today to address the Department of the Navy's fiscal year 2025 budget request for seapower capabilities.

We would like to thank this subcommittee for your leadership and support of the shipbuilding, naval aviation, and ground programs that maintain maritime superiority and the defense of our Nation.

As the actions over the weekend have shown, support of our allies remains reliant on a superior naval force strategically postured to adapt to constantly evolving geopolitical challenges and threats. USS Arleigh Burke and USS Carney currently assigned to the European Command area of responsibility successfully engaged and destroyed more than 80 one-way attack unmanned air vehicles and at least 6 ballistic missiles intended to strike Israel from Iran and Yemen. We are grateful for the professionalism and skill of our sailors and marines and mindful of their sacrifices of their families at home.

The investments that Congress made in previous budgets enable our success. As we look forward to fiscal year 2025, the actions of the Navy and Marine Corps team reassures international allies and partners, deters potential adversaries, and responds to those who threaten the lives of our sailors, marines, and civilian merchant mariners engaged in lawful international commercial activities.

The Department of the Navy remains focused on the pacing challenge of managing strategic competition with the People's Republic of China, Russia's illegal war of invasion of Ukraine, the Houthi strikes of the Red Sea, and Iranian aggression toward our allies.

The President's fiscal year 2025 budget provides the resources necessary for the Navy and Marine Corps to continue to implement the 2022 National Defense Strategy. 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. It aligns with the Secretary of the Navy's priorities. The budget request enables a One Navy-Marine Corps team to continue strengthening our maritime dominance, building on our culture of warfighting excellence, and enhancing our strategic partnerships.

Thank you for the opportunity to appear before your subcommittee today. Our mission begins and ends with providing the best possible capabilities to the sailors and marines of the fleet, and we look forward to answering your questions.

[The prepared joint statement of Mr. Guertin, Vice Admiral Pitts, and Lieutenant General Heckl can be found in the Appendix on page 41.]

Mr. KELLY. I now recognize myself for questions, and this is for all of the witnesses. Each or all of you can, or just one of you can answer for all.

Considering the cumulative delays the Navy announced in its 45-day review across several shipbuilding programs, what strategies is the Navy employing to mitigate delays broadly? And are these strategies tailored to address unique challenges of each class of ships, including supply chain issues and workforce attrition?

Mr. GUERTIN. So I would like to start with that one, if you don't mind, Chairman. So having led the 45-day study, along with the commander of Naval Sea Systems Command, Vice Admiral James Downey, we built a big team, brought in independent people to make sure we weren't drinking our own Kool-Aid, and really dug deep into where we were, so we could better inform what we need to do differently.

Out of that 45-day study, we identified several areas that we need to improve on, together with our partners in industry. So we looked at things like the national design and engineering workforce, the Navy employees, who understand marine engineering and naval architecture, how we have let that capability for intellectual capacity slide.

And I signed out several memos today directing action against several of these things I am going to talk to you today, and that was the first one. We need to get into a better place, so we can understand how to interact fluidly, flexibly, and efficiently with industry, so we do a better job of building these ships.

The next is refine the acquisition and contract strategies. Some of our contracts didn't provide the right balance of risk and reward to industry and balance that with the needs of the government. So I have asked my contracting officers to take a hard look at the mechanisms we are using for incentive clauses to better match what motivates their behavior and what balances our risk between the two sides of that business agreement between industry and government.

Another action memo I signed out today was to examine the shipyard skilled labor, and think about it as a national asset. These welders, pipefitters, electricians -- pipefitters, they are vital to our ability to provide the resources the Navy and Marine Corps are going to use to defend the Nation.

We need to stop thinking of them as fungible and think of them as strategic assets. And we are going to be working with industry closely to develop the pipelines and think about how we do that work more artfully.

Then, the Navy's workforce posture, besides marine engineering and naval architects, we also need to think more seriously about things like contract officers. We don't have nearly enough of them for the kinds of work we need to do. We need a depth of experience and more players on that field to mention some other aspects of the technical teams we need to be able to do this work artfully.

And the last one that I signed out today was to look for different ways of investments for improving performance and minimize delays. Certainly, the shipbuilding industrial base funding and some of the other resources that have been made available by Congress that we are working with industry to improve how we do that

work has paid great dividends, but we need to think deeper and harder about how we apply those resources.

Mr. KELLY. Mr. Secretary, you did such a good job of answering that question you answered my second part of my question, so I thank you for that. We also met in my office and talked a little bit with all of you guys about the great job the men and women, and the buy-in they have, of being such a great partner with our armed forces and cooperating to make sure that they get to see the final product of the warships that we produce and to see the sailors and marines who are using those and are on the using end of that to take more pride.

And if you can just -- do away with the rest of that question, but if you can just talk a little bit about what we are doing on the PR side to let these men and women who build our Nation's warships, how valuable they are to this Nation.

Mr. GUERTIN. Chairman Kelly, that was a particularly interesting and for me exciting conversation. And I can't make any promises about which ships and where, but I am going to be talking to the Secretary of the Navy about how we can take better advantage of things, like when we do Fleet weeks, how else or where else we might send those ships when they are on those kinds of helping the community, helping the country better understand that these sailors and marines on these ships that are built by American hands are there to defend the Nation and do a better job of helping the American people and the people turning the wrenches and running the weld beads and pulling the cables, so they can see the fruits of their labors in actions with real warfighters. That was a great idea.

Mr. KELLY. Thank you, Mr. Secretary. My next question and final question is, the 30-year shipbuilding plan includes an assumption that the shipbuilders will produce future ships on time and within budget. Yet as we have discussed, history has shown that Navy ships routinely cost more and take longer to build than expected.

What is the basis for the Navy's assumption that the industrial base can reverse these entrenched trends, and what are the consequences to the battle force if they are not successful? What do you realistically think it will take to ensure the Navy has the industrial base, including the workforce, it needs to execute its existing programs?

Mr. GUERTIN. I will turn a little bit that over to my partners here. But I do want to talk about the challenge we have with getting the blue collar trade craft people out on the waterfront building these ships, and in the second-tier supplier shops, with also noting that we have loss of skills, of working hands and minds in the engineering trades for building the work products that these people need to do that work.

Honestly, we are not over the hump on that, but we have made some serious and effective investments in things like workforce training, working with industry to help them see where they need to invest their own resources to improve the quality of work, so they can retain those workers. We are still losing more people than is healthy on a year-by-year basis.

So though we have seen some moderation in the loss of workforce, and I am hopeful for the future, but getting players on the field at the waterfront with trade craft folk is a very important part of making sure we get into a healthier place, so we can stay on time and on budget. We are not all the way there yet, but we have made some very good progress in that direction.

Mr. KELLY. And, Mr. Secretary, just a final comment. I have been on the receiving end of parades after being downrange, and also on the receiving end, and to just see how much America appreciates our warriors when they go downrange and serve, I feel like those warriors have the same amount of respect for those people who are turning wrenches and bending pipes and doing all those things back here, our workforce, I just got -- we have got to figure out how to show them -- we would not have won World War II without Rosie the Riveters, which we recognize.

And so I will tell you, our warriors appreciate our industrial base. I just think we, as Americans, have to make sure that we tap into that patriotism, that the job they are doing is just as important as the end user.

And, with that, I yield to my friend, Ranking Member Courtney.

Mr. COURTNEY. Thank you. Thank you, Mr. Chairman. And I know we have a lot of members here today, so I will try to move quickly.

Secretary Guertin, as I said in my opening statements, in fiscal year 2023 and 2024, Congress provided funding for long lead time material through advance procurement for two boats, and that should have, you know, been fully funded in fiscal year 2025. And in your 2025 budget, you again have more AP [advanced procurement] money. And, again, the theory, as it has been explained to our office and to the professional staff is that this is to sort of help the supply chain companies.

So I think you know that not every supply chain company that feeds into the submarine program is an AP -- is an advance procurement long lead supply company. I mean, a lot of the other pieces of the submarine that are funded through just the full funding of any vessel, you know, may not be in that bucket of advance procurement.

So can you explain what happens to those guys who are not AP supply chain companies when you have cut the hull from this -- in this year's budget? Because there is going -- there is going to be some people left out based on I think even a cursory review of what was sent over.

Mr. GUERTIN. Chairman, there were some very difficult trades that had to be made in putting together a budget. Again, Admiral Pitts may be able to provide some more illumination. But to your point, we are able to lay in money for advance procurement, and it is critically important that we send a strong advance signal and keep it as strong as we possibly can.

The supply chain actors that are perhaps not in that same category, we will have to take a closer look at that one and see what we can do to help that aspect of the industry as well.

Mr. COURTNEY. Well, again, that is not a very encouraging answer for that cohort of folks that -- I guess the other question that I think sort of screams out for an answer is just, what happens to

all of that spending -- sunk costs I would describe -- that the taxpayer has already put into that second boat? I mean, it is my understanding that a reactor would be included in that -- in the long lead items and other ship set. I mean, what I think people are trying to figure out, is this just going to get sort of consumed by a future hull? Is it going to be used for spare parts? Is it going to get sold on eBay? I mean, no one seems to be able to answer that question.

Mr. GUERTIN. So, Senator, the intention is that they would be used in future boats, so -- to keep that pipeline going. To be honest, our shipbuilders are a fair bit behind. We haven't even gotten to the point yet where we are back to building two per year, and we have been buying more than that since. So we have a long ways to go to take advantage of that material in future ship procurements.

Mr. COURTNEY. So, but again --

Mr. GUERTIN. The millennia --

Mr. COURTNEY. -- for someone listening to this exchange, who is, you know, supposedly one of the ones benefitting from the Navy's plan here, I mean, what that says is that, okay, so in fiscal year 2025, you know, they are going to have work. But if you are going to fold it into a future hull, then, you know, basically they are -- it is like they are just going to fall off a cliff in terms of the work is going to stop, whether it is, you know, 2027, 2028, when you decide to have that work consumed -- or that material consumed in a future hull.

So, you know, I appreciate the intent in terms of trying to, you know, protect these folks, but I think the -- what I think the people who, you know, have to analyze this as businesspeople in terms of making investments. That is really not the most encouraging reply.

So one last question to Admiral Pitts. You know, we have known each other since you served up in Groton at the Undersea Warfare Development Center, and I know submariners who have the highest respect for you as a leader.

You know, in my comments regarding the testimony of the combatant commanders this past week in terms of the fact that -- what they are up against right now, particularly as Russia is now deploying more cyber defense submarines, China is just continuing, you know, its output there.

I mean, their characterization that their requirements for attack submarines extend beyond the availability in the inventory, I mean, that has been a refrain for many years. But, I mean, if anything, it is almost getting more acute. Isn't that correct?

Admiral PITTS. Congressman Courtney, thank you for the question. Yes. The demand from our COCOMs [Combatant Commands] is always consistent and is getting even more strident for the need for our submarines as our submarines provide an asymmetric advantage that we will take full advantage of from our Navy, both peacetime and should crisis arise.

Right now we have a requirement for 66 submarines. And in order to achieve those 66 submarines, we need to work with our industry partners to be able to produce two submarines a year. That is really the only way to achieve an ultimate outcome of 66 submarines, and then our continued maintenance work to get our submarines in and out of maintenance, so that we improve our

availability of the ones that we have, is another aspect of getting more players on the field.

Yes, sir. Thank you.

Mr. COURTNEY. All right. Thank you. And, again, for the record, we are hovering right now slightly above 50 in terms of the fleet.

With that, I yield back, Mr. Chair.

Mr. KELLY. I thank the ranking member.

I now recognize the gentleman from New York, Mr. LaLota.

Mr. LALOTA. Thank you, Chairman. Thank you for convening today's hearing to discuss the Department of the Navy's fiscal year 2025 budget request. Today I want to focus on two areas, the submarine industrial base and our amphibious ship programs. I am particularly concerned with the resilience of our submarine industrial base. Despite recent expansions and workforce growth, it faces a significant uncertainty from proposed budget cuts to the Virginia-class submarines.

In parallel, our amphibious ship programs, including the LCU-1700 and medium landing ship programs, are facing significant challenges due to strategic reassessments and delays. While our Nation tries to deter conflict with China, or when it -- should it be necessary, these programs are essential for our ability to project power and to support marine operations globally.

Additionally, Chairman, I will be submitting questions for the record to ensure my district's contributions to national defense are addressed. I think it is crucial that our local industries and workforce are recognized for their role in fortifying our national security.

Assistant Secretary Guertin, good to be with you, sir. Recently, as you heard from my good friend, Rep. Courtney from across the aisle and across the Long Island Sound, he released a memorandum on the status of the submarine industrial base, and that memorandum included many things, including three good high points: one, the upward trends on shipyard capacity; two, upward trends in workforce and supplier development; and, three, the negative consequences of cutting a Virginia-class submarine from the budget.

Sir, are you familiar with this memo? And either way, do you agree with these assertions?

Mr. GUERTIN. I am certainly very familiar with all three aspects of this and deeply, having been in this business for a while, as well as studying it intensely through this 45-day review I mentioned earlier.

We have actually made some significant improvements in capacity. We are not there yet. We need to get back to two boats per year for submarines, and then even get past that up to 2-1/3 boards, so we can honor our commitments with our AUKUS partners. So we are making very good strides in that direction. The improvements we are making to the ship industrial base, including workforce training and investments in capacity, have been bearing fruit, but we have a long ways to go.

As far as workforce, there is some really impressive work going on in dedicated workforce training areas as well as work that has been done with junior colleges and technical colleges that are making --

Mr. LALOTA. I need to cut you off real quick, because I only have about 2-1/2 minutes left.

Mr. GUERTIN. Thank you.

Mr. LALOTA. That is a great start to the conversation. I am a ship guy to your sides as a helo guy and a submarine guy, but I think it works in all of our fields. When you take power off, it takes a lot more power to get back to where you were. And I think that is the overall concern.

The overall concern is it seems like we, as a Nation, have made investment into that industrial base, but now we think -- Mr. Courtney and I certainly think -- now is not the right time to take the power off, because to get back to the power level that we are at will take much, much more.

I want to switch gears in my two or so minutes remaining and ask the general a little more about amphibs. General, can you discuss how the delays and cost challenges in the shipbuilding program, especially in the LCU-1700 program and the medium landing ship program, which is critical but facing schedule challenges, are affecting the Marine Corps' operational strategies, sir.

General HECKL. Sir, thanks for the question. The bottom line is that the LCU-1700 is going to be a vital intra-theater connector. It has been a workhorse in the Marine Corps for decades and decades. And we have just visited -- I was down for the start of new construction on LCU-1710 at Austal. We are excited about that, and we are confident -- obviously, we had some issues with the previous vendor, and I am confident, though, that we are on the right track here, and ASN RDA has been working that hard for us.

So, and as far as the LSM, the medium landing ship, absolutely vital to our intra-theater mobility and maneuver, particularly for the standing force within the Indo-Pacific. And that is going to be an absolute workhorse. So we are not -- right now, you know, we are delayed, but we are building a littoral maneuver bridging solution that I am confident will address the shortfalls. But we are getting the requirement right.

Sir, as you know, we have chartered a couple of civilian industry standard ships that we are experimenting with, and then we will move out. But bottom line is, sir, once we make the decision, we need to do -- we need to keep those -- the LSMs producing on schedule.

Mr. LALOTA. Thanks, General. We have heard the Marine Corps' feedback. We take it seriously. We want to get this right.

General HECKL. Sir, thank you.

Mr. LALOTA. Chairman, I yield back.

Mr. KELLY. And with his time, I will just say there are no strategic policies or pumping the brakes in shipbuilding. I agree with both Mr. Courtney and Mr. LaLota on that.

With that, I recognize the gentleman from New Jersey, Mr. Norcross.

Mr. NORCROSS. Thank you, Chairman. And thank the witnesses for being with us today. I can't tell you how happy I am to hear about the workforce coming from the chairman and ranking member, because as we all talk about getting the equipment in at the right time, and the longest lead item is the human, right? To get a skilled individual.

One of the things that we have known for quite a few years, the impact on the retention issue are the ebbs and flows that go in some of these programs, particularly with shipbuilding. So any pause in that gives us reason for the workers to go somewhere else if they might get laid off. That is something that we all understand.

In addition to those men and women who actually build and construct these ships, these war boats, they have to build them somewhere. So we know that private yards in Newport News, up in Connecticut and Maine, some of them are in pretty good shape. But the vast majority of them are from years gone by, some upwards to 100 years old. I live right across from the Philadelphia Yard and see the challenges that they are facing with where they can build and repair ships.

So we have a Shipyard Infrastructure Optimization Program, the SIOP. The one that -- the cost estimate for Pearl Harbor went from 6 billion to 16 billion. Maybe they expanded the scope or maybe they found conditions, but that is a tremendous amount of money, but we need it. We have to put those in.

So, Mr. Guertin, if you could give us a -- sort of an overall status of the shipyard conditions, and is it ready for -- in the event that we do have an exchange, are they able to repair ships? I mean, I know we have a tough time just doing regular maintenance. And if they are coming back because they are damaged, what is the condition of our yards?

Mr. GUERTIN. So the challenges we face with keeping the ships we have at sea on the schedules we need, and using the repair capability we have, is paramount to the work that we do. The Secretary of the Navy is genuinely concerned with whether or not we have sufficient capacity for ship construction and repair in this country.

His initiatives associated with maritime statescraft, thinking about how do we improve our position for being able to build not just naval ships but commercial ships as well, is an important part of elevating the overall capacity of this Nation to build ships and have those skilled trade craft. Particularly important.

Just a second on improving the resources we have with our public shipyards. The SIOP Program is doing some amazing work of taking care of some old infrastructure as well as modernizing some capabilities and providing better throughput that will improve our ability to repair and produce those ships.

Mr. NORCROSS. So if you were to look at the conditions that we have today, and you gave it a grade just like you used to get in elementary school, what would you give our ability to build these war machines from a shipyard perspective?

Mr. GUERTIN. The ability to build is in the public -- is in the private yards, and their abilities are challenged for the work that we have in hand, although I think we have some great opportunities to improve that capability through both public and private investments. But in terms of --

Mr. NORCROSS. So I misspoke.

Mr. GUERTIN. Yeah.

Mr. NORCROSS. When I say build, maintenance, the things that we are so challenged on, and if we were to have an exchange. What condition would you put our public yards in?

Mr. GUERTIN. To be perfectly frank, I am not sure I would give us a great grade to be able to do more than the ship maintenance that we have today. We are looking at how to improve that capacity, but it is --

Mr. NORCROSS. Go back to elementary school. You got an A, a B, C, D, and F. Where would you put us?

Mr. GUERTIN. Probably a C-plus.

Mr. NORCROSS. Thank you. I yield back.

Mr. KELLY. Now, from Texas, I recognize Dr. Jackson.

Dr. JACKSON of Texas. Thank you, Mr. Chairman. And to our witnesses, thank you for your dedicated service and focus on providing our Navy and Marine Corps with the tools needed to project our military across the globe. I applaud your investments into aviation, surface, and subsurface forces in the industrial bases which support these areas.

The Department of the Navy must be armed to bring the fight and to be postured to deliver lethal blows at a moment's notice. We must get the right forces on, under, and over the sea to compete in the vast distances of INDOPACOM, to patrol and show force in EUCOM, and to thwart Iranian proxy instigations in CENTCOM [U.S. Central Command].

Recently it was reported that the Navy's fleet of CMV-22 aircraft were having issues with the ice protection systems. The reality is that we need these aircraft in the air because they provide capabilities that we can't afford to be without in future conflict. We need the V-22 aircraft to be able to successfully operate in permissive -- in a permissive threat environment at all times day and -- day or night and in all weather conditions.

When the aircraft is flying to an aircraft carrier in the middle of the ocean, the reality is there is nowhere else you can divert to. You really need 100 percent mission success.

Admiral PITTS, how is the Navy addressing the issues with the CMV-22 ice protection systems? And what upgrades will be provided to address this issue? Is there any -- and is there any additional authority or resources that this committee can provide to ensure that these aircraft are upgraded appropriately?

Admiral PITTS. Congressman Jackson, thank you for the question. I know we have an excellent modernization plan to execute as we get more and more of the MV-22s into inventory. What I don't know exactly is the specifics to your question, and I would request to take that as a question for the record.

Dr. JACKSON of Texas. Thank you, sir. And that kind of leads me to my second question, actually. As we all know, the Marines fly the MV-22 variant, and the aircraft is, I believe as you put it before, General Heckl, a game changer for our military. Even our most capable aircraft still need to be upgraded, however, and the MV-22 is no exception.

Since their initial design we have found numerous ways to increase the capability and readiness of the aircraft, whether it be through things like the nacelle improvement program or the Osprey drive system and health information upgrades.

General, can you talk about the upgrades and safety enhancements that are being budgeted for this year for the MV-22 fleet and how important it is that we invest in upgrades like the nacelle improvement program and the Osprey drive system and health information upgrades.

General HECKL. Yes, sir. Thanks for the question, sir. You know, I will tell you that you have cited most of them, but we are also looking at possible property gearbox redesign in Inpoquil. We are looking at property gearbox material component upgrades as well. I would really defer the question to the Deputy Commandant for Aviation, but as a V-22 guy, I know a little bit about it.

But I will simply say, sir, that to your point about how vital this aircraft is, I say it all the time, what other aircraft can fly 1,000 nautical miles at about a 250-mile stop and land without a runway? That is a big deal. And if you put a Herc out in front of me, I am unlimited, right?

So, and I will tell you, sir, the V-22 that I took to combat in 2008 in Iraq, the one we are flying today is leaps and bounds ahead of what I had in 2008. So your point is well taken. We continue to upgrade. The Marine Corps and particularly the Deputy Commandant for Aviation will continue to focus on that. Whether it is safety initiatives or operational capability initiatives, sir, we will continue to upgrade.

I don't know if that gets the answer, sir, but --

Dr. JACKSON of Texas. No, sir. That is great. I appreciate your comment on that. Thank you.

And, with that, I yield back. Thank you.

Mr. KELLY. Now from the Commonwealth of Virginia, I recognize Ms. McClellan.

Ms. MCCLELLAN. Thank you, Mr. Chair.

Mr. Secretary and Admiral Pitts, I have a question about advance procurement, which, as you know, is a critical tool that shipbuilders use to maintain steady supplies of needed parts and equipment and to ensure the stability in the industrial base.

And with that in mind, I have been deeply concerned with the decision by the Navy to delay AP for the Ford-class aircraft carrier, CVN-82, until 2027. I believe this could severely disrupt the shipbuilding planning and construction process and destabilize part of the aircraft carrier industrial base.

Can you elaborate on why the Navy chose to delay AP and how the Navy expects to support the industrial base through the planned delay?

Mr. GUERTIN. So the point you are making about advance procurement is critically important for us all to think about. One of the things we also found in the 45-day study is that the nature of the supply chain is substantially changed. The level of time that we needed in the past has actually expanded, and we need to think about how we do advanced procurement over a longer period, say 3 years, in order to position ourselves to be able to execute effectively when it comes to doing new construction.

Admiral Pitts, do you have anything you want to add in on that?

Admiral PITTS. Secretary Guertin, my addition would be we -- I agree with Secretary Guertin that we have found that we need 3 years of AP for our aircraft carrier advance procurement, and our

aircraft carrier is our most potent, flexible flying airfield that we have in our inventory. So thank you.

Ms. MCCLELLAN. Well, I will just add that in a recent meeting that I had with the president of Newport News Shipyard, she is pretty concerned about this decision and the impact it will have on their planning ability and workforce. So I continue to have that concern.

It was recently reported that the Navy has spent \$1.4 billion in operations in the Middle East to ensure the safety of navigation in the Red Sea and disrupt Houthi attacks. Can you explain how the Navy is looking to replenish weapons stocks and elaborate on the importance of additional funding from the national security supplemental that we will hopefully vote on no later than Saturday for replenishing these stocks?

Mr. GUERTIN. I would like to thank Congress for getting to that vote on Saturday. We desperately need that supplemental. We have been doing the Nation's work and expending those munitions, and we need to put them back where we found them.

There are other things going on in the supplemental that are particularly vital to some of these other conversations we have been having around improving the industrial base and getting after how to improve our repair and construction capacity.

Admiral Pitts, anything else to add on that one?

Admiral PITTS. Yes, sir, Mr. Secretary. We need to replenish our stocks, and we need to build our production to refill our overall most critical weapons. What our teams did over the weekend was incredible. They did a terrific job, and it shows that the investments that we have made over the last 10 years have paid off, both in weapons and in training.

And there are three ways that we are going to refill these stocks. One is the supplemental that the secretary asked for to give us funding, so that we can start procuring. And we can start recertifying some weapons that are just not useable today and turn them into combat-useable weapons. And that will return back to the fleet in a much shorter time period than the actual production procurement itself. But we need both.

Ms. MCCLELLAN. Thank you.

Admiral PITTS. Yes, ma'am.

Ms. MCCLELLAN. The recent efforts to limit the impact of Houthi attacks on marine routes illustrate a glaring mismatch in our capabilities versus some of those of our adversaries. Can you, in the 36 seconds left, tell us how the Department is working to develop cheaper and more efficient systems that can successfully deliver a defense at more sustainable and affordable cost?

Admiral PITTS. Yes, ma'am. We are examining multiple options. In the near term, it is kinetic options that we could fit into this layered defense system. It won't replace our longer range missiles, but it could fit into a layered defense system to turn that cost curve, and longer term we are looking at directed energy options. Thank you.

Ms. MCCLELLAN. Thank you, Mr. Chair. I yield back.

Mr. KELLY. Now, also from the Commonwealth of Virginia and former chairman of this subcommittee, Mr. Wittman.

Mr. WITTMAN. Well, thank you, Mr. Chairman. I would like to thank our witnesses for joining us today. Secretary Guertin, I would like to follow up a little bit more, too, on the thought process about the 45-day review of shipbuilding. We saw the extended delays there.

But I also want to point to a letter from Secretary Del Toro from March 1, 2024, where he said, "The acquisition strategy of buying two aircraft carriers at a time has a significant utility, both in cost and with learning curve and skill development, and that with going to a 6-year center," he said, "invariably costs more as far as learning for the labor force, and it also costs more."

So let me get your perspective. In the proposal to go from 4-year centers to 6-year centers, give us what is the cost of that. What is the additional cost in going to 6-year centers? And how is this going to help us face the challenges that we are facing with rebuilding a workforce in the shipbuilding realm, especially when it is incredibly important for them to develop skill sets that are pretty advanced.

And if you put them on a roller coaster ride, and you tell the folks that are there now, "Sorry you are gone," and then, "By the way, come back in 2 years, so you can build more aircraft carriers," they are gone forever, and then you are back with new workforce individuals that have to develop that skill set again.

Mr. GUERTIN. So I will ask Admiral Pitts later to weigh in on the challenges we face in terms of laying out the budget and living underneath the Fiscal Responsibility Act. But to your point, you know, stretching out those centers actually lays into Representative Courtney's point about, you know, if we stretch things out too far, then you end up with another valley that you have to climb your way out of, particularly concerning as we are going through this point now where we are trying to get back to where we should be where the 45-day study illuminated where we were, and we don't want to make it any worse.

So very challenging environment in terms of getting to the build centers we need, but sometimes we don't get everything we want. So, Admiral Pitts, any other thoughts on that?

Admiral PITTS. Mr. Secretary, the only additional thought is, given the resources that we were allocated, tough choices had to be made, and that carrier was pushed out to fiscal year 2030. We still need the 3 years' AP, and our shipbuilding plan, both the main plan and the alternate, still pick up either a 5-year center in the alternate plan or 4-1/2-year centers theoretically to be able to do two ship buys on the main shipbuilding plan.

Mr. WITTMAN. Listen, I understand the difficult decisions that you all face, but they seem to be counter to the rules of math. And the way I understand them is you cannot do addition by subtraction. So building 6, retiring 19, that doesn't get us to 355. Extending build centers on aircraft carrier spends more money, doesn't spend less money, makes it more difficult to maintain a workforce, doesn't make it easier to maintain a workforce, again, all things that are counterintuitive.

Secretary Guertin, I want to continue on the theme of multi-year procurement for shipbuilding. We know multi-year procurement for amphibious war ships was passed by this Congress and the com-

mittee. We know the Department's shipbuilding plan has one LHA and three LPDs.

Can you give us an idea about, what would the cost savings be with that commitment to buy in a four-ship block those amphibious ships?

Mr. GUERTIN. That is a great question. And thank you, also, to Congress for giving us those authorities. We have been doing very well with them in the places we have been able to use it. We want to make sure we preserve that for the places that it makes good financial sense as well as good operational sense.

We definitely have shown cost savings when we have done multi-year procurements. Actually, we don't get into multi-year procurements unless we can show cost savings. So that is a powerful tool, and we use it to the maximum extent possible.

Mr. WITTMAN. Well, in this case, do you have a figure on what the cost savings would be with the execution of this multi-ship year buy?

Mr. GUERTIN. That was in my workups for this meeting, but I don't want to give you a number off the top of my head and end up getting it wrong. I think I will have to take that one for the record.

Mr. WITTMAN. Well, assuming it would be significant savings, I think it is going to be around \$900 million, close to \$1 billion. It seems like to me that that would be incentive itself to get this agreement executed as quickly as possible if we are looking at making sure we are saving money and building the ships that we need as a navy. So I would hope that you would keep that at the top of your list of priorities in executing this multi-ship year agreement.

Lieutenant General Heckl, I wanted to ask about the right mix of the different characteristics that are needed in our ships, and those are survivability, susceptibility, and reliability of a vessel. And as you spoke about a little bit earlier, LSM is in that place as you going through determining what are the requirements, what do they need to be, how do we make sure this is the right balance there. All of those things are a challenge going forward.

You said you are having conversations with folks on the industry side. Obviously, there has been conversations within the navy, also, too, within the Department of Defense, within CAPE [Office of Cost Assessment and Program Evaluation]. Give me your perspective about how close we are to getting to that point where we are going to determine exactly what is the right mix. And do you believe that where we are or where we will end up is going to be the right place for the LSM?

General HECKL. Sir, thanks. I am aware we are over time, Mr. Chairman, so I will be quick. First, I think amphibs are kind of my bailiwick. I think what we heard from Ingalls was about 914 on the multi-ship, just so you know.

Second, sir, you know, we have talked. I believe that we -- the work that we have done with ASN RDA [Assistant Secretary of the Navy for Research, Development and Acquisition] on the medium landing ship, on the LSM, we have incorporated several vulnerability and recoverability functions into that, so it is very favorable. I am very, very happy with where we are.

I know there is a CBO [congressional budget office] report out. I don't necessarily agree with the numbers they have quoted in there, and I think that the estimates we have coming out of ASN RDA and DASN [Deputy Assistant Secretary of the Navy] ship are going to be good, and we are pretty happy with it.

So let's remember, we have got to have a combination of LSM and amphibs, right, to really be forward, campaigning, deterring. Presence is deterrence. You can't deter virtually. You have to be there. And the LSM and the amphibs are going to be key components to that, sir.

And I will yield. I will stop.

Mr. WITTMAN. Thank you, Mr. Chairman. I apologize about going over.

Mr. KELLY. His time has expired.

I now recognize from California Ms. Jacobs.

Ms. JACOBS. I think you mean the great State of California.

Mr. KELLY. The great State of California, Ms. -- or is it the great Ms. Jacobs from the great State of California?

[Laughter.]

Ms. JACOBS. Thank you, Mr. Chairman. Thank you so much for being here. I represent San Diego, so everything we are talking about today is very relevant to my constituents.

I wanted to first ask, the fiscal year 2025 Navy budget continues to allocate significant funds towards some legacy platforms, like the Arleigh Burke-class destroyers, despite the fact that, you know, publicly there are known vulnerabilities to sophisticated missile threats from adversaries like China.

In contrast, we know that Constellation-class frigates are equipped with the Mark 41 vertical launch system, which means they can, you know, carry long-range Tomahawks and multi-role SM-6s, which, you know, gives us the ability to go beyond the reach of the Chinese defenses.

Given the strategic value of these capabilities encountering China's advanced military technologies, I was wondering, Secretary Guertin, if you could talk about why there isn't a more pronounced shift in the budget to expedite the deployment of Constellation-class frigates, which I think are, you know, better equipped to ensure our operational flexibility and survivability.

Mr. GUERTIN. So thank you very much for the question. The Constellation is going to be a great ship. But as you might have heard about when we did the 45-day study, we are behind on getting that ship out. I was just up in Marinette, Wisconsin, last week where we did the keeling for that ship, and it is going to be a great one.

However, one of the things we have done with the Arleigh Burke-class destroyers is we have been modifying them and improving them as a part of their life cycle. In fact, that is one of the things I hope to bring to my role as the Navy acquisition executive is getting into a closer cadence for incrementally and iteratively improving capability in those big investments in those ships, so that we keep them viable, warfighting capability for a very long time. It takes a long time to build a ship, but it doesn't take very long to upgrade software or load a new missile.

So even though the Arleigh Burke we have had -- we started building them a long time ago, they are still viable. In fact, the

Arleigh Burke herself, even though she has got an older version of AEGIS out in the Eastern Mediterranean, was firing missiles and doing a great job. So keeping those -- that big investment and building those ships viable by improving them over time is a big part of the portfolio, and I am excited by Congress' ability to give us the resources necessary to improve that capability over time.

Ms. JACOBS. Got you. Admiral Pitts, anything you wanted to add about the operational capabilities?

Admiral PITTS. Yes, ma'am. Thank you. I would just say and echo Secretary Guertin's comments that our Arleigh Burke destroyers have incredible capability and are performing beautifully on a day-to-day basis as we evidenced in the Red Sea. And, in fact, we like their capabilities so much we are looking at even the Flight 1s, of extending them, which is another one of our keeping more players on the field and near-term readiness and near-term capability of the fleet.

We have identified five Flight 1 DDGs [guided-missile destroyer] that we are going to extend to get a few more years of service life out of them, and we think it is -- that is a tremendous return on investment.

Ms. JACOBS. Thank you. I also wanted to ask -- I know my colleague, Ms. McClellan, talked about munitions. I wanted to talk about rearming ships at sea. Obviously, we know this is going to be a crucial capability, and, you know, we need to avoid strategic bottleneck of having to return to port for munitions.

Can you talk about how the budget enhances these essential logistics and munitions capabilities, ensuring the ships can be rearmed quickly and remain engaged in operational theaters? And do you feel like there is an adequate focus on these critical areas that could decisively influence the outcome of potential conflicts?

Mr. GUERTIN. Yes. Great question. Actually, rearming at sea is a particularly interesting problem for my boss, the Secretary of the Navy, and something he has been focused on in helping us rediscover some earlier investments in how to do that. And we are going to be testing that out later this year.

But, Admiral Pitts, do you have any other points on the conversation related to investments in that area?

Admiral PITTS. No, sir.

Mr. GUERTIN. Okay. So, anyway, we are rekindling our need to be able to do that functionality and are going to be experimenting with it this year and making sure we can do that fluidly.

Ms. JACOBS. Great. And with my last 20 seconds, I will just make a note that I am excited that the Navy's fiscal year 2025 budget request includes the request for additional O&M funding for your child and youth development programs to fund a childcare workforce initiative.

This is huge for my constituents in San Diego. We have had childcare wait lists of over 4,000 spots long just recently, so I appreciate that you all are putting some resources toward that.

Mr. Chairman, I yield back.

Mr. KELLY. I thank the gentlelady.

I now recognize for the last time on this subcommittee, but someone who served on both Armed Services with me and Intelligence with me, has been the China Committee chairman, who has been

such a great member to this body. This is probably the last time I am going to have you in a hearing, but I am going to tell you, Mike Gallagher was a great Marine, he is a great member of Congress, and I don't know what he is, but I will bet he will still be defending this Nation in whatever capacity he leads.

And, with that, I recognize the gentleman from Wisconsin, Mr. Gallagher.

Mr. GALLAGHER. Wow. Thank you, Mr. Chairman. It always pains me to give credit to an Army officer, but I have truly enjoyed our collaborations through the years. And my time on the Armed Services Committee has been the most rewarding of my years in Congress. It has really, you know, been the focus. I guess the China Committee has taken precedence in the last year, but the stuff we have done on this committee has been incredible and, really, bipartisan.

I want to recognize a proud Gallagher alum, Major Tom Lacey, in the audience there. Congratulations on your forthcoming deployment. Despite the fact that the Navy is failing to fund nearly 5.7 billion in INDOPACOM requirements, deterrence may actually be enhanced by your arrival in theater, Tom. You are such a great Marine.

General Heckl, this will be your last appearance before Congress. Thank you for your service to this country. Thank you for stepping up most recently when the commandant had a bit of a health issue, but we appreciate it. I have always appreciated our interactions, and you are a great leader. I hope we get a chance to work together in the future and wish your luck in your next endeavors.

We have been -- I think in last year's NDAA we stood up a commission on the future of the Navy. But despite the fact that it has been statutorily authorized, and some commissioners have been appointed, we still haven't -- this thing still hasn't gotten to work.

Do you know how many days -- I guess, Secretary Guertin, are you aware of the future of the Navy commission? Do you know how many days it has been since that commission was set to be established by law?

Mr. GUERTIN. No, Congressman. I am not familiar with that one.

Mr. GALLAGHER. It has been 391 days. That is 391 lost opportunities to get to work. And I get that there is mixed views on the nature of outside commissions. I will tell you, I got to work on one with Senator King related to cyber security that was incredibly productive, that produced a lot of recommendations that went directly into the National Defense Authorization Act.

And I would suggest in light of the revelations of the 45-day review, you know, with 36-month delays on Constellation, 18 month on Virginia, 12 to 16 on Columbia, 12 month on CVN [aircraft carrier], I think it further underscores the need for an outside look at the future of the Navy. This isn't a fault of the executive branch. It is actually a fault of Congress right now.

We have two commissioners that haven't been appointed by the SASC [Senate Armed Services Committee] chairman, by the minority leader, and I don't know what the heck is going on. But we have got some good people that are ready to take an outside look at the future of the Navy and I think would actually provide some good supporting fires.

So I just would ask from your positions, whenever asked about it, I get there might be skepticism and antibodies in the building, but there is a reason we do commissions like this from time to time. It is when, quite frankly, Congress is exasperated, and we have had a series of choose-your-own-adventure 30-year ship-building plans, we have had revelations about delays, we have had the 45-day review, constantly changing numbers. We just feel like more needs to be done to map out the future of the Navy.

And I would just hope that the building, even with the current composition of commissioners, even though it is not at full strength, the Pentagon can still support the effort, and I just would ask that you do. And I will be encouraging my colleagues to do more.

Given that you referenced that you were just in the 8th District of Wisconsin, in Marinette, and in light of the frigate delays, I think what has troubled most of us who lived through the LCS [littoral combat ship] experience and, you know, were very -- remain very excited about the Constellation-class frigate is the fact that at one point the Constellation design shared about 85 percent commonality with the original Italian FREMM design. Indeed, that was part of the reason that Thinkentary won the award where the idea was to leverage a proven design.

But the alterations have brought that commonality down under 15 percent. Can you just explain to us how something like that happens and what could be done to fix it?

Mr. GUERTIN. Senator, you are right. The Constellation is going to be a great ship. We did start out with a handful of government-furnished equipment that would go into that, things that we have known, we have worked on, we have invested in. So the capabilities that will come out of that ship will be especially useful to the fleet and be a real workhorse.

As far as commonality of the original Italian design, we had to look at that through the lens of what it was going to be to be a U.S. Navy warfighting ship, including things like managing vital power, egress, and that other aspects of the minimal amounts of change that we were going to need in order for it to be able to carry the warfighting capability we were going to need for our Nation.

Mr. GALLAGHER. Minimal amount of change is an over 70percent change from the Navy's perspective.

Mr. GUERTIN. We did our best to minimize the changes in that FREMM design, but we did have to make sure that we were attending to the needs of the United States Navy as a part of that design.

Mr. GALLAGHER. Okay. Well, this is obviously going to be an issue we are going to have to continue to tackle. I mean, the frigate is designed to be the workhorse of the future fleet. We need to be getting, I would say, not just a 2 year, but eventually 4 in two different yards. That is the only way to grow the size of the Navy.

And so I guess I will throw that hot potato to you, General Kelly. Just another thing you can fix in my absence. But hopefully I can continue to provide some supporting fires from wherever I land.

Mr. KELLY. I thank the gentleman. And now from the great State of Maine, Mr. Golden.

Mr. GOLDEN. Thank you, Mr. Chair. And, of course, thanks to my fellow Marine, Mr. Gallagher. I look forward to working with you right down to the very end here.

Mr. Secretary, before Congress passed the fiscal year 2024 Approps bill, the Administration requested two DDG-51s in the PBR for fiscal year 2025. But now that the fiscal year 2024 Approps process is done, and Congress included 1.357 billion in AP for a third DDG, how much additional funding would be needed to fund a third DDG in fiscal year 2025 and get more flight-through ships out to the fleet?

Mr. GUERTIN. I am not certain I have an exact number with me.

Admiral Pitts, do you have anything that can illuminate the discussion?

Admiral PITTS. No, sir. I don't have a number.

Mr. GUERTIN. We will have to take that one for the record.

Mr. GOLDEN. For the record, please. I think we are well over halfway there, just my kind of back-of-hand analysis.

But I guess this one is for the admiral. How many flight-through ships have been delivered to the fleet to date?

Admiral PITTS. Congressman, I believe it is one, the Jack Lucas.

Mr. GOLDEN. One. And how important is it to field more flight-through ships, given the radar technologies, the upgrade there, particularly in light of some of the testimony from the secretary in recent world events?

Admiral PITTS. Yes, sir, it is very important. We are going to be -- relying on the additional SPY-6 radar and our AEGIS Baseline 10 brings tremendous capability to our destroyer fleet.

Mr. GOLDEN. Thank you. I guess following up on the questioning from Mr. Wittman, I am also interested in talking about multi-year procurement for amphibs. I have seen this with the DDG program and appreciated the stability and lower costs that that type of an approach has given the Navy, as well as -- as well as the Congress.

You know, in light of what I was just asking about, like what would it take us to get to a third DDG, it is not quite like a dollar-for-dollar tradeoff. Like my staff had about a 900 to 1 billion savings if we were doing a multi-year procurement on amphibs. So pretty close to the other half of that DDG, not to mention that I think this committee has essentially a missing sub that we have to find a way to put back into this budget.

You know, given all of that, not to mention the stability that it could provide to do a multi-year procurement, both -- just certainty for the Marines, for the Navy, for the people that are going to be building those, I guess I am curious, what is the hesitancy to issue an MYP? And, I mean, it is not like you have to expend any kind of capital here in front of Congress. We have already given you the authorization to do it.

Mr. GUERTIN. Mr. Congressman, we will -- we use multi-year procurement as often as possible in places where we can show a financial benefit. As the general said, you know, right, it is about \$900 million. All told, it happens over the course of multiple years, and so we need to package that up and utilize those resources, in complete transparency with Congress where we have those savings, those benefits, and then we will have a dialogue about where the

best place is to apply them as we put our budget submission together and have that back and forth with you going forward.

Mr. GOLDEN. Sure. I appreciate that. Just from my perspective, sir, and I know, you know, there is more that goes into it, but those lost savings just make our job harder here, as you are looking for more subs, more destroyers, more amphib, not to mention I am leaving other ships out. So hopefully the Navy will give that a good, hard look.

I don't have any more. Thank you.

Mr. KELLY. I would just say that the multi-year procurement doesn't just add finances, it adds time, and time is more precious than finances sometimes.

And, with that, I recognize the gentleman from Missouri, Mr. Alford.

Mr. ALFORD. Thank you, Mr. Chair, and Ranking Member Courtney, and thank you for our witnesses being here today. I really appreciate it.

The pace at which the CCP-led People's Republic of China's military has grown over the last few years. It has been shocking. I know I am not telling you anything you don't know on that front. They have outpaced our shipbuilding capacity by a great magnitude. And while I certainly believe our ships are more technologically advanced, quantity often becomes a quality of its own.

I know that there are DoD programs such as the Replicator and Hellscape aimed at addressing the relatively numerical advantages competitors may have in regions such as the Indo-Pacific. However, this does not mean we should not fight to fix our industrial base issues, specifically in shipbuilding and submarine building.

Ranking Member Courtney, thank you for providing your empirical data about the submarine industrial base to committee members. It is great to hear that General Dynamics Electric Boat hired more than 5,000 new workers in fiscal year 2023, and it is on track to exceed 5,000 this year. I am also pleased to see they have increased their yearly production to 1.4 boats, up from 1.2, although that is still not good enough.

We must do more across the entire industrial base to provide the right number of ships, planes, missiles, and munitions to establish credible deterrence against hostile competitors. This really boils down to what Chairman Mike Rogers said yesterday in the Army budget hearing. We capped defense spending at 1 percent in the FRA, forcing the DoD to make cuts. This cap is why the Navy chose to only ask for one Virginia-class sub this year and why the Air Force asked for fewer F-35s.

The DoD is faced with tough choices and is robbing Peter to pay Paul as they attempt to modernize, maintain readiness, improve quality of life, on a 1 percent defense budget increase.

With that, I move into my questions. First, for Mr. Guertin, according to the Navy's website, at the end of World War II, we had more than 800 surface warships and more than 200 submarines. During President Reagan's term, we had over 220 surface vessels, over 100 subs, and close to 600 ships across the total Navy. This is at the height of the Cold War when the U.S. had only one power to deter.

The fiscal year 2025 President's budget asked for funds to field a fleet of 113 surface combatant ships, 12 aircraft carriers, and 67 submarines.

Mr. Guertin, is 293 total ships enough to meet all the demands of the Navy at a time when we must deter now two great powers and keep sea lanes open while under attacks from terrorists such as the Houthis in the Red Sea?

Mr. GUERTIN. Thank you for the question. I will defer to my uniformed colleagues here about whether or not it is enough ships, but I suspect they will say no. Certainly, the combatant commanders have been asking us for resources, and we deliver them as much as we can.

Getting back to your point about the number of ships that we had, say, during the Reagan era, we also had many more shipyards, both public and private. And that is one of the problems that we face together, Congress and Government, about getting the laydown of capacity, that we need to have a strong military in the field, and especially ships at sea.

One of the reasons I am particularly interested in more fully exploring the maritime statescraft strategy to increase the Nation's capacity for building ships in general, so that I can be in a better position to provide the military with the men of war that we are going to need to do the Nation's work.

So, General or Admiral, do you have any other points to make on that?

Mr. ALFORD. Admiral?

Admiral PITTS. Sir, thank you. The other point I would make is, our most recent battle force ship assessment and requirement report clearly states that we need 381 ships. So the answer to the question is, no, we don't have enough at 291. And that assessment was based on the defense planning scenarios from our defense planning guidance and it aligns to the National Defense Strategy.

Mr. ALFORD. If you did have the funding, I assume you would ask for two Virginia-class attack subs in fiscal year 2025?

Admiral PITTS. Yes, sir. I believe that we would take the two Virginia-class submarines. As we were building the budget, we thought it was more important to spend most of our money on the submarine industrial base, so that we ultimately achieve one-plus-two production, and then one-plus-2.33 production, to support both our requirements and our AUKUS commitments.

Mr. ALFORD. Thank you. Thank you, gentlemen.

I yield back.

Mr. KELLY. I now recognize the gentleman from the great State of Pennsylvania, Mr. Deluzio.

Mr. DELUZIO. Mr. Chairman, thank you. Gentlemen, thank you. I think I am --

Mr. ALFORD. Are you a Commonwealth, too?

Mr. DELUZIO. I am a Commonwealth.

Mr. KELLY. I am sorry. I correct myself. The Commonwealth of Pennsylvania.

Mr. DELUZIO. I am a Commonwealth. Very proud of that.

Number one, Mr. Guertin, I very much appreciate the good point on shipyards in this conversation. It is a major piece of us confronting our maritime strategy, so I appreciate the attention and

the investment that we need to be making. I want to talk a bit about some of the supply chain, in particular additive manufacturing.

I am going to pull out a quote the joint testimony here. The quote starts, "The Navy has seen significant benefit for investments made to date, including installation of multiple additively manufactured components on in-service submarines." My district has a resilient manufacturing ecosystem at Neighborhood 91. It is a fully integrated campus around additive manufacturing production. That is contributing to this effort.

So my question, either for Admiral Pitts or Mr. Guertin, tell us a bit more about what those successes are that the Navy has seen, how additive manufacturing can play into bolstering competition, and the supply chain building more resilience, and the like.

Mr. GUERTIN. Additive manufacturing is a big part of how our future can be shaped by being more competitive, because the opportunities for building systems and components across a wider market looms large.

We have been challenged to make sure that the components meet the right physical properties when they are built in a different way, but I think we have made some great strides in our technical authorities for understanding what those challenges are and how to make sure that those additive manufacturing processes can attend to those stringent physical requirements.

There are some other things that we need to think about how we could take advantage of the technology to build some other components that we currently have that are a big challenge and being able to do here in this country, forgings, for instance, and castings. Additive manufacturing at the right scale can be a big help in that area.

Mr. DELUZIO. Is the Navy driving this? Is it coming from the contractor? Is it a mix of both? I am curious how much the Navy is pushing for not just investment but to see more of the supply chain embrace things like additive manufacturing.

Mr. GUERTIN. Ships are big, and sometimes they need big parts.

Mr. DELUZIO. Sure.

Mr. GUERTIN. And those require those large-scale structural mechanisms for fabrication. However, with the limited amount of available manufacturers to do that kind of work in this country, we need to either rebuild that infrastructure or turn to a different approach. And that is what -- we are trying to do both of those things to see which one will get us the best bang for the buck in that area.

Mr. DELUZIO. Admiral, anything you want to add? Okay.

I will make one final point and question, I suppose. Shipbuilding, in general, of course that doesn't happen without workers. And we are seeing, you know, in the skilled trades pretty similar dynamics play out, not just in shipbuilding where, you know, struggling to find newer folks going into these apprenticeship programs and the rest. How does the Navy view that challenge? How are we meeting it? How are we working with industry to make sure we have got the workforce to do this work?

Mr. GUERTIN. We have been working both with industry and with local communities, especially colleges that are helping with people learning trades. I was at an opening of a training center up

in York County in Maine. There is some other interesting work going on there to help improve the throughput of people learning those trade craft skills, so that they can get out to our shipyards and have those great jobs that have great career opportunities that are opportunities to also be a part of something bigger than themselves, be a part of building this great Nation's weapons of war.

I am very excited about the opportunity, but I will say that one of the things we have been asking our industry partners to do is to think more seriously about how they improve their workers in their companies and to invest more in getting their environments to be more enjoyable places to work as well as greater throughput in people getting out to the work that we need for them to do, that we contract with them to do.

Mr. DELUZIO. Good. Thank you.

Mr. Chairman, I will yield back.

Mr. KELLY. I would like to thank all of our witnesses here today. Just as a final thought, I think we have the greatest shipbuilders and repairers and maintainers in the world. But we have to send them the right signal all the time. We have to give them predictable schedules of both repair and building.

We can't send them mixed signals, and we can't tell them to pause or put on the brakes or take a strategic pause. And we have to use multi-year buys, understanding that it is always not financial benefits that we gain, but sometimes it is the benefit in time, to produce more in a short time, which in and of itself is a financial benefit.

And, finally, Lieutenant General Heckl, I have been blessed with the opportunity to travel with you multiple times, to be engaged with you, and I thank you for your service to our Nation in many, many roles. And like Mr. Gallagher over here, I look forward to you continuing to do great things for this Nation in a life past the Marine Corps.

And, with that, this meeting is adjourned.

[Whereupon, at 4:17 p.m., the subcommittee was adjourned.]

A P P E N D I X

APRIL 17, 2024

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

APRIL 17, 2024

Chairman Kelly Opening Statement

Thank you to our three witnesses for being here today to discuss the Navy's fiscal year 2025 budget request for Seapower and Projection Forces. I would like to also thank the Members of this subcommittee for their hard work on this year's NDAA.

Today, we face an increasingly assertive and powerful China. To maintain America's command of the world's oceans, we must expand our Navy and its capabilities in order to deter and defeat the adversary. We have heard the CNO talk about keeping "more players on the field", yet this President's budget request sends the wrong signal, seeking to divest 19 ships, including 10 that haven't reached their expected service life, and purchasing only 6. A diminished Navy emboldens Beijing and undermines America's position as the global maritime leader.

As our subcommittee grapples with critical challenges and strategic decisions in this year's NDAA, our goal remains clear: to ensure our Navy and Marine Corps team is equipped, ready, and capable of defending freedom in the world's oceans.

The Navy recently undertook a 45-day review of its major shipbuilding programs. To be frank, it's unclear exactly what has been achieved. What is clear is that we need a deeper level of self-reflection from the Navy. It's crucial that we better understand your strategies for improvement and how you plan to recover schedules.

We continue to face production challenges with our submarines. The decision to include only one Virginia class submarine in the budget request does not align with the 2+1 cadence that was predicated under the AUKUS agreement. Sending a strong demand signal is essential for maintaining industrial capabilities and

international confidence in our naval production. Reducing our order from two boats to one in this year's budget does not inspire confidence, nor does it forecast stability to our industry partners or allies.

Regarding the Columbia-class submarines, intended to be our strategic deterrent backbone, the ongoing delays are a serious concern. These delays not only risk our nuclear deterrence posture but also complicate our compliance with STRATCOM's operational requirements. I look forward to hearing plans from our witnesses today on how the Navy intends to mitigate these risks.

Additional delays in the designs and production of the DDG(X) and SSN(X) threaten the Navy's ability to maintain the world's most lethal and advanced Navy. These delays are costly and threaten long-term planning as well as the readiness of our fleet.

Turning to surface vessels, the Constellation-class frigates have not been spared from these setbacks. Originally slated for delivery in September 2026, the first ship's arrival has now been pushed to December 2027, with subsequent ships on an equally tentative schedule. This delay represents a broader trend of inefficiencies that we must address.

This year's 30-year shipbuilding plan presented two rather than three future pathways, a step in the right direction—but is still sure to confuse our industry partners. If I were industry, I would be scratching my head trying to decipher these plans. It is critical that the Navy provide a coherent strategy and clear headlights that industry can align with and invest with confidence.

I am pleased to see the inclusion of LPD 33 in the budget request, adhering to the 31 amphibious ship requirement mandated by the NDAA. However, while this is a positive step,

existing issues with LSMs indicate that we must ensure affordability and producibility.

We must also be cautious about the tendency to pile on requirements in ship design and production. History has shown us that this often leads to increased costs and extended delivery timelines.

In closing, I look forward to transparency today, addressing recent setbacks and outlining proactive steps to overcome them. Our national security and the lethality of our naval forces depend on your commitment to resolving these issues promptly.

And with that, I turn it over to my good friend and Ranking Member, Joe Courtney, for his opening remarks.

**Seapower and Projection Forces Subcommittee Hearing – DoN
Shipbuilding**

Thank you, Chairman Kelly.

I also want to thank our witnesses - Assistant Secretary Guertin, Vice Admiral Pitts, and Lieutenant General Heckl - for being with us today. I had the opportunity to speak with you recently and I thank you for your engagement ahead of today's hearing.

The Fiscal Responsibility Act, which passed in May 2023 to avert a default on the full faith and credit of our nation's currency and bonds, mandated a one percent increase in the Department of Defense's budget request for Fiscal Year 2025.

Given what's going on in the world, this is a very tight cap, and has created tremendous downward pressure on all the services, including the Navy and Marine Corps. At a time when there is a strong consensus about the need to strengthen our maritime and expeditionary forces, our subcommittee has perhaps its most difficult task in years.

It's important to note, however, at the outset of this hearing that the Navy's shipbuilding and conversion account cuts even deeper than the FRA's mandated budget cap. To be clear, the Navy's shipbuilding procurement request is not for only a 1 percent increase – rather it decreases that line item by 3.4

percent from the Fiscal Year 2024 enacted level that President Biden just signed into law last month.

This request includes six battle force ships, a sharp deviation from last year's Future Years Defense Plan and 30 Year Shipbuilding Plan. And, at the same time, 10 battle force ships are being decommissioned. Of particular note, it seeks to reduce procurement of the Virginia Class submarine program from 13 consecutive years of steady, two per year cadence, down to just one submarine in FY25.

This decision to cut procurement in the Virginia program contradicts our own combatant commanders that have emphasized the need for more attack submarines to deter the intensifying threats in the undersea domain. During our posture hearings in the last month, we have consistently heard from Combatant Commanders from INDOPACOM, EUCOM, and NORTHCOM -- Admiral Aquilino, General Cavoli, and General Guillot -- that their requirements for attack submarines are extended beyond the number of boats in the Navy's inventory.

Equally concerning, is that Congress has already appropriated in the last two budgets nearly 1 billion dollars in Advance Procurement for the second submarine that the Navy now seeks to eliminate. This unexpected change in demand signal has, and will, cause serious reverberations throughout the industrial base

and friends overseas who, based on my conversations in those arenas, are frankly incredulous. I've already shared these concerns with you, and we will explore that in further depth today.

The Navy's public justification for dropping a submarine is that the sizable investments in the submarine industrial base in the budget will offset its cut in procurement and fleet size. As a member who has secured congressional increases in the SIB starting in 2018, I wholly support the Navy's embrace of that effort. However, I reject the ivory tower theory that SIB investment is a substitute for a consistent demand signal for orders and business. The two enterprises have to occur in tandem.

Over the Easter break, I had the opportunity to meet with several supply chain companies and the message was clear – submarine industrial base investments don't pay the bills, particularly for those firms that don't qualify for SIB assistance.

It is important to remember that cutting procurement going back to the 1990s is precisely the reason why the submarine industrial base has eroded over the last 30 years. Indeed, Under Secretary Robert LaPlante testified to that point before the Armed Services Committee just a few weeks ago.

The decades of financial trauma the industrial base has experienced due to the Navy's consistently inconsistent procurement profiles is still deeply seared into the supply chain companies and metal trades unions that represent the welders, electricians, machinists, and pipefitters that are hard at work as we sit in this committee room today.

I request unanimous consent to enter into the record two letters from the Machinists Union and Metal Trades Department of the AFL-CIO urging that we sustain the two-per-year procurement of the Virginia Class submarine program.

The industrial base is finally starting to recover from COVID disruptions, and inserting instability into the supply chain will compound those challenges. We are seeing a positive trend in performance, as we delivered the USS Hyman G. Rickover last fall, and are on track to deliver three more attack submarines this year according to official Navy budget documents.

I have a chart behind me that highlights the growth we are seeing in construction performance.

I am glad to see that the Navy has restored the procurement profile for its LPD platform, electing to budget for three vessels across the Future Years Defense Plan. I commend the Navy and

Marine Corps for adhering to the statutory requirement of sustaining no less than 31 amphibious warships in the inventory.

Lastly, I remain concerned about recent reporting regarding the Landing Ship Medium program's potential cost increases over the life of the program. Disagreements between commercial standards for the ship's hull and additional requirements for survivability provide uncertainty for industry to adequately design, plan, and build these platforms. We are simultaneously pointing out mistakes made on past shipbuilding programs where requirements growth led to major cost growth and schedule delays while sending industry a request for proposals that will likely lead to the same circumstances. There is no doubt that this is a promising program, but we need to see agreement on its requirements to keep costs low and deliver to the fleet.

I look forward to discussing these issues with you all today.

With that, I yield back.

NOT FOR PUBLICATION UNTIL RELEASED BY
THE SENATE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES

STATEMENT OF

NICKOLAS H. GUERTIN
ASSISTANT SECRETARY OF THE NAVY
(RESEARCH, DEVELOPMENT AND ACQUISITION)

AND

VICE ADMIRAL JAMES PITTS
DEPUTY CHIEF OF NAVAL OPERATIONS
WARFIGHTING REQUIREMENTS AND CAPABILITIES (OPNAV N9)

AND

LIEUTENANT GENERAL KARSTEN S. HECKL
DEPUTY COMMANDANT, COMBAT DEVELOPMENT AND INTEGRATION
COMMANDING GENERAL, MARINE CORPS COMBAT DEVELOPMENT COMMAND

BEFORE THE

SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES OF THE
HOUSE ARMED SERVICES COMMITTEE

ON

DEPARTMENT OF THE NAVY FISCAL YEAR 2025 BUDGET REQUEST FOR SEAPOWER
AND PROJECTION FORCES

APRIL 17, 2024

NOT FOR PUBLICATION UNTIL RELEASED BY
THE HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES

Chairman Kelly, Ranking Member Courtney, and distinguished members of the Subcommittee, thank you for the opportunity to appear before you today to address the Department of the Navy's Fiscal Year (FY) 2025 budget request for Seapower capabilities. Maintaining a world-class and world-wide 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 actions of the Navy and Marine Corps team reassures international allies and partners, deters potential adversaries and responds to those who threaten the lives of our Sailors, Marines and civilian merchant mariners engaged in lawful, international commercial activities. The DON remains focused on the pacing challenge of managing strategic competition with the People's Republic of China (PRC), Russia's illegal war and invasion of Ukraine and the Houthi strikes in the Red Sea. 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. The investments we make today will shape DON's future and support the Secretary's three enduring priorities of strengthening maritime dominance, building a culture of warfighting excellence, and enhancing strategic partnerships.

Since the start of FY 2023 we have delivered 11 battle force ships to the Fleet including three Arleigh Burke Class destroyers (DDG 51), one Virginia Class (SSN), three Littoral Combat Ships (LCS), one Replenishment Oiler (TAO-205), two Spearhead Class expeditionary fast transport dock (EPF), and one Lewis B. Puller class expeditionary sea base (ESB). Today, the Navy has 293 battle force ships, with an additional 87 ships under contract and 58 ships in construction, with the balance of ships in pre-construction activities such as long lead material procurement and planning efforts. The Department has made great strides in recapitalizing Naval aviation platforms. Last year we delivered 60 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, KC-130J, 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. We are continuing making advancements in FY24 for unmanned aviation. The MQ-4 program is meeting schedule objectives, completing Initial Operational Capability (IOC) in July 2023 with its first orbit stand up in INDOPACOM. The Program is currently in the process of standing up its remaining two operational orbits in EUCOM and CENTCOM, scheduled for Q2FY24 and Q1FY25 respectively. The MQ-4 will undergo continuous spiral upgrades throughout the next four years, to include Link-16 targeting with LRASM in 2024 culminating in Full Operational Capability in FY28 enabling near-24/7 ISR coverage in simultaneous theaters of operation.

The Unmanned Carrier Aviation Mission Control System (UMCS) is the system-of-systems required for MQ-25 air vehicle and payload command and control. UMCS integrates multiple networks and systems both afloat and ashore and is synchronized with the MQ-25 to provide a complete capability to the carrier. The program conducted its first C4I Operational Network Evaluation that validated network connectivity over Navy networks and wideband satellite communications in January 2024. The first ground control station will be installed on CVN 77 in fall 2024. Nine systems have been delivered to date and the first carrier-based ground control station installation will complete on CVN 77 in the fall of 2024. UMCS will also be the control system for the Air Wing of the Future.

The first Joint System Verification Test event to validate the initial software build was conducted in January 2024. The Static test article aircraft was completed in January 2024 and will begin testing in spring of 2024. The first EDM aircraft is scheduled to be delivered early 2025 with its first flight scheduled for summer of 2025. MQ-25 is scheduled to reach IOC in 2026.

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, Russia's war against Ukraine has displayed the value of enhanced sensors and long-range precision fires, the importance

of freedom of navigation, and the ability to sustain a force. The war highlights the need for increased industrial capacity, and has 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 show their willingness to compete below the threshold of armed violence.

The Marine Corps' activation of new units, including the 3rd 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. 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 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 also shows 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 expand opportunities for manned/unmanned teaming (MUMT) and recently stood up 4th Fleet's hybrid fleet providing continuous maritime domain awareness. 4th Fleet also demonstrated a multi-domain SINKEX and manned/unmanned teaming to include operations from the expeditionary fast transport USNS (T-EPF-10). This work expands on the lessons learned from TF-59 and the commercial use technology they continue to experiment with.

Another great example of recent successes of MUMT is when the Navy's USV prototypes

deployed as participants in Integrated Battle Problem (IBP) 23.2 to the Western Pacific in 2023. During this -6-month exercise, our Unmanned Surface Vessel (USV) prototypes Ranger, Mariner, Sea Hunter, Seahawk reached 3,191 hours operating in autonomy mode, totaled 39,10 nautical miles travelled under autonomy control and accomplished 1,333 autonomous missions. They participated in Autonomous Warrior, and one USV visited Yokosuka, Japan. This event is paying dividends to inform our sailors on future CONOPS to include our USVs doing astern refueling from a fleet oiler and operating with a controlling Aegis Destroyer. In order to ensure our people have the right skills to maintain our unmanned capabilities, the Navy recently established the first ever Robotics rating. This rating is designed to train our Sailors to maintain our current and future unmanned capabilities. SURFDEVRON is also establishing Unmanned Surface Vessel Squadron 3 in FY25, a new organization to support the TTP and CONOPS development for small USVs.

The Navy is also supporting and investing in Deputy Secretary of Defense's Replicator Initiative to build and field attritable autonomous capabilities at scale within 18-24 months.

In keeping with accelerating innovation, the Navy established the Disruptive Capabilities Office (DCO) to produce disruptive warfighting advantages by rapidly identifying and evaluating innovation solution paths for emerging operational problems in the execution and budget years. The DCO will stay aligned with, the Replicator Initiative.

FY24 and FY25 will continue with more MUMT experimentation in order to expand our awareness, command and control, and forward contested logistics. This collaborative approach on innovation, experimentation and integration will leverage industries' pace of technology, allies, and partners' capabilities, while exploring new concepts.

The Fiscal Year 2025 President's Budget Request

The President's FY 2025 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 FY 2025 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. FY 2025 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 second year of incremental funding for the second Columbia Class SSBN and full funding for two DDG Flight IIIs, one SSN, one FFG, one LPD and the first LSM, while providing the next increment of funding for construction of CVN 80 and CVN 81. The budget supports modernization of our warfighting capabilities across all domains, including research and development (R&D) funding for the future attack submarine (SSN(X)), future destroyer (DDG(X)), the Next Generation Air Dominance (NGAD) manned strike fighter (F/A-XX), Marine Corps Unmanned Expeditionary (MUX) FoS, and recapitalization of the Take Charge and Move Out (TACAMO) mission (E-XX).

The Department requests \$16.2 billion in FY 2025 and includes 75 fixed-wing, rotary-wing, and uncrewed aircraft to modernize our capabilities that can achieve lethal and persistent effects inside adversary weapon engagement zones. This budget funds 53 fixed-wing aircraft to include 13 F-35B and 13 F-35C Lightning II strike fighters to continue transitioning our 4th generation fighter squadron and 27 T-54A multi-engine training system aircraft. Lastly, three MQ-25 Stingrays are requested to conduct aerial refueling and Intelligence, surveillance, and reconnaissance (ISR). The FY 2025 budget prioritizes readiness recovery, continuing prior year gains on ship and aircraft maintenance efforts to improve overall department readiness. It includes significant funding to improve operational readiness, material availability and reduce maintenance periods for submarines. 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. USS Winston S. Churchill (DDG 81) began operating with a virtualized Aegis Combat System, a crucial step in the wider transition to a single integrated system, in July of 2023. In 2024, the Arleigh Burke-class destroyer USS Lenah Sutcliffe Higbee (DDG 123), as well as five more ships and four land based test sites are also projected to run virtualized Aegis combat systems.

The budget request increases investment in the Commandant's Force Design priorities by

\$98.7 million, moving programs from concept/experimentation to production within five lines of effort (LOE) – sense and detect; fuse, understand and decide; act; protest; transmission paths; and sustain and move. 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 FY 2025 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 \$8.8 billion investment across the FYDP 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 and sustainment of the existing submarine force. The Navy is leveraging the implementation of dedicated workforce development incentives on Navy contracts to attract, recruit, develop and retain the workforce at our nation's shipbuilding partners. PB25 continues the Workforce Development Incentives awarded in FY 2023 on the DDG-51 MYP contracts (FY23-FY27). Additionally, the Navy is implementing dedicated Workforce Development Incentives on upcoming new contract awards for Virginia Class, San Antonio Class, and Medium Landing Ship.

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 aggression, 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

The Columbia Class SSBN, with the TRIDENT D5 Life Extension 2 (D5LE2) will ensure the effectiveness and availability of the nation's Sea Based Strategic Deterrent (SBSD) through the 2080s. 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 full construction in FY 2021. This ship must be on patrol by fiscal year 2031 to meet USSTRATCOM requirements. While the District of Columbia is progressing into the next phases of construction the margin to the 84-month contract delivery schedule has been consumed and the shipbuilders' performance must improve to regain schedule. The Navy is driving both General Dynamics Electric Boat (GDEB) and Huntington Ingalls Newport News Shipbuilding (HII-NNS) to identify mitigations to recover critical path schedule, improve overall performance, and deliver on time. Because of the significance of the SBSB mission, the Navy is holistically managing SSBN inventory across the portfolio using targeted Ohio-Class SSBN service life extensions to mitigate possible Columbia delays. The second ship of the class, Wisconsin, commenced full construction in October 2023 and learning is being demonstrated through reduced spans for early construction activities. The FY 2025 budget request includes the second year of incremental funding for Wisconsin, as well as funding for advance procurement, advance construction and continuous production across the class. Continued funding for these initiatives are critical to reducing construction schedule risk and enabling cost savings across the class. The Navy appreciates Congress's continued support of these authorities.

As of March 2024, the Navy has taken delivery of 22 Virginia Class submarines with 16 additional under contract. Hyman G Rickover (SSN 795) delivered October 2023 and New Jersey (SSN 796) is planned to deliver in April 2024. The second ship of the Block V contract will introduce the Virginia Payload Module, which helps mitigate the loss of undersea strike capability with the retirement of SSGNs. All Block V ships will incorporate Acoustic Superiority program improvements. Virginia Class construction performance continues to be challenged to meet the required two per year delivery cadence and is currently at ~1.2/year. With Congressional approval, the Navy intends to award the next Virginia multi-year procurement (MYP) contract, Block VI, in FY25 which will include nine ships. Given the challenges in meeting the required construction

rates, the FY 2025 budget includes funding for one Virginia SSN, which provides an opportunity for the shipbuilders to balance production for VCS Block VI construction and serial Columbia production in FY26 and allows for maturation of improvements in manufacturing, outfitting and assembly and test, as well as industrial base investments. The FY25 budget also includes advance procurement (AP) and economic order quantity (EOQ) funding in support of Block VI ships. AP and EOQ allows for critical sub-tier vendors to be kept on cadence and support the procurement of long lead materials and components that are critical to the program. Cost to complete funding for Block IV and V boats are also included in this budget and well as funding for continued development of capabilities and technologies for future blocks.

The submarine industrial base (SIB), consisting of the public shipyards and two prime shipbuilders, General Dynamics Electric Boat (GDEB) and Huntington Ingalls Industries Newport News Shipbuilding (HII-NNS), along with the 16,000 suppliers across the country, supports both new-construction submarines and sustainment of the in-service submarine fleet. The SIB faces an increase in demand across the enterprise as the Navy ramps up production of the Columbia Class, continues to increase production to two Virginia Class submarines per year beginning in FY26, while increasing SSN operational availability and supporting international commitments under the AUKUS partnership. The unprecedented demands on the submarine industrial base require a whole-of-nation effort. Our shipbuilders and their supporting high-tech supplier base are building up from a lengthy drawdown and our SIB requires a once-in-a-generation effort to modernize our force and develop our allies' submarine capabilities so we can fight alongside each other. The Navy appreciates congressional support to address these challenges. In 2021 and again this year, the Navy and DoD performed a study looking at the health of the industrial base. The FY 2025 budget request expands upon the foundational investments made in prior budget cycles and are critical to shore up the SIB to produce Virginia and Columbia, sustain in-service submarines and ramp up to the build rate necessary to support AUKUS requirements. Investments are targeted in six key areas to include infrastructure, supplier development, scaling of new technologies, workforce development, strategic outsourcing and government oversight of these efforts. The Navy has seen significant benefit from investments made to date including installation of multiple additive manufactured components additively manufactured components on in-service submarines, graduation and placement of over 300 people from the Accelerated Training in Defense Manufacturing program, which will scale to train and place 800-1000 skilled trades by FY25, and

increased infrastructure for submarine production through the groundbreaking of the multi-class submarine production facility at Newport News, VA.

The FY 2025 budget continues the efforts 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.

Aircraft Carriers (CVNs)

The FY 2025 budget fully funds the operations and maintenance of 12 In-Service Aircraft Carriers, and three Ford Class Carriers under construction. The FY 2025 budget continues 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) completed a highly successful deployment to support international partners and allies, with critical new systems performing well. CVN 78 spent 239 days underway, sailed over 83,476 nautical miles, and worked with 17 nations throughout its deployment during critical strategic exercises. Her crew and embarked air wing logged over 17,826 flight hours and 10,396 sorties, conducted 33,444 flight deck moves, 3,124 hangar bay aircraft moves, 2,883 aircraft elevator moves, 16,351 aircraft fueling evolutions, and transferred 8,850 pallets of cargo and mail.

John F Kennedy (CVN 79) is over 90 percent construction complete and scheduled for delivery in the fourth quarter of 2025. Enterprise (CVN 80) construction is 37 percent complete, and Doris Miller (CVN 81) 14 percent complete with material procurements pacing ahead of previous Ford Class carriers. The Navy remains committed to reducing and controlling the cost of Ford Class aircraft carriers and continues to benefit from the \$4 billion acquisition savings achieved through the two-ship block buy contract award for CVN 80 and CVN 81. The aircraft carrier industrial base has significant overlap with the submarine industrial base, both at the shipyard and at major suppliers. The Navy's investments in SIB in many cases also benefit aircraft carrier programs by improving performance, efficiency, and capacity at these critical suppliers.

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. USS John C Stennis (CVN 74) is 61 percent complete, and USS Harry S Truman (CVN 75) awarded its

RCOH execution Advanced Planning (AP) contract earlier this year.

The Navy has completed the Environmental Impact Study (EIS) for the disposal of decommissioned, defueled Ex-Enterprise (CVN 65), and announced via Record of Decision (ROD) in September 2023 to select and implement a full commercial dismantlement. This decision will allow the Navy to reduce the Navy inactive ship inventory, eliminate costs associated with maintaining the ship in a safe stowage condition, and dispose of legacy radiological and hazardous wastes in an environmentally responsible manner, while meeting the operational needs of the Navy.

Large Surface Combatants

Arleigh Burke Class (DDG 51) destroyers are the workhorse of the Fleet, with 73 ships delivered as of February 2024, including the very first DDG 51 FLT III ship. At the beginning of August 2023, the Navy awarded the next DDG 51 FLT III Multi-Year Procurement contracts to BIW and HII. These contracts awarded 9 DDG 51 FLT III ships (6 ships to HII and 3 ships to BIW) across the FY23 FYDP. Additionally, each shipbuilder's contract contained options for additional ships over the next five years, providing the Navy and Congress flexibility to increase DDG 51 build rates, if authorized and appropriated. FY23 option ship was awarded to HII at the end of August 2023. As of today, the DDG 51 shipbuilders have a total of 26 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 (SPY-6) and AEGIS Baseline 10 (BL10). SPY-6 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. SPY-6 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 was delivered in June 2023.

Integration testing for the Flight III Combat System continues to progress steadily. Testing of BL10 integration with the SPY-6 array at a land-based development yielded significant risk reduction of first-time integration at the waterfront aboard DDG 125. Notably, the incorporation of software modifications identified during these tests facilitated the delivery of multiple combat system software increments to DDG 125 each adding capability and increasing stability, readiness, and performance. Each of these increments has enhanced the vessel's capabilities, bolstering its stability, readiness, and

overall performance. The first at-sea Live Fire Event completed in September 2023 with the successful launch of a Standard Missile at a drone target. Additionally, in Flight Test Other (FTX-23) DDG 125 demonstrated the first BL10, BMD 6, and SPY-6 integrated detection, tracking, and simulated engagement of a target at sea in February 2024.

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 start the installation of the first Conventional Prompt Strike (CPS) hypersonic weapon system on a maritime platform. In FY 2023, DDG 1000 started her Building Yard Modernization Period (BYMP) at HII shipyard. DDG 1001 is completing Post Delivery Test and Trials (PDT&T) with combat system and final ship delivery planned for July 2024. DDG 1002 continues her Combat Systems Activation (CSA) period at HII.

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 SPY-6 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) in order to preserve the critical shipbuilding and supplier industrial base. Additionally, the Navy is 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.

In 2023, the Navy took this opportunity to re-engage with Surface Warfare leadership and Fleet Commanders to ensure that the final Top Level Requirements (TLRs) represent the necessary warfighting capabilities in the next enduring LSC. This resulting validation across the Requirement and Acquisition communities will ensure that the delivered capability is aligned with and will support future operational needs.

Small Surface Combatants

The Constellation Class Frigate (FFG 62) is the evolution of small surface combatants 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 acquisition strategy is informed by previous shipbuilding programs and takes advantage of proven systems that increase commonality across platforms including the SPY-6 (V)3 radar, Vertical Launch System (VLS) missile launchers, and Aegis combat system software. The first four ships, the future USS Constellation, USS Congress, USS Chesapeake, and USS LaFayette are under contract with USS Constellation under construction. There have been schedule delays experienced in FY 2023, and Navy and the shipbuilder have taken action to complete the design and design reviews are ongoing to ensure achievement of required capability. The Navy is confident in the capability FFG 62 will deliver to the Fleet!

The LCS program will deliver its final ships by the end of FY25, having delivered 31 of the 35 total funded ships to date. As the LCS Class matures, the Navy continues to invest in making the ships more lethal and more survivable to elevate their value in the strategic fight. Eight LCS platforms have Naval Strike Missile (NSM) installed, and all LCS hulls are programmed to receive the weapon system by FY32. LCS Lethality and Survivability (L&S) upgrades will begin in FY 2025 as the Navy continues development of a Common Combat System that utilizes program of record government furnished equipment in place of shipbuilder procured contractor furnished equipment. In addition to enhancing lethality, this transition will vastly improve the Department's ability to affordably maintain and sustain the ships' combat and mission systems. Additionally, USS MOBILE successfully employed Aerosonde Uncrewed Aircraft System (UAS) as it conducted counter-UAS testing with enhanced surveillance capabilities, and USS SAVANNAH executed a successful proof-of-concept launch of an SM-6 missile from a MK 70 Payload Delivery System. Further, the LCS Strike team and Task Force LCS continue to produce measurable increases in materiel availability, as demonstrated by the completion of a successful 26-month deployment of USS Charleston in 7th Fleet as well as USS OAKLAND, meeting all operational commitments for 531 days with no mission days lost. In the past year, the Navy reached a significant milestone in modernizing mine countermeasure (MCM) capability, as the MCM Mission Package (MP) declared IOC in March, 2023. Initial deployments of the MCM MPs aboard Independence Variant LCS will

begin in FY 2025, and MCM MPs remain on track to fully replace the aging Avenger-Class MCM fleet by the end of FY 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. Bougainville (LHA 8), first of the LHA Flt I class, is at 63 percent construction complete and was christened in 2023. LHA 8 includes a well deck to increase operational flexibility and a reduced island structure increasing flight deck space to enhance aviation capability. Fallujah (LHA 9) will be the second Flight I ship and is a rollover of the LHA 8 design with obsolescence-related changes incorporated. Its construction contract was awarded in October 2022 and fabrication started in December 2022. Following advance procurement funding appropriated in FY 2023, this year's budget requests full funding of LHA 10 as an FY 2027 ship.

Other Amphibious Warfare Ships

San Antonio 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, amphibious vehicles, and Special Operations Forces. The San Antonio Class LPD is an essential component to reaching the statutory requirement of not less than 31 amphibious warfare ships, and continues to be affordably constructed with capabilities critical to providing strategic mobility, force projection, and the range to campaign across the globe. Richard M McCool Jr (LPD 29) conducted Acceptance Trials in February of this year with ship delivery this spring. LPD 29 will be the first ship operating the SPY-6 (V)2 rotating variant of Enterprise Air

Surveillance Radar (EASR), outfitting the ship with the latest technology and most sustainable equipment. 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. This year's budget request includes the procurement of three LPD 17 Flight II ships in FY25, FY27 and FY29, a testament to the Navy's commitment to maintain a 31 amphibious ship fleet at the most cost efficient pace.

Landing Craft

The Ship to Shore Connector (SSC) program continues to make progress on craft quality and delivery cadence. Resolution of early technical issues have enabled production to progress as originally envisioned producing four craft per year, with the delivery of Hull 109 anticipated in March 2024. While no SSC are requested in FY 2025, SSC procurement is planned to continue in future Fiscal Years. Four craft were delivered in FY23, and the program is on track to deliver four craft in FY24. The additional craft provided by Congress have been instrumental in buying craft efficiently and supporting the unique vendor base.

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 FY25 budget request reflects a strategic pause in procurements to allow time to reevaluate the LCU 1700 acquisition approach to ensure the Navy is getting craft delivered on time and on budget.

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. The Medium Landing Ship (LSM) is planned to fill the capability gap that exists in the littoral environment between the Navy's large, globally deployable, high endurance, multipurpose amphibious warfare ships and smaller complementary landing craft. The Navy and Marine Corp have collaboratively finalized the best mix of industry-informed requirements to efficiently and affordably procure LSM in support of integrated deterrence and distributed mobility, maneuver and sustainment for littoral expeditionary forces. Release of Detailed Design and Construction (DD&C) Request for Proposal (RFP) occurred in January 2024. The FY 2025 funding request supports lead hull contract award. The program is also exploring alternate acquisition approaches to deliver LSMs more rapidly to the Fleet.

The LSM will be the primary maneuver and sustainment platform for Marine elements of the Stand-in Force (SIF). However, current programmatic timeline for LSM delivery does not support the requirements to provide littoral mobility for one Marine Regiment until FY 2034. In the interim, the DON is evaluating a diverse group of existing naval platforms (e.g., EPF, Commercial Charters, Ancillary Surface Connectors, etc.) to serve as the Littoral Maneuver Bridging Solution (LMBS) to support SIF operating in the Indo-Pacific. For example, 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 SIF conducting EABO. This vessel provides Marine Corps formations with the ability to use littoral waterspace for maneuver, distribution, and resupply using a roll-on/roll-off vessel capable of beaching in various shore environments. On February 13, 2023, the first SLV was officially undocked from its dry-dock location and underwent final shipyard modifications, various trials, and inspections. In addition to the SLV, the Marine Corps is pursuing a future strategy for a smaller craft to enable littoral maneuver, distribution, and sustainment – the Ancillary Surface Connector (ASC). ASC will be built by industry to answer a Service requirement for a III Marine Expeditionary Force inter-island connector that supports the maneuver of forces within the littoral environment and delivery of logistics over the “last tactical mile.” Furthermore, the Fast Transport (EPF) adds value to the LMBS through rapid, agile, intra-theater maneuver of personnel and equipment in support of Distributed Maritime Operations (DMO) and Littoral Operations in a Contested Environment (LCOE). These vessels have and continue to support critical partnerships throughout the Indo-Pacific and the globe, to include theater security cooperation events, Humanitarian Assistance, Disaster Relief missions such as Exercise Talisman Sabre and evacuation efforts.

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 operational 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.

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. FY 2023 appropriations included

the contract award of two Expeditionary Medical Ships (EMS). Construction of the first EMS ship is expected to start in FY 2025.

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 (ESB6) in March 2023 and commissioned her in February 2024. Robert E. Simanek's (ESB 7) keel was laid in October 2022. Hector A. Cafferata Jr. (ESB 8) started construction in August 2023.

The John Lewis (T-AO 205) Class fleet replenishment oiler recapitalizes the T-AO 187 Class as the primary refuel asset vital to ensuring Navy intra-theater replenishment capabilities. USNS Harvey Milk, T-AO 206, delivered in July 2023. T-AO hulls 207 to 213 are under contract. Cost and schedule performance is starting to stabilize with the leveling of inflation, serial production and learning. PB25 does not request additional T-AOs as the program finalizes a block buy acquisition strategy for T-AO 214 – 221, leveraging authorities provided by Congress.

Ten T-ATS Towing, Salvage, and Rescue vessels are currently under production across two Gulf Coast shipyards: five hulls at Bollinger Houma Shipyard and five hulls at Austal USA. In April 2022, Austal USA opened their first steel production line utilizing DPA Title III funding to expand their shipyard capability to enable construction of both steel and aluminum ships. The Auxiliary General Ocean Surveillance ships (T-AGOS 25 Class) consists of a ten -vessel program of record. Austal USA was awarded a Detail Design Contract for the lead ship in May 2023 with options for lead ship construction as well as construction of 6 additional ships. FY25 reflects a gap year to allow sufficient time to complete detailed design work on the lead hull. 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. On February 27, 2023, MARAD completed the purchase of three ships that recapitalize over 660,000 square feet of Sealift capacity. The purchase of the three

ships that make up the Jolly class was the second purchase of the Buy-Used program which began with the purchase of the first used vessels in March 2022.

In FY24, the first two used vessels (Cape Arundel and Cape Cortes), received their Certificate of Inspection, conducted sea trials, relocated from vessel acquisition outfitting pier to final layberth location, completed post sea trial regulatory findings, and enter into the Ready Reserve Force with 432,000 square feet of capacity. The work to modify and outfit these used vessels will continue to be performed by U.S. shipyards.

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. A new construction program is the most appropriate to substitute to the current Maritime Prepositioning Force (MPF) ship portfolio. This is due to capability adaptations to a concept oriented on campaigning that utilizes sea basing to persistently project, sustain, and maintain discrete forces forward in the competition space. In FY23, military sealift command (MSC) transitioned eight MPF vessels from full operational status (FOS) to a reduced operational status (ROS) located in CONUS. Vessels were placed in ROS status as part of cost-reduction offset to prioritize higher Navy priorities. In FY24, the Navy is developing initial new construction concept designs and top-level requirements for the future MPF to support a first ship delivery in approximately FY33.

Sustainment, Modernization, Service Life Extensions and Divestments

The Navy continues to prioritize readiness to ensure the Navy is postured to deter, defend, and win against any threat at any time. Proper platform maintenance is a critical enabler to ensure the Navy is ready to fight. For surface ship maintenance, completing availabilities on time and with required work completed remains the top focus and challenge to the maintenance and acquisition communities as Fleet Commanders must be able to depend on every player on the field to be on-time and ready. To support this, over the last five years, the Navy has been utilizing data analytics to improve availability planning, award contracts, procure material, and integrate schedules, so industry and government can better maximize every day in an availability and continue to drive out Days of Maintenance Delay. Additionally, the Navy is continuing its efforts to strengthen partnerships with industry via proper work package planning and early communication of workload projections for every surface Navy homeport to allow industry to better predict and manage its workload, infrastructure, and workforce.

In addition to the Navy's focus on maintaining the Fleet, the Navy team is executing critical

modernization efforts on key platforms to ensure the Fleet has relevant combat capability. The Navy is continuing its program to invest \$17 billion over 17 years to modernize 25 Flight IIA DDGs to provide combat capability nearly identical to our future DDG Flight III ships, enabling the Navy to accelerate delivery of Terminal Defense and Long-Range Fires capabilities to the fleet and ensure these hulls are being upgraded to maintain relevance and reliability through their expected service life (ESL). The FY 2025 budget includes funding for the third procurement of a SPY-6 variant for back-fit on two in-service DDGs, the combined hull, mechanical & electrical and combat system/AEGIS modernization upgrade installations on two DDGs in FY 2025, the necessary procurements for additional installs planned in FY 2026 and 2027, and the procurement of another two high efficiency super chiller shipset planned for installation in FY 2028. The Navy has worked to incorporate Cruiser Modernization lessons learned into the DDG Modernization acquisition strategy, including availability planning, solicitation strategies, appropriate contract types, system lay-up and reactivation, crew manning, and training. All of this collectively has been incorporated into the Navy's "crawl-walk-run" approach for the program that will enable the collective Navy/industry team to be properly prepared and experienced for the magnitude and complexity of the upcoming full DDG Mod 2.0 availabilities, the first of which is scheduled for FY 2028.

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. The Navy will continue its investments in the VIRGINIA Class Material strategy to improve material stock level and continue ramping outsourced work from public shipyards to the private sector to match public shipyard demand and capacity. The Navy will continue to work with our industry partners to improve cost and schedule performance for submarine maintenance, providing valuable maintenance surge capacity.

The National Defense Strategy (NDS) transforms the foundation of the future force by designing "transition pathways to divest from systems that are less relevant to advancing the force planning guidance." PB-25 supports the NDS by divesting of less survivable force structure, resource-intensive weapon systems, and less-relevant combat platforms that are not critical to maintaining our warfighting advantage against the People's Republic of China (PRC) and Russia. Careful prioritization in the near-term will result in a Navy battle force that is more ready, sustainable, and lethal. The Navy remains committed to ensuring resources are most effectively utilized and directly aligned to supporting NDS priorities, and to support this, the Navy's FY 2025 budget proposes decommissioning 19 ships in FY 2025. Of these 19 ships, nine are at or beyond

ESL and ten are prior to ESL. The inactivation of the nine ships at or beyond their ESL is a standard practice at the end of a ship's lifecycle. Legacy platforms that are extremely expensive to repair and maintain and cannot stay relevant in contested environments must be retired in order to invest in essential capabilities the Navy needs for our national security, and the Navy has identified ten ships to divest of in FY 2025 (2 CG, 1 LSD, 2 LCS, 4 T-EPF, 1 T-ESD) to support this larger effort. The DON assesses no potential gaps in warfighting capability will result from removing the projected ships from service. Navy will only grow ready, lethal, warfighting capacity at a rate supported by fiscal guidance and our ability to sustain that capacity in the future. Therefore, PB-25 does not resource capacity beyond what can be reasonably sustained — manning, training, maintenance, ordnance, operations, and future modernization.

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 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. SIOP will improve the Quality of Service for the over 37,000 engineers, artisans, and sailors who work at the four public shipyards.

The Navy instituted a first-of-its-kind infrastructure acquisition process for SIOP, similar to major defense acquisition programs. In 2023, the SIOP-tailored acquisition process selected a preferred alternative, determined capability requirements, and established threshold and objective parameters to guide overall cost, schedule, and performance at each shipyard. The master plan to deliver these capabilities to Pearl Harbor Naval Shipyard (PHNS) has been completed.

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 \$2.0 billion appropriated in FY 2023 — the program is advancing three lines of effort: dry dock modernization, optimization, and capital equipment. The Navy has \$6 billion of SIOP construction under contract and \$577 million of capital equipment projects in progress. In Fiscal Year 2023, the program started

construction of a new dry dock at Pearl Harbor Naval Shipyard, awarded \$240 million in repair projects to maintain mission readiness at the four shipyards, and continued construction of dry docks at Norfolk and Portsmouth Naval Shipyards. During the year, SIOP completed electrical upgrades of Puget Sound Dry Dock 4 and Pier 3; renovation of Dry Dock 4, flood protection improvements of Dry Docks 2 and 3, and the Production Training Facility at Norfolk; and completed caisson flood protection improvements of Dry Docks 2 and 3 and the renovation of Berth 6 at Portsmouth. To date, SIOP has delivered 138 items of capitalized industrial plant equipment to the shipyards. The President's Fiscal Year 2025 budget continues the Administration's commitment to this program and requests \$2.8 billion for SIOP.

Unmanned Surface and Undersea Vehicles

The DON remains committed to maturing the enabling and core technologies needed to deliver unmanned surface and undersea capabilities. These capabilities will serve as the backbone to achieve the hybrid fleet of the future. Employing a Family of Systems in both surface and undersea domains increases our magazine depth, standoff, and battlespace awareness while providing protection of our manned platforms and reducing risk to our sailors and marines. In FY2025, we will continue to mature our USV systems engineering pillars. We have made great strides in demonstrating reliable Hull, Mechanical and Electrical capability with our industry partners via land based testing as well as advancing our networks and radios; common core USV Combat System; vessel control software; sensory perception and mission autonomy. During 2023, USV Division 1 (USVDIV 1) successfully conducted a developmental deployment to Seventh Fleet AOR, transiting more than 39,000nm and over 1300 hours of autonomous operation.

The Navy has an operational MUSV Land-Based Test Site and will continue operating several USV prototypes including three Overlord USVs (Ranger, Mariner and Vanguard), and two Medium Displacement USVs (Sea Hunter and SeaHawk) during 2024 and 2025. In September 2023, the MCM USV program established its ACAT II Program of Record (PoR) and was approved for Full Rate Production (FRP). The MCM USV program delivers multiple capabilities to the MCM MP requirements via payload delivery systems to include mine-hunting, and minesweeping. The program continues to develop Barracuda to provide future mine neutralizing capability. The Navy remains committed to investing in a family of Unmanned Undersea Vehicles (UUVs) designed to expand the DON's reach and persistence. In December 2023, the Navy took delivery of the Extra Large Unmanned Undersea Vehicle (XLUUV) test asset which is a pier-launched UUV capable of carrying large payloads and is on schedule to deliver and test the remaining prototypes in 2024 and 2025. In

FY 2023 the Navy paused funding of the Large Displacement Unmanned Undersea Vehicle (LDUUV), which will support Subsea and Seabed Warfare (SSW) and Intelligence Preparation of the Operating Environment. However, the Navy restored funding in FY 2024 and prototype testing resumed in February 2024. The Navy is also partnering with DIU to evaluate and test large UUV commercial capabilities.

The submarine community has successfully launched and recovered both small and medium sized UUVs in FY2023 and is continuing to work on converting existing medium UUVs for torpedo tube launch and recovery capabilities during FY2024. Lionfish is the next generation fully cyber compliant, small UUV with increased capabilities relative to the legacy MK18 MOD1 system. The Navy awarded a 5-year Lionfish production contract to Huntington Ingalls Industries (HII) in September 2023 supporting procurements for Navy Expeditionary, Naval Special Warfare (NSW), and USMC forces. The Navy will continue to develop and procure small and medium UUV PoRs during FY2024 and 2025 increasing subsea and seabed warfare reach and persistence.

The Marine Corps plans in FY2024 continue developing the Long-Range Unmanned Surface Vessel (LRUSV). In July 2023, the Combat Development Directorate, Deputy Commandant for Capability Development and Integration issued a Capability Requirement Change shifting LRUSV focus from a fires mission payload in support of the Marine Littoral Regiment (MLR) to a sensor and communication mission payload as part of the Maritime Reconnaissance Company (MRC) and to pursue risk reduction activities using the prototype Unmanned Surface Vessel (USV) and Contact Vessel (CV) as surrogates for a future USV and Multi-Mission Reconnaissance Craft (MMRC).

In accordance with our plans to build a DMO hybrid fleet, the Navy and Marine Corps are conducting studies and experimentations to assess the supporting infrastructure requirements of unmanned systems, to include “motherships”. Additionally, the Navy kicked off an Unmanned Systems Expeditionary Support and Integration Requirements Evaluation Team that is looking at ashore or afloat employment capability gaps for mobility, sustainment and command and control of current and future unmanned systems at sea in all domains.

Combat Systems

The Navy remains at the forefront of global surface and submarine combat systems, continually investing in cutting-edge technology to bolster the capabilities in the Fleet. Embracing the ever-evolving landscape of commercial technology, the Navy strives to provide reliable and real-time

capabilities, breaking from traditional hardware-software dependencies. Investments continue for the Forge and the Foundry, the Navy's combat system software and hardware factories, to uphold industry standards such as Infrastructure as a Service, Platform as a Service, and Software as a Service. This approach enables the rapid deployment of iterative updates to the Aegis Weapon System and embeds continuous innovation processes into the delivery and maintenance of shipboard hardware. Increased operator feedback from Red Sea operations are driving smaller, more frequent software deliveries to the Fleet. Integrated Combat System development efforts continue within the Navy, with both new construction and existing Aegis BL9 and BL10 ships receiving upgrades through Capability Packages. In February 2024, Arleigh Burke-class destroyer USS Winston S. Churchill (DDG 81) became the first ship running a fully virtualized Aegis Combat System to successfully intercept an air target with a missile, proving that a virtualized system can work on an operational ship in a combat environment. This event marks a significant step in the Navy's plan to field a single force-level integrated combat system to all surface ships, enabling faster, over-the-air delivery and proliferation of capability.

The integration of the AN/SPY-6(V)1 Air and Missile Defense Radar (AMDR) into Aegis BL10 provides significant performance over BL9 and the AN/SPY-1 radar. This upgrade expands sensor coverage, bolstering the Navy's ability to counter increasingly sophisticated and numerous threats in the Integrated Air and Missile Defense (IAMD) mission. Building upon the design and testing maturity of the AN/SPY-6(V)1, the Navy is poised to deploy the AN/SPY-6(V)2 and AN/SPY-6(V)3 across various naval platforms including CVNs, LPDs, LHAs, and FFGs. Additionally, existing DDG Flight IIA destroyers are slated for retrofit with SPY-6(V)4, ensuring common training and sustainment benefits across the Fleet.

The Navy maintains the undersea warfare edge by constantly evolving our undersea combat systems, continuing the highly successful Submarine Warfare Federated Tactical Systems (SWFTS) modernization process for hardware Technology Insertions and Advanced Processing Build software upgrades. Leveraging commercial off-the-shelf technologies, the SWFTS modernization process enables advanced capability improvements at lower cost, delivering a decades-long progression in warfighting capabilities including advancements in the combat, sonar, electronic warfare, and imaging systems. SWFTS Technical Insertion upgrades continue to deliver more cyber resilient system architectures, more capable payload integration, and increased lethality. Additionally, the next wave of upgrades will provide a larger Common Computing Environment (CCE) footprint, paving the way for faster and more efficient modernization of the Navy's submarine combat systems. Furthering investments initiated in prior years, the FY 2025 budget supports continued adoption 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. Modernizing processes as well as capabilities will elevate the Fleet's ability to rapidly adapt to evolving threats and strategic priorities.

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 its weapons keeps the aircraft carrier relevant through the ship'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 augment and eventually 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 evolution and 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.

In the near-term, the AWOTF achieves a mix of F-35C Lightning II, F/A-18E/F Block III Super Hornet strike fighters, and EA-18G Growlers, and introduces the MQ-25 Stingray unmanned air vehicle (UAV). The MQ-25 will take over the air wing's organic aerial refueling mission, extending strike range and persistence, enhancing maneuverability, and enabling all strike fighters to focus directly on delivering effects in the high-end fight. In the mid and long term, the AWOTF will deliver game-changing lethality and survivability through the Next Generation Air Dominance Fighter (F/A-XX), further development and capability integration of unmanned systems, and continued development of jointly integrated multi-domain kill-chains.

The 2024 NDAA granted the Navy relief from the Title 10 requirement to stand up a 10th CVW by October 1, 2025 pending SECNAV submission of a report to congress analyzing potential approaches to the manning, operation, and deployment of a 10th CVW. That report is on schedule to

be submitted by the end of the current fiscal year. The current CVN maintenance schedule efficiently pairs nine CVWs to nine operational CVNs according to ship availability; 11 total CVNs with two under planned service-life maintenance. With an 11 CVN force structure, nine CVW are the optimal number of air wings for readiness, capability, and force generation.

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

The Marine Expeditionary Unit (MEU) is the embodiment of the Marine Air-Ground Task Force (MAGTF), providing the nation with a critical strategic capability for naval campaigning, crisis response, and contingency operations. Deployed on a 3-ship Amphibious Ready Group (ARG), Marines and Sailors leverage the maritime domain as maneuver space to posture without the constraints and restraints of access, basing, and overflight. The self-sustained and flexible ARG/MEU can swiftly transition from steady-state competition and campaigning to crisis response or high-end warfighting without external augmentation, playing a vital role in integrated deterrence, global campaigning, and reinforcing American resolve.

As a lethal, forward-deployed, sea-based expeditionary force, the ARG/MEU operates across a spectrum of military operations with a tailorable and uniquely suited complement of aircraft. The MEU's Aviation Combat Element (ACE) inventory includes the F-35B, MV-22B, H-1, and CH-53E/K. The F-35B, the sole 5th Generation platform designed for amphibious warfare ships and expeditionary landing fields, stands as a cornerstone of Marine Corps' modernization efforts, integral to the Stand-in Force concept, and a crucial enabler for the Joint Force. Offering strategic agility, enhanced situational awareness, and increased maneuverability in contested environments, the F-35B provides commanders with a decisive advantage.

The MV-22B tiltrotor aircraft remains the most capable assault support platform in the joint inventory, revolutionizing assault support with its superior speed, range, and survivability. The H-1s, with their versatility, remain pivotal for the MEU's crisis response force and have played an indispensable role in safeguarding our capital ships. Finally, the new CH-53K, the only fully marinized heavy-lift rotorcraft, serves as a critical asset for mobility and logistical support in distributed operations within contested environments.

The ARG/MEU team represents one of the nation's most capable crisis response tools, persistently forward deployed and ready to provide Combatant Commanders with options across the spectrum of military operations. With its complement of capable aviation platforms, the MEU ACE ensures seamless projection of power from the sea, air, and land, bolstering the ARG/MEU's organic operational mobility.

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 FY 2025 budget retains and fully funds the EA-18G aircraft and squadrons across the FYDP. Next Generation Jammer (NGJ) pods will augment and eventually replace the legacy ALQ-99 pods on the EA-18G to provide full spectrum integrated non-kinetic effects. The delivery of NGJ Mid-Band (MB) increases EA-18G Growler's lethality today providing a multi-generational leap in capability against adversary radars and communication targets utilizing advanced AEA techniques, as well as improved reliability and maintainability over legacy ALQ systems. NGJ is phased by threat, with initial focus on MB spectrum capability, followed in the future by Low-Band (LB) capability. NGJ High Band remains unfunded.

NGJ-MB is a cooperative development and production program with Australia, with Full Rate Production Decision expected in 3QFY2024. Three LRIP I shipsets were delivered in FY23. The first LRIP II shipset were delivered in 2QFY2024 with the remaining four LRIP II shipsets planned for delivery in FY24. Upon conclusion of operational test, IOC and initial deployment will occur in FY 2024. The FY 2025 budget includes \$86.7 million in RDT&E funding to continue 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 FY 2025 budget request also includes \$453.2 million in APN-5 funding for 10 Lot 5 shipsets, associated support equipment, training equipment and production support.

NGJ-LB is also a cooperative development program with Australia and 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 where modern adversary radars have proliferated posing significant threats to joint forces. The FY 2025 budget request \$209.6 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 AWOTF.

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 air and sea superiority, and to counter adversary 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 (NIFC) system of systems linking Navy and Marine Corps fighter aircraft, Navy surface combatants, and Marine Corps ground units.

As of March 2024, the Navy has taken delivery of 60 E-2D aircraft with an additional 20 in production or on contract. Modernization priorities focus on Fleet capabilities to outpace the threat, including interoperability, communication and navigation hardware; essential Command and Control; networking and sensor performance capabilities that are critical enablers to Naval Integrated Fire Control; and vital upgrades and improvements to enable Joint All-Domain Command & Control (JADC2).

ASSAULT SUPPORT AND INTRA-THEATER LOGISTICS SUPPORT AIRCRAFT

Tiltrotor Aircraft (Marine Corps Osprey and Navy CMV-22B)

The V-22 tiltrotor capability remains in high demand from Combatant Commanders for the essential transportation of personnel and equipment in support of worldwide operations. Navy CMV-22B, in coordination with Navy Unique Fleet Essential Airlift (NUFEA), provide the last leg of Navy Intra-theater Airlift (NITA) for time-critical cargo and personnel from distributed logistics sites essential to extending the range of CSGs, SAGS, and ESGs during DMO. The V-22 program

is focused on remaining ready, reliable, and relevant in support of naval operations, with the safety of aircrew and personnel as the number one priority.

In 2025, the program continues progress towards improvements in safety and reliability through enhancements to the design and monitoring of critical components, including the V-22 drive system. The Osprey Drive System Safety and Health Instrumentation (ODSSH) system provides continuous monitoring of the components of the drive system to identify issues prior to in-flight experiences. The tragic mishap of an Air Force CV-22 off the coast of Japan reinforced the need for this type of system on the V-22, which is critical to the continued safe operation of Navy and Marine Corps V-22s.

The Navy CMV-22 program declared IOC in December 2021, and completed its third deployment in 2023, in support of the USS Carl Vinson CSG. The FY 2025 budget requests \$109.4 million in RDT&E for continued development of the Input Quill Assembly re-design, Digital Helmet Mounted Display for operations in Degraded Visual Environment, as well as other product improvements to maintain tactical relevance in support of modernization.

The FY 2025 budget also includes \$295.2 million in APN for modifications to maintain commonality, implement safety and reliability improvements, improve capability, and support production line shutdown and engineering support through delivery of the final Lot 28/FY 2024 aircraft. The FY 2023 congressional add procured four CMV-22 funding the Navy for the full program of record quantity of 48 and one MV-22 funding the Marine Corps for the fully program of record quantity of 360. The FY2024 congressional add will procure five additional CMV-22 for the Navy. Production Line Shutdown for MV-22 and CMV-22 begins in FY 2024.

Heavy Lift (Marine Corps CH-53K)

The CH-53K replaces the legacy CH-53E as a faster, more efficient heavy lift helicopter with greater payload capacity than any current or emerging rotorcraft. Last year, the Marine Corps took delivery of 5 CH-53K and eclipsed 6,500 total program flight hours as the service continued the transition from the legacy platform to the CH-53K. In October 2023, Marine Heavy Helicopter Squadron 461 demonstrated the unique performance of the CH-53K when it recovered a crashed MH-60S at an altitude of ~10,000 ft in terrain unreachable by vehicles. This is the only aircraft capable of such a feat. In FY 2024, the program continues execution of Follow-On Test and Evaluation activities focusing on secondary missions testing, updated aircraft survivability equipment testing, interoperability testing, and correction of deficiencies. All System Development

and Demonstration flight testing completed in 2023 with ground testing planned to complete this year.

Last year the CH-53K program awarded Lot 7, the first Full Rate Production lot and the first year of two-year block buy contracts for aircraft and engines with plans to award Lot 8 in FY 2024. The DON is requesting FY 2025 Congressional authorization for another two-year block buy contract for airframes and a five-year multi-year contract for engines. These opportunities leverage aircraft volume quantity to realize significant cost savings, encourage improved production efficiencies, and provide much needed stability to the rotorcraft industrial base. The FY 2025 President's Budget requests \$86.1 million in RDT&E to continue the CH-53K development, test, and standup of organic test capabilities for follow-on improvements and \$2.642 billion in APN for procurement of 19 Full Rate Production aircraft, initial spares, and modifications.

EXECUTIVE SUPPORT AIRCRAFT

The VH-92A Presidential Helicopter provides worldwide safe, reliable, and secure executive transportation with survivability, maintainability, and reliability improvements over the legacy VH-3D and VH-60N. Production of VH-92A completes in FY 2024 while the program continues to focus on improvements to support all mission types. The FY 2025 President's Budget requests \$51.4 million in RDT&E for VH-92A Helicopter Improvements which supports product improvements related to mission systems, maintainability, reliability, and obsolescence issues. These efforts include Mission Communications System hardware and software upgrades, Wideband Beyond Line-of-Sight capability enhancement, distributed network communications, cockpit upgrades, extended range cabin noise reduction, power margin, high-hot aircraft performance enhancements, and improved rotor blades. APN in the amount of \$69 million is required for mission computer software efforts including modifications to the VH-92A Mission Communications System.

FIXED-WING AIRCRAFT

TAKE CHARGE AND MOVE OUT (TACAMO)

The Navy's TACAMO mission is to deliver and provide survivable, reliable, and enduring airborne nuclear command, control, and communications (NC3) capabilities to the President, Secretary of Defense, and the United States Strategic Command. The TACAMO mission is

currently flown on the aging E-6B Mercury, a Boeing 707 airframe. The platform is undergoing simultaneous sustainment and modernization efforts, but TACAMO requires a new platform to ensure continued success of the mission in the future. The TACAMO recapitalization (E-XX) program will utilize the C-130J-30 (stretched Super Hercules) aircraft as the air vehicle replacement with a combination of existing and modernized NC3 mission systems developed and integrated onto the platform by a third-party contractor.

In FY 2025, the Navy will invest \$775.3 million in RDT&E toward platform development. This includes \$659.9 million for the TACAMO Weapon System (TWS) Engineering and Manufacturing Development (EMD) contract, \$15.2 million for non-recurring engineering contracts on the C-130J airframe, and \$15.2 million for very low frequency (VLF) transmit system development and modernization. The TWS EMD contract has a planned award in first quarter FY 2025 and will provide for the modification and integration of NC3 systems onto the C-130J-30 for the TACAMO mission. FY 2025 sets 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 the DoD's only long-range full-spectrum Anti-Submarine Warfare (ASW), cue-to-kill platform, with substantial armed Anti-Surface Warfare (ASuW) and networked Intelligence, Surveillance, and Reconnaissance (ISR) capabilities. The P-8A program continues to incrementally field warfighting capabilities via Engineering Change Proposals. Increment 3 Block 2 (Inc 3 Blk 2) is on track to initially field in FY 2026 and delivers the final planned spiral upgrade to the platform to fulfill the validated baseline requirement for full ASW, ASuW and ISR warfighting capability at the Higher-than-SECRET (HTS) level. Inc 3 Blk 2 provides the full war-fighting capability required for Major Combat Operations (MCO) incorporating HTS processing, Integrated Broadcast System (IBS), ASW-Signals Intelligence (SIGINT), Multi-static Active Coherent-Enhanced (MAC-E), enhanced track management and sensor fusion (Minotaur) and Wide Band Line of Sight (WBLOS) SATCOM capability.

The FY 2025 budget request includes \$173.5 million in RDT&E for final integration, completion of DT and commencement of OT testing for Inc 3 Blk 2 and additional rapid capability development efforts, such as LRASM testing, to pace emergent threats. \$319.6 million in APN is

requested to fund additional ECP-6/7 kits for fleet instructor training and squadron transition 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 FY 2025 (for final line shutdown in FY 2027) if no additional P-8A orders are received.

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 multi-domain integrated naval 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 FY 2025 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, persistence, 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 service life. MQ-25 is integral to the AWOTF and establishes the foundation for MUM-T and autonomous operations from the CVN. The FY 2025 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 FY 2025 budget request supports procurement for the MQ-25 Stingray with \$552.3 million in APN and continues RDTE funding with \$214.94 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 build and maintain a more lethal and effective global Joint Force Common Operational Picture.

The program is in the process of standing up its second and third operational orbits in the USEUCOM and USCENTCOM AORs (FY24/25), after successfully standing up its first orbit in INDOPACOM in FY23. The multi-intelligence (Multi-INT) variant of Triton is currently executing in the western Pacific, providing Combatant and Fleet commanders with timely and actionable intelligence products.

The FY 2025 budget requests \$281.2 million in APN to continue procurement of associated support elements and retrofit baseline units to Multi-INT configuration, and \$14.4 million in baseline RDTE for correction of deficiencies. An additional \$428.4 RDTE is requested for advanced MQ-4C safety systems and sensor modernization efforts as part of Increment 2 capability development efforts.

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 decision-makers, 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, 16 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 FY 2025 budget requests \$6.6 billion for the Weapons Procurement account. Signifying a commitment to modernize our arsenal with crucial capabilities to bolster readiness. Additionally, a substantial portion of this funding is allocated to expanding production capacity, aimed at increasing critical munitions inventories.

Continued U.S. assistance to Ukraine, Israel, and operations in the Red Sea during Operation Prosperity Guardian underscores the imperative for investments across the industrial base to bolster readiness for the U.S., its allies, and partner nations. The DON collaborated closely with industry partners to accelerate the replenishment of stocks, identifying barriers to production and strategizing on targeted investments to enhance inventory, capability, and capacity. Investment continues to be directed toward expanding and expediting production throughput, optimizing testing processes, and fortifying critical component supply chains. Concurrently, the Department intensifies its focus on recertification as a cost-efficient method to maintain and enhance short-term inventory levels. Together with these ongoing replenishment efforts, these investments signal a steadfast and stable demand signal to prioritizing munitions inventories.

Leveraging authorities extended in the FY2024 National Defense Authorization Act, the Department pursues MYP contracts for vital 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. This strategy harnesses savings generated through Economic Order Quantity (EOQ) financing to procure additional missile lots, thereby enhancing efficiencies and yield.

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 2040s, 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 2030s 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.

Tomahawk

The Navy is continuing investment into Tomahawk Block V new production, Maritime Strike Tomahawk, and recertification/modernization of Tomahawk Block IV. Ally and partner interest in Tomahawk capability emphasized missile production throughput challenges. The FY 2025 budget request continues to fund factory improvements to increase industrial capacity, increasing throughput to 600 missiles per year by FY27.

In the FY 2025 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 FY 2025 budget request for MST provides continuation of Operational and Integration Testing and ultimately fields hardware, software, and munitions for the MST capability in 2025. The FY 2025 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 FY 2027. The FY 2025 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 capability to the Tomahawk BLK V missile in 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 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 FY 2025 President's Budget requests \$102.5 million in procurement funding to buy 30 DON LRASM C-1 weapon systems with associated support to provide economic order quantity funding in support of the MYP initiated in

FY24, and to provide the assets for operational test of the C-1 configuration. The FY 2025 President's Budget request also includes \$163.3 million in RDT&E funding for the continuing development of the LRASM C-3 capability improvement. Navy AGM-158 development efforts involve integration of a Beyond Line-of-Sight radio subsystem to enable enhanced operational flexibility.

The FY 2025 President's Budget continues developing the AGM-158 C-3 variant through software development and test, platform integration, and entry into integrated test. The FY 2025 President's Budget request also includes \$223.9 million for procurement of 60 LRASM in the C-3 configuration migrating the primary production line to the more-capable C-3 configuration as the program reaches sufficient maturity.

The FY 2025 President's Budget includes \$178.6 million for development of OASuW Increment 2, which is now referred as Hypersonic Air Launched OASuW (HALO). HALO supports the national imperative to mature hypersonic capabilities and transition them into warfighting systems, increasing the lethality and deterrent effect of our Carrier Wings. The program represents a longer-term capability that encompasses increased performance and will provide the Navy with the necessary air-launched, carrier-based weapon to address evolving long-range, -threats from near peer competitors. HALO will complete Milestone B and enter formal Engineering and Manufacturing Development, to include a competitive contract award during FY 2025.

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

AARGM domestic procurement completed in FY 2021 with the award of the last Navy Full Rate Production (FRP) contract. There have been 1450 AARGMs (All Up Rounds, Training Missiles, and Spares) delivered to the Fleet as of March 2024. Program of record delivery is 1803 missiles. Deliveries continue through FY 2025 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 3QFY24. The FY 2025 President's Budget requests \$22.3 million in RDT&E to support operational and integration testing of production representative hardware. The budget requests \$248.6 million in Weapons Procurement, Navy (WPN) to procure 151 AARGM-ER all-up-rounds and six Captive Air Training Missiles and advance procurement.

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 missile design and joint 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. In March 2020, the Services executed a successful flight test of the Common Hypersonic Glide Body, and in 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 is continuing subscale and component testing in support of future capability development, 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 FY 2025 budget request will support critical milestones on the path to fielding CPS to the first Zumwalt Class DDG. The request totals \$903.9 million in CPS R&D funding.

The Marine Corps is working towards 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

As the primary weapon in maintaining an advantage in the undersea domain, Heavyweight and Lightweight Torpedoes remain a critical component of the Department's munitions inventory. Continued investments in torpedo capacity and capability are vital to outpace our strategic competitors. The MK 48 Heavyweight Torpedo remains the Navy's primary submarine-launched ASW and ASuW weapon, while the MK 54 Lightweight Torpedo provides additional undersea dominance from the surface and air domains. The Navy continues to modernize and upgrade existing inventory to incorporate the latest capability advancements, the Navy has also restarted production of the MK 48, ramping up production through FY23 after accepting delivery of the first new production heavyweight torpedoes in over twenty years during the summer of 2022.

Furthermore, the MK 48 MOD 8 and MK 48 MOD 9 will bring new capabilities and technologies to ensure our advantage is maintained well into the future. The Department also continues to deliver and upgrade MK 54 Lightweight Torpedoes to surface ships and air platforms to maintain our edge over the ASW threat. Producing the upgraded MK 54 MOD 1 for the U.S. Navy as well as MK 54 MOD 0 torpedoes for our allied partners ensures the torpedo industrial base remains healthy.

The Department continues its partnership with industry and university affiliated research centers to develop next-generation torpedoes. These include the MK 54 MOD 2 Advanced Lightweight Torpedo designed to fight the high-end threat, and the Compact Rapid Attack Weapon, a Very Light Weight Torpedo with multi-mission capability providing both a hard-kill torpedo countermeasure and a short range ASW weapon. The Navy continues to procure the High Altitude ASW Weapon Capability (HAAWC) wing kit to employ MK 54 from high altitude via the P-8A, and we've made great progress in developing the Hammerhead encapsulated effector, continuously demonstrating the flexibility and effectiveness of MK 54 payloads for the US and our Allies.

MARINE CORPS GROUND PROGRAMS

The Marine Corps has made significant progress in modernization initiatives and is a more lethal and appropriately postured naval expeditionary force-in-readiness. By operating inside actively contested maritime spaces, the Navy and Marine Corps team provides the Joint Force a naval expeditionary warfare strategic advantage capable of operating in times of campaigning, or conflict, anywhere around the world to ensure global maritime commons remain free and open. However, operating forward within an adversary's weapons engagement zone presents unique challenges that pose threats to our networks, formations, and sustainment capabilities. As a result, the Marine Corps' Fiscal Year (FY) 2025 modernization investments prioritize resilient command and control systems, advanced air defense capabilities, and distributed logistics networks to enhance Joint Force lethality.

Command & Control and Sensing Capabilities

Through the Stand-in Force (SIF) concept, Marines will be on the forward edge of a maritime defense-in depth. The Marine Corps has a unique requirement for rapidly deployable capabilities to sense and communicate across multiple domains to project Joint Force lethality inside an adversary's weapon engagement zone. Through this concept and approach, Marines will be strategically placed on key maritime terrain to operate with allied and partners during competition, and respond to crises, or conflict to deter adversary actions, and if necessary, fight and win conflicts in support of the Joint Force. Our stand-in forces will increase maritime domain awareness, provide quality intelligence for sound decision making, diversify redundancy in asset allocation, and increase targeting successes within the anti-access/area-denial environment.

The Ground/Air Task Oriented Radar (G/ATOR) is a multi-role, ground-based, expeditionary three-dimensional radar system that provides surveillance of airborne targets, detection of cruise missiles, Unmanned Aircraft Systems (UAS), rockets, artillery, and mortars. As a sensing asset, the G/ATOR exercises its cueing capability to the appropriate air defense platform. Furthermore, the G/ATOR increases maritime domain awareness for the Naval and Joint Force by providing persistent detection of aerial threats within an interoperable network via the Common Aviation Command and Control System (CAC2S). The Marine Corps has fielded or received funding for (54) G/ATOR systems with PB25 requesting \$71.9 million to fund radar upgrades. Complementing these systems is the Medium-Range Air Defense Radar (MRADR), which will provide a persistent, high-quality, 360-degree field of view air picture with no detectable electromagnetic footprint. Although it is in development, the Marine Corps invested \$9 million for the first four prototype systems in FY24 and anticipates investing \$16 million in FY25.

The Common Aviation Command and Control System (CAC2S) enables a collaborative network of Marine Corps and Joint sensor inputs to facilitate detection and targeting decisions. The

Marine Corps continues to invest in CAC2S as the command-and-control interface for air surveillance radars and Naval Cooperative Engagement Capability. Additionally, this capability, and future enhancements, enable the Marine Corps to share air surveillance tracks and radar measurement information with Joint partners in support of integrated air and missile defense, integrated fire control, and battle management effects. The 3d Marine Littoral Regiment (MLR) received one CAC2S Small Form Factor (SFF) Data Module System (DMS) in FY23. The DMS is a SFF prototype that provides interim capability prior to SFF full-rate production in FY25. The SFF system will achieve initial operational capability in FY25 with five systems fielded and expect to achieve full operational capability in FY29 with (42) systems. The PB25 request of \$103.1 million supports these efforts to field CAC2S capabilities.

The Family of Integrated Targeting Cells (FITC) is a naval combat system that leverages data from national sources, processed and fused at the forward edge with additional tactical sensors to enable stand-in forces to support Joint Long-Range Fires (LRF) and all domain intelligence support to targeting against dynamic threats. The Marine Corps continues to invest in the FITC and the tactical-national interfaces that can support over-the-horizon awareness, identification, and targeting in contested environments. FITC is deployed at echelon for employment across multiple formations. Prototypes include the Maritime Targeting Cell – Expeditionary (MTC-X), the MTC-Mobile (MTC-M), and the Tactical Edge Node – Expeditionary (TEN-X) designed for highly mobile and dispersed units. Prototypes will demonstrate resilient networking and processing capabilities that integrate with national, commercial, and in-theater tactical feeds to increase capabilities operating at the tactical edge. Collectively, FITC uses a variety of sensors in numerous domains to create a comprehensive operational picture to drive real time decision making on behalf of the stand-in force. The PB25 request of \$104 million supports the Marine Corps efforts to field the FITC capabilities.

Air Defense

As the threat environment continues to be defined by increasing technological advancements, the Marine Air Defense Integrated System (MADIS) and Medium Range Intercept Capability (MRIC) provide complementary warfighting advantage to our naval expeditionary stand-in forces operating inside an adversary's weapons engagement zone.

The MADIS provides an upgradeable expeditionary capability that utilizes organic sensors for detecting and targeting aerial threats to increase force protection for ground forces, installations, and critical assets. Employed with a pair of Joint Light Tactical Vehicles (JLTV), the MADIS can defend against fixed and rotary wing aircraft, group 1-5 Unmanned Aircraft Systems (UAS) threats, with non-lethal electromagnetic attack and lethal fires. The approved acquisition objective is (190) MADIS systems comprised of (380) total vehicles with a \$132.2 million request to support the procurement of (13) systems in PB25. Initial operational capability is the first quarter of FY25 with the delivery of (13) systems to III Marine Expeditionary Force.

The Light-MADIS (L-MADIS) is an MV-22/CH-53 internally transportable pair of Ultra-Light Tactical Vehicles (ULTV) capable of defeating fixed and rotary wing aircraft and group 1-5 Unmanned Aircraft Systems (UAS), within the L-MADIS engagement zone, via electromagnetic attack and man portable air defense systems. L-MADIS' small size and lightweight design is tailor-built for air and amphibious assault, providing forwards postured forces organic sensors, and aviation command and control functions in a littoral environment. The approved acquisition objective is (21) systems consisting of (42) ULTVs with a \$33.2 million request to support procurement of (5) systems in PB25. Initial operational capability scheduled for the second quarter of FY25 with the delivery of three systems to III Marine Expeditionary Force.

Complementing the Marine Corps air defense capabilities, the MRIC defends forward-deployed forces and installations against threat cruise missiles, fixed and rotary wing aircraft, groups

3-5 UAS, and other aerial threats. This is accomplished through the integration of fielded Marine Corps systems including the CAC2S, the TPS-80 G/ATOR, the Iron Dome Battle Management Control console, and the SkyHunter missile and guidance uplink. In February 2024, industry partners broke ground establishing a U.S. based production facility in Camden, AR which will ensure continued access to a supply of domestic produced interceptor missiles. The Marine Corps currently plans to field a firing battery to each Marine Expeditionary Force (MEF) that can distribute four independently deployable firing platoons.

The Marine Corps is utilizing a Middle Tier Acquisition (MTA) rapid prototyping approach to procure and certify an MRIC prototype platoon that provides an initial capability by the end of FY25. The first complete battery will be fielded by FY26 followed by an additional battery in FY27 and FY28. In total, the Marine Corps seeks to field three firing batteries with several hundred missiles for each battery. The FY25 request of \$111 million supports the procurement of (12) launchers and (242) missiles to begin fielding the MRIC capabilities to forward deployed Marine formations.

Marine Corps Global Positioning Network (MCGPN)

Global sustainment operations are at risk of being contested from our home stations and bases to our forward postured forces. Therefore, the Marine Corps is actively wargaming, experimenting, and modernizing logistics capabilities to sustain Marines in these contested spaces. Sustainment modernization efforts include expanding the positioning of materiel, and diversifying distribution capabilities through the Marine Corps Global Positioning Network (MCGPN). The MCGPN is an integrated global network of materiel positioned afloat and ashore in key strategic locations that support operations and active campaigning by the Marine Corps.

The MCGPN includes the current afloat Maritime Prepositioning Force (MPF) and the Marine Corps Prepositioning Program in Norway (MCPN), as well as multiple ashore sites we are

preparing to establish in the Indo-Pacific. The Service has programmed resources for the establishment of three sites in the Indo-Pacific as a priority effort across FY24 and FY25. In FY24, the Marine Corps received \$44 million for one ashore based MCGPN site, and in FY25, the Marine Corps is requesting an additional \$38.5 million for an additional two sites. Ashore sustainment sites strengthen our relationships with allies and partners by providing forward stocks for humanitarian assistance and disaster relief, as well as critical capability sets during potential conflict.

Additionally, the Marine Corps continues to expand its methods and nodes available to the installation and logistics enterprise for staging, delivering, and recovering mission critical assets and logistics services. We are investing and experimenting with emerging unmanned platforms for smaller form-factor logistics support from the air. Fielding has begun for the Tactical Resupply Unmanned Aerial System (TRUAS) as the smallest in a family of unmanned aerial logistics systems. The TRUAS has an authorized acquisition objective of (179) systems and achieved initial operating capability in the first quarter of FY24 with the fielding of the first systems to 3d Marine Littoral Regiment (MLR) in Hawaii. The PB25 request of \$16.1 million supports procurement of systems in pursuit of reaching full operating capability in FY28. For the medium variant, the Marine Corps is conducting rapid prototyping of the Medium Aerial Resupply Vehicle Expeditionary Logistics (MARV-EL) utilizing other transaction authority to develop two prototype systems. In FY24 the program will down select to one of these two prototypes and begin assessment of the medium capability to enable planned acquisition. The PB25 request includes \$17.2 million in research, development, testing, and evaluation (RDT&E) to further mature MARV-EL prototypes and develop a production representative system.

Campaign of Learning

Through an iterative, threat informed, and concept-based approach, the Marine Corps utilizes a campaign of learning to inform its balanced approach focused on modernizing a force that stands-

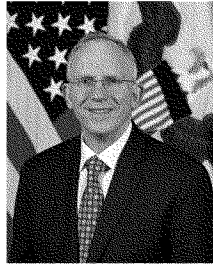
in during competition, is postured to respond to crisis, and organically move, fight, and win during conflict. To enhance our modernization efforts, the General Robert B. Neller Center for Wargaming and Analysis (Neller Center) will provide a comprehensive digital environment to conduct fully informed, data-enabled wargames that contribute to the Service's balanced approach to modernizing a force that campaigns during competition, is postured to respond during crisis, seizes and defends key maritime terrain during conflict.

The state-of-the art venue will enable wargaming within threat-informed future operating environments at multiple classification levels to support senior leader decision-making. The Neller Center's primary use will be facilitating concept development, capability development, and operational decisions and plans. The Neller Center is expected to achieve initial operating capability in FY26 and full operating capability in FY28. At full operating capability, the Neller Center will possess the capability to ingest authoritative data accessed through twenty-one U.S. and coalition networks; and to conduct distributed wargames employing a collaborative electronic wargaming environment networked to an array of partners. Critical to achieving the Neller Center's optimal employment are the wargaming software material solution, and the Information Technology (IT) and Audio-Visual (AV) infrastructure. The IT/AV infrastructure includes complex programs requiring cyber authorizations of many technologies at all classification levels involving multiple approvals. The software material solution will require sustained resources to ensure the wargaming technology is current with the changing threat environment. The PB25 request includes \$13.9 million in software and hardware to reach critical milestones in the Neller Center's development.

Conclusion

Today's the Marine Corps is prepared to serve as a naval expeditionary force-in-readiness and operate inside actively contested maritime spaces in support of Joint campaigns. Continued experimentation and learning from real-world threats will undoubtedly uncover additional

refinements to enhance our force, we are confident our collective efforts will result in a Marine Corps organized, trained, and equipped to meet the global challenges of the 21st century.



NICKOLAS H. GUERTIN

The Honorable Nickolas H. Guertin was sworn in as Assistant Secretary of the Navy for Research, Development and Acquisition in December 2023. Mr. Guertin has an extensive four-decade combined military and civilian career in submarine operations, ship construction and maintenance, development and testing of weapons, sensors, combat management products including the improvement of systems engineering, and defense acquisition. Most recently, he has performed applied research for government and academia in software-reliant and cyber-physical systems at Carnegie Mellon University's Software Engineering Institute.

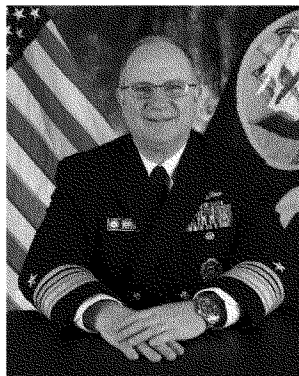
Over his career, he has been in leadership of organizational transformation, improving competition, application of modular open system approaches, as well as prototyping and experimentation. He has also researched and published extensively on software-reliant system design, testing and acquisition. He received a BS in Mechanical Engineering from the University of Washington and an MBA from Bryant University. He is a retired Navy Reserve Engineering Duty Officer, was Defense Acquisition Workforce Improvement Act (DAWIA) certified in Program Management and Engineering, and is also a registered Professional Engineer (Mechanical).

Mr. Guertin is involved with his community as an Assistant Scoutmaster and Merit Badge Counselor for two local Scouts BSA troops as well as being an avid amateur musician. He is a native of Connecticut and now resides in Virginia with his wife and twin children.



Vice Admiral James Pitts

Deputy Chief of Naval Operations for Warfighting Requirements and Capabilities, N9, Office of the Chief of Naval Operations



Vice Adm. James Pitts, a native of Milton, Florida, is a 1986 graduate from the U.S. Naval Academy with a Bachelor of Science in Mechanical Engineering. Following his first sea tour, he attended the Naval Postgraduate School where he earned a Master's degree in National Security Affairs.

At sea, his first submarine assignment was aboard USS Grayling (SSN 646). Additionally, he was temporarily assigned to USS Plunger (SSN 595) for a Western Pacific deployment, where he qualified in submarines. Follow-on assignments include: navigator on USS Hammerhead (SSN 663); combat systems officer on USS Hyman G. Rickover (SSN 709); and executive officer of USS Tucson (SSN 770). His at-sea command assignments were as commanding officer of USS Tucson (SSN 770) and commander,

Submarine Squadron Seven.

His shore and staff assignments include: Office of the Chief of Naval Operations, N87 Submarine Warfare Division; prospective executive officer instructor at Naval Submarine School; deputy commander for Submarine Squadron (SUBRON) Three; Program and Budget Branch chief on the Joint Staff; Strategic Studies Group CNO Fellow; Office of the Chief of Naval Operations, N8 Staff as the Planning, Programming & Development Branch head; executive assistant to N9; Undersea Warfighting Development Center, as Commander; and commander, Submarine Group Seven/Commander, Task Force 74/Commander, Task Force 54 in Yokosuka, Japan. Most recently, Pitts served as director, Warfare Integration, on the staff of the office of the Chief of Naval Operations. He assumed duties as the DCNO for Warfighting Requirements and Capabilities in December 2023.

VADM Pitts' awards include the Defense Superior Service Medal, Legion of Merit, Meritorious Service Medal, Navy Commendation Medal, Navy Achievement Medal, and various unit, campaign, and service awards.



CG, MCCDC / DC, CD&I

LIEUTENANT GENERAL KARSTEN S. HECKL

Lieutenant General Karsten Heckl currently serves as the Commanding General, Marine Corps Combat Development Command, and the Deputy Commandant for Combat Development and Integration.

A native of Stone Mountain Georgia, Lieutenant General Heckl graduated from Georgia State University and was commissioned in April 1988. He was designated an unrestricted Naval Aviator in September 1990.

Lieutenant General Heckl commanded Marine Medium Tiltrotor Squadron 162, which included a combat tour in Iraq in 2008 and Marine Aviation Weapons and Tactics Squadron One (MAWTS-1) in 2010. From June 2018 to July 2020 he served as the Commanding General, 2d Marine Aircraft Wing, and subsequently assumed command of I Marine Expeditionary Force through September 2021.

As a CH-46E pilot, Lieutenant General Heckl deployed with Marine Medium Helicopter Squadron (HMM) 365 and HMM-263, and served as a CH-46E Instructor and Division Head at MAWTS-1, MCAS Yuma, AZ. Additionally, he was assigned as one of the initial cadre of pilots with Marine Medium Tiltrotor Training Squadron 204 (VMMT-204).

Staff assignments include CH-46E and MV-22 Requirements Officer, Headquarters Marine Corps (HQMC) Aviation Department, Washington DC; J3 Director of Operations, United States Forces- Afghanistan (USFOR-A), Kabul, Afghanistan; Senior Military Assistant and Marine Aide to the Secretary of the Navy; Assistant Deputy Commandant for Aviation, HQMC Aviation Department, Washington DC; Chief of Staff, Naval Striking and Support Forces NATO (STRIKFORNATO), Lisbon, Portugal.

Lieutenant General Heckl is a distinguished graduate of the Amphibious Warfare School (AWS) and the Naval War College.

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

APRIL 17, 2024

QUESTIONS SUBMITTED BY MR. GARAMENDI

Mr. GARAMENDI. For years, I had to push the Navy to finalize a rule on procurements within the NTIB. It seems very often the Navy is seeking loopholes and waivers to try and evade Buy-America requirements, so I am glad to see that the Navy has finally implemented the NDAA section requiring auxiliary ship components be procured from a manufacturer in the NTIB. Why did it take so long? Can you ensure me that the Navy is working to grow its purchases of American parts and goods and not just look for cheap discounts elsewhere?

Mr. GUERTIN. The Navy's ability to build and maintain the fleet is dependent on a healthy and resilient domestic defense industrial base. In this vein, the Navy complies with all relevant domestic sourcing and Buy American laws to leverage the use of U.S. manufacturers. Components purchased by the Navy and its prime contractors from non-domestic sources account for a small percentage (10% or less) of the cost of a Navy ship. The limited use of global suppliers in naval shipbuilding programs is beneficial, often allowing the Navy to leverage leading commercial technologies and economies of scale, resulting in more buying power and a more capable fleet. The Navy is in compliance with 10 U.S. Code § 4864, "Miscellaneous Limitations on the Procurement of Goods other than United States Goods", which limits procurement of certain components for naval and auxiliary vessels to the National Technology and Industrial Base (NTIB), consisting of the U.S., United Kingdom, Australia, New Zealand, and Canada. Furthermore, the Navy is compliant with domestic sourcing restrictions that impact the T-AO, FFG, AS(X), T-ARC, and T-AGOS class and remains committed to maintaining a healthy and resilient shipbuilding industrial base.

Mr. GARAMENDI. 10 USC 4851 requires that the Department of Defense "consider the effects of such existing or proposed memorandum of understanding or related agreement on the defense technology and industrial base of the United State". Given that RDP Agreements recently noticed in the Federal register include agreements with countries that have a large, shipbuilding industry, has the Navy been consulted about the impact that Reciprocal Defense Procurement Agreements with partners would have on the shipbuilding industrial base of the United States? If so, how has the Navy assessed the impact of such agreements on domestic shipbuilders and suppliers? If the United States signed a Reciprocal Defense Procurement Agreement with a major partner or ally, would the Navy use that authorization to grow its purchases of foreign components as a 'qualifying nation'?

Mr. GUERTIN. The Navy recognizes health and competition in our domestic shipbuilding industrial base and supply chain are vital to meeting our National Defense Strategy. As noted, the U.S. is - and will continue to be - party to various international agreements and reciprocal purchase agreements. The limited use of global suppliers in naval shipbuilding programs is beneficial, often allowing the Navy to leverage leading commercial technologies and economies of scale, resulting in more buying power and a more capable fleet. Additionally, these international agreements allow our domestic suppliers to sell internationally to foreign partners, thereby strengthening our industrial base.

RESPONSE TO QUESTIONS SUBMITTED BY MR. LALOTA

Mr. LALOTA. Increasingly, there are reports of adversaries threatening US allies through the use of sea and/or ocean-bottom mines. This is certainly the case in the Black Sea where Russia has employed mines along the Ukrainian coast. It is also expected that sea mines would be a component of Chinese military plans should that country attack Taiwan and Iranian-aligned groups looking to disrupt trade in the Red Sea or Persian Gulf. Does the US Navy anticipate employing mine countermeasure (MCM) assets either during a hot conflict or post conflict in these areas? If so, does the Navy currently have sufficient organic assets to adequately service multiple areas simultaneously? It is also my understanding that, based on Navy documentation, this gap is to be addressed in part by using "Vessels of Opportunity" equipped with mobile mission modules, in effect, using VOOs as a fleet multiplier.

Can you explain for the Committee the Vessels of Opportunity concept and what capability is needed to make these non-combat platforms mission viable?

Admiral PRITS. 1) Navy anticipates most MCM operations would take place once air and sea control of an area has been established, allowing for permissive operations of manned and unmanned systems deployed from a host MCM platform. This is consistent with existing MCM CONOPS and Fleet planning. MCM operations in a conflict is possible, however, it would be a risk decision that joint and maritime task force commanders would make. In such a scenario, platforms and remote systems would most likely be assigned dedicated protection.

2) Navy can conduct MCM operations in multiple areas around the world today by employing currently forward-deployed legacy MCM platforms and Expeditionary MCM companies. Additionally, if necessary, combatant commanders could surge assigned forces from adjacent geographic command areas of operation to provide additional capacity in a needed location. Navy procurement and deployment plans for the MCM MP comply with NDAA direction to provide replacement capability and capacity before retiring the legacy MCM platforms, which are currently forward-deployed to multiple combatant commands. Navy procurement plans also project the fielding of additional MCM MP onboard Independence LCS platforms, providing the Joint Force additional capacity to support homeland and other geographic areas. Plans also include a future quantity of expeditionary MCM MPs that could be deployed from any shore location or vessel of opportunity equipped with the correct logistical support. The exact total quantity is pre-decisional but will result in additional capacity to support several simultaneous MCM clearance tasks.

3) Navy has employed the Vessels of Opportunity (VoO) concept for MCM operations for decades - from various US Navy Afloat Forward Staging Bases (AFSB), from Bay-class dock landing ships built for the British Royal Fleet Auxiliary (RFA), as well as from other platforms. Both components of the Navy's Modular MCM force (the ExMCM companies and MCM Mission Package) have shown the ability to be employed from VoO and ashore, consistent with the Fleet's released Non-traditional MCM CONOPS. The flexibility of the modular MCM force to be employed from multiple ship types or from ashore enables rapid MCM response to maritime mining events in many areas. There is no correlation between non-combat status and ability for a platform to be employed as a VoO.

RESPONSE TO QUESTIONS SUBMITTED BY MR. GOLDEN

Mr. GOLDEN. Provide the amount of additional funding needed to procure a third DDG in FY25.

Mr. GUERTIN. In order to procure a third DDG-51 FLT III ship in FY25, the Navy would require an additional \$1,431M FY25 Full Funding to exercise a FY25 Option Ship. A third FY25 ship would require \$2,789M, but the Navy has already received FY24 Advance Procurement (AP) funds of \$1,357M for a third FY25 ship (\$77.3M re-aligned FY23 AP funds and \$1.28B Congressionally added FY24 AP funds).

RESPONSE TO QUESTIONS SUBMITTED BY MR. JACKSON

Mr. JACKSON. What are the Navy's efforts to address CMV-22 ice protection system material challenges and what upgrades will be incorporated into this system?

Mr. GUERTIN. The Navy has been actively addressing the challenges identified with the CMV-22's Ice Protection System (IPS) through a series of mitigations and modifications. These efforts are aimed at improving the system's reliability and performance. One of the key issues identified in the Operational Test Readiness Review was the unacceptable rotor damage caused by the IPS heater blanket and solder tab failures. These components have been identified as the top contributors to arcing and burning damage to the rotor blades and spinner panels.

To address these issues, several mitigations and modifications were implemented:

1) Spinner Dome: A solder joint reinforcement repair/modification for all fleet aircraft was successfully verified in September 2021. An engineering change proposal was signed off to move the solder joint location to a low-strain area. A stiffener fastener and edge sealant were added to prevent stiffener disbonding. The retrofit will occur via attrition of the component with an expected completion in 2QFY29. Spinner Dome supply improvement efforts involving both the vendor and depot have also been completed.

2) Rotor Blades: In 2022, changes were incorporated into the blade repair procedures via an Engineering Change Procedure. This was done to enhance the reliability and effectiveness of the blade repairs, which included reflowing and adding

solder over a larger area for strength, as well as the option to apply a braid to the wiring.

3) Software Fixes: Improvements have been made to the IPS health check to reduce component burn-through. This is now part of the baseline CMV-22 software. Another software fix, IPS 123, was released in January 2021 and has reduced false alarms and improved fault isolation and detection. Additional software changes are in work to allow the operator to isolate specific Ice Protection Sub-System tests to avoid system failures while conducting pre-flight built-in tests.

4) Naval Air Training and Operating Procedures (NATOPS) Operational Procedure Update: An update to the ice protection system limitations was incorporated into NATOPS in January 2021 which provided clarification for partial mission capable systems and the associated weather limitations. Additionally, changes to the Mission Essential Subsystems Matrix were incorporated to separate Ice Protection core/critical, de-ice, and anti-ice components to allow increased fault fidelity, inform go/no-go decisions, and increase operational flexibility.

