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HEARING
ON
NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEAR 2023
AND
OVERSIGHT OF PREVIOUSLY AUTHORIZED
PROGRAMS
BEFORE THE
COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED SEVENTEENTH CONGRESS
SECOND SESSION
—
SUBCOMMITTEE ON TACTICAL AIR
AND LAND FORCES HEARING
ON
**FISCAL YEAR 2023 MARINE CORPS
MODERNIZATION PROGRAMS**
—

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FISCAL YEAR 2023 MARINE CORPS MODERNIZATION PROGRAMS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES,
Washington, DC, Friday, May 13, 2022.

The subcommittee met, pursuant to call, at 10:01 a.m., in room 2118, Rayburn House Office Building, Hon. Donald Norcross (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. DONALD NORCROSS, A REPRESENTATIVE FROM NEW JERSEY, CHAIRMAN, SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

Mr. NORCROSS. Good morning and welcome to what is our second subcommittee hearing reviewing the Department's fiscal year 2023 budget request.

But, before I continue, I need to review the protocols for all members remotely joining the hearing. Members participating must be visible onscreen for the purposes of identity verification, establishing and maintaining a quorum, participating in the proceedings, and voting. Members must continue to use the software platform's video function the entire time while in attendance, unless they experience connectivity issues or other technical problems that render them unable to participate on camera. If a member is experiencing technical difficulties, they should contact the committee staff for assistance.

With that, I would like to turn to my opening remarks. As I mentioned, we believe we have until 11:00, maybe quarter of, but we are going to stretch that out as far as we can. We appreciate you working with us.

So, first of all, today, I would like to welcome Mr. Jay Stefany, Principal Civilian Deputy, Assistant Secretary of the Navy for Research, Development, and Acquisition; Lieutenant General Wise, Deputy Commandant for Aviation; and Lieutenant General Heckl, Commanding General, Marine Corps Combat Development Command, and Deputy Commandant for Combat Development and Integration.

Thank you for being with us today, and I look forward to this discussion.

It is important that we acknowledge the context of this year's Marine Corps modernization budget request. Three years ago, the Commandant of the Corps embarked on a significant orientation intended to better align the Corps with national security challenges posed by the realities of today and tomorrow. And certainly, any-

body who is reading any of the defense news, plenty to be said about that.

But over these 3 years, Congress has found the Marine Corps modernization strategy generally relevant, stable, affordable, and achievable. And accordingly, we have demonstrated our support.

However, modernization is not without challenges or risk. There are programs within and outside the jurisdiction of this subcommittee that certainly merit continued scrutiny. In today's hearing, we will specifically focus on rotary aviation and ground systems, which across the Marine Corps program appear generally in good shape.

We are particularly interested to hear from our witnesses assessments and impacts on the Department's equipment and munitions drawdown in support of the conflict in Ukraine.

We also look forward to hearing their thoughts on modernization management, their use of new acquisition authorities intended to accelerate research and development, and the acquisition process.

And finally, we look forward to hearing updates on specific programs, such as the CH-53K; the ACV, the Amphibious Combat Vehicle; and tactical network; the long-range anti-ship fires; and air defense.

There is much to cover, and certainly, we would like to yield to my partner here on Tactical Air and Land from Missouri.

Mrs. HARTZLER. Missouri.

[Laughter.]

Mr. NORCROSS. I am a Jersey guy. It says Missouri here. We are going with that.

But Vicky Hartzler.

[The prepared statement of Mr. Norcross can be found in the Appendix on page 27.]

STATEMENT OF HON. VICKY HARTZLER, A REPRESENTATIVE FROM MISSOURI, RANKING MEMBER, SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

Mrs. HARTZLER. Thank you, Mr. Chairman.

I would like to, first of all, thank our witnesses for being here today and for your dedicated service to our country.

Three years ago, Commandant Berger introduced Force Design 2030, a plan to radically and aggressively redesign and modernize the Marine Corps into a lighter, more lethal fighting force, better equipped and more capable to deter and defeat current and future peer adversary threats.

One of the most commendable aspects of the Marine Corps' plan was that the Marine Corps proposed paying for and resourcing the majority of this change from within. The Marine Corps has continued to deliver on their promise to transition from older platforms to newer, more capable systems in a stable, affordable, and achievable way. The majority of Marine Corps programs have remained on time, on track, and on budget, and this has not been lost on Congress.

I look forward to a robust conversation with our witnesses about the current status of the Marine Corps' 2030 Force Design development and implementation, and the critical defense programs nec-

essary to yield the Marines with the capabilities and capacities for success.

Thus far, Congress, and specifically this committee, has demonstrated our support for this program and the strategy that the Commandant has placed in front of us. I commend the Marine Corps leadership for their dedication and their hard work to continuously reassess modernization investment priorities and reallocate already limited resources to fund the development and procurement of essential defense requirements and capabilities necessary to build a more lethal defense force.

As we discuss the future modernization of Marine Corps' ground and rotary programs, I would like the witnesses to identify what risks the Marine Corps is accepting in the short term in order to keep planned modernization programs affordable and on course to meet the mid- to long-term defense requirements of creating a more lethal, resilient, and agile force able to compete, deter, and win against future threats from both peer competitors and rogue actors.

I am also interested in the Marine Corps' assessment of how a flat topline and the resulting imposition of cuts and decreases to lower-priority programs and investment accounts affect the health and stability of your modernization strategy, as well as the industrial base that supports it.

Lastly, the fiscal year 2023 defense budget request did not factor in Russia's invasion of Ukraine or the ongoing response by the United States and our allies to provide vehicles, munitions, missiles, and other military equipment to Ukrainian forces in support of their fight against Russia. Today, I hope that our witnesses can inform us on how these missile and equipment transfers have affected U.S. stockpiles and whether you are getting what you need through the various supplemental appropriations to fund these operations, replace vehicle and equipment transfers, and replenish depleted munition stockpiles.

If there are additional funding or authorizations we can provide in the fiscal year 2023 NDAA [National Defense Authorization Act] and budget to get after replenishing some of these replenishments now, and avoid the need to continue funding supplemental through 2023 to restore your depleted capabilities, we need to be having this critical discussion now.

So, I thank the chairman for organizing this important and timely hearing, and I yield back.

Mr. NORCROSS. Thank you.

And again, I just want to mention that what you have been doing with the limited funds and redirection of those items that are of the highest priority is not lost on this committee, and what you are doing is much appreciated. Not to suggest that there aren't things that are of concern, but I think, generally, we are heading in a very good direction. I think you will hear that, speaking for myself, but, generally, we certainly believe this.

So, Mr. Stefany, great to have you back here, and your statement, please.

STATEMENT OF FREDERICK J. STEFANY, PRINCIPAL CIVILIAN DEPUTY, ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT, AND ACQUISITION; LTGEN MARK R. WISE, USMC, DEPUTY COMMANDANT FOR AVIATION, U.S. MARINE CORPS; AND LTGEN KARSTEN S. HECKL, USMC, COMMANDING GENERAL, MARINE CORPS COMBAT DEVELOPMENT COMMAND, AND DEPUTY COMMANDANT FOR COMBAT DEVELOPMENT AND INTEGRATION, U.S. MARINE CORPS

Mr. STEFANY. Yes, thank you, sir, and I thank you for that comment.

Chairman Norcross, Ranking Member Hartzler, distinguished members of the subcommittee, on behalf of myself, Lieutenant General Heckl, and Lieutenant General Wise, thank you for the opportunity to appear before you today to speak to the Department of Navy's fiscal year 2023 budget request for Marine Corps modernization.

During this hearing, you will hear that the Marine Corps has undertaken an aggressive modernization of its warfighting programs over the last 5 years—sorry—3 years. Lieutenant Generals Heckl and Wise are going to explain why this modernization was required, while emphasizing that the fundamental mission of the Marine Corps—to be the most ready when the Nation is least ready—has not changed. The Marine Corps will continue to serve as a force in readiness, prepared to answer the Nation's call whenever and wherever that may be around the globe.

As we watch the events unfold in Ukraine, it is clear that warfare is changing. Small, distributed formations with powerful and precision lethality, using advanced intelligence, surveillance, and reconnaissance platforms, loitering munitions, and anti-armor fires have proven to be very effective in combat operations. It is evidence we cannot stand still. The Marine Corps Force Design initiative recognizes this new reality, focusing on more capable intelligence, surveillance, and reconnaissance [ISR] platforms, and smaller systems for our ground formations.

Additionally, the Marine Corps is investing in the research and development of its future loitering munition, which we call Organic Precision Fires. We are using middle tier acquisition authorities for this program and other Force Design programs that will allow us to rapidly develop fieldable prototypes and demonstrate new capabilities, speeding the delivery of those capabilities to the Marines.

The Marine Corps' top priority remains the Navy/Marine Corps Expeditionary Ship Interdiction System, or NMESIS, a ground-based, anti-ship missile system. We have successfully conducted two tests of NMESIS, most recently in August 2021, and are currently conducting developmental and operational assessment events for that system. I believe NMESIS will have an immediate effect in the operational environment when it is deployed in 2023.

The fiscal year 2023 budget request continues the pattern of investing in successful programs that will make a difference in future conflicts. This includes the Ground/Air Task-Oriented Radar which is currently supporting NATO [North Atlantic Treaty Organization] operations; the Amphibious Combat Vehicle, which has just met its benchmarks for mobility, protection, and safety, and will deploy with Marine platoons later this year; and the Joint Light Tactical

Vehicle, the modern ground vehicle that will replace legacy Humvees over the next several years.

The Marine Corps' forward posture is reliant on ground, aviation, and surface mobility. Rotary-wing platforms such as the CH-53K and the H-1 play critical roles within Force Design, providing lethality, maneuverability, targeting, flexibility, and persistent sustainment. We have completed operational testing of the CH-53K heavy-lift helicopter and last month declared initial operational capability, or IOC, of that aircraft.

The fiscal year 2023 budget includes a request for block buy authority for fiscal year 2023 and 2024 aircraft production, with a projected savings of \$150 million over purchasing the aircraft 1 year at a time.

We have also reached IOC for the VH-92A Presidential Helicopter Program in the last year and are starting the White House commissioning efforts.

The success of the Navy-Marine Corps team to be ready to answer the Nation's call is rooted in being forward-deployed. This readiness provides options and decision space for our senior leaders, such as yourself. The Navy-Marine Corps forward presence also helps incidents from becoming a crisis, or a crisis from becoming a conflict.

We are confident that the programs in our Marine Corps portfolio are achievable, affordable, and will make our Marines more successful.

Thank you for the opportunity to appear before you today and for your strong support of Marine Corps modernization. We look forward to your questions.

[The joint prepared statement of Mr. Stefany, General Wise, and General Heckl can be found in the Appendix on page 29.]

Mr. NORCROSS. Thank you.

Lieutenant General Wise, you are now recognized.

Mr. STEFANY. Sir, that was one statement for all three of us. Sorry about that.

Mr. NORCROSS. So, repeat the same, right?

Mr. STEFANY. Yes, sir.

Mr. NORCROSS. I am all in. I am all in.

Thank you for your statements. We had read them, and certainly, this gives us more time for questions, which is certainly on top of that.

You started one of your statements talking about Ukraine and what we have been witnessing and the impact particularly of the Javelins, and the Stinger to a lesser extent, at least in this area. Given the performance—and that is a tough word to suggest in the Russians' vehicles in Ukraine—the assessment of what you are witnessing, both the lack of protection in some ways of the armor of Russia and the ability for Ukraine to use the missiles, particularly the Javelin, to literally decimate much of that armor, the Marine Corps' assessment of that; what impact it might have on our existing fleet of vehicles, and the future?

So, Lieutenant General Heckl and Wise, if you could comment on that?

General HECKL. Yes, sir. Thank you for the question.

And I want to just echo real quick, sir, Mr. Stefany's comment about the continued support from this committee and the subcommittees. I mean, it has just been tremendous. So, from the Commandant, thank you.

So, sir, I think, first of all, we exercise caution to draw conclusions too early with what we are seeing in Ukraine currently, but we are very, very cautiously and closely monitoring events, and certainly, as it would apply to the Navy-Marine Corps team.

I think one of the things to consider about just as an overarching to kind of frame the discussion, the Russian tactics, techniques, and procedures, TTPs, they have employed simply don't—it seems like they are not there, right? So, we use combined arms. So, there is an inherent amount of protection and safety in the way we employ our forces as a combined arms MAGTF, Marine Air-Ground Task Force.

Specifically to the weapons system, sir, obviously, I believe our Nation makes some of the best gear on the planet. I don't think it; I know it. And it proves itself time and time again—all the way from the mujahideen throwing the Soviets out of Afghanistan. You know, they said there was no change in ideology, no change in tactics. There was Stinger. So, that is a case from history, and I think we are bearing it out again.

I think the armor issue, the character of warfare is changing quickly in front of us. And I think we are seeing where just putting yourself, wrapping yourself in a bunch of armor that requires a lot of fuel and a lot of sustainment isn't necessarily going to make you safe and make you effective on the battlefield.

General WISE. Sir, I think, also, what I would add is the distributed nature of how the Ukrainians are operating and the benefits that I've seen from operating in that manner is very insightful and instructive, and it is the direction the Marine Corps is going to kind of validate in some ways some of the approaches that we have taken there from the aviation side, ISR-wise.

As you talk, much like the Commandant does often, about sense and make sense, and how that allows you to be more effective in the battlespace, I think we are seeing some of that from those operations as well, which flows directly across to the armor and the Javelin, being able to do that targeting activity upfront.

So, many good lessons. I would also say, equally, there is a couple of—we just need to make sure we learn the right lessons. In other words, what countereffect are the Russians using, or not, out there? So, that we make sure we put resilient systems out there that can survive in any battlespace, sir.

Mr. NORCROSS. Thank you.

I want to stay just for a moment with this line and what we are learning from Ukraine. And we are shipping a tremendous amount of systems and weapons, in addition to the humanitarian aid, over to Ukraine. And the Marines have been part of that drawdown.

So, what I want to ask is, from your perspective, that assessment of risk of what we are sending versus what we have available to us, both from an operational capabilities, but also in terms of what we are shipping, what do we need to have available to us; in other words, the resupply. In particular, because of the change in your operating concept—what was the last number? Five thousand five

hundred Javelins, and that is a rough number, have been provided. It didn't split up where they are coming from. What the impact is on the Marine Corps?

Mr. STEFANY. Sir, I think most of those weapons would be in General Heckl's area.

So, General.

General HECKL. Yes, sir.

So, sir, we've—the Marine Corps has supplied—first, to Mrs. Hartzler's comment about the—when this budget request, as you alluded to, was not constructed with the supply to the Ukrainians in mind. So, that is an issue; you are exactly right.

Second, and then, third, we have provided approximately a thousand Javelin missile systems and approximately a thousand Stinger missile systems to Ukraine. And they are absolutely critical to be resupplied for us.

And I would look to Mr. Stefany if there is any industrial base concerns.

Mr. STEFANY. Yes, sir. So, the other question you had in the opening was supplementals. And that first very small supplemental, I think \$3.4 billion—not enough, right? Obviously, not enough to to resupply. So, we look forward to both your committee and the larger Congress on the larger funding effort for the supplemental. But we do have a little bit of money, and we are starting to recharge that line right now, sir.

Mr. NORCROSS. Thank you.

Obviously, you are waiting eagerly for the latest to pass through the other House and get that moving. But, certainly, there is nothing unique to the Marines' Javelins and Stingers that isn't facing the other services.

I just want to shift over a little bit to the CH-53Ks, which are moving along, and talk about the brownout issue. And, Lieutenant General Wise, we have read a lot about it; we have heard a lot about it. There has been some mitigation and changes made along the lines. Can you tell us where you are now, and going forward, the risk that we are looking at in the present configuration?

General WISE. Sir, thank you for the question.

On the 53K—okay, I think the light is just a little dim. Sorry about that.

Sir, for the 53K, the initial assessment was very early in the test process. And so, I would answer it in two ways because we address it from multiple different angles.

The 53K, when we start the test events, we start at the very heart of the envelope and we work out. And so, the initial test events are very limited. So, things like, you know, time limitations within a certain environment. And then, we know that the envelope will go beyond that, but we test it in tranches out from there to validate the fact that we got the envelope right.

So, some of the limitations were based on those initial envelope limitations. What we have found since then is a couple of things on the equipment side. One is the diagnostic capability of this airframe is spectacular, meaning the pilot could actually get a real-time engine performance capability readout to make real-time decisions on how the engines are performing, regardless of the environment, but it includes the brownout conditions. So, that is part of

it. It's actually been expanding the envelope much wider than those initial assessments indicated.

The other side, too, is the automation on the airframe. Because the automation is designed to allow a pilot to get that airframe into even the worst brownout conditions and on the ground safely and minimize its time in that particulate matter, which also really negates the issues we have with, potential issues you might have with the brownout conditions.

So far, since then, we have actually demonstrated in the worst brownout conditions that that aircraft has performed for 21 minutes in the worst brownout conditions with zero degradation of the engines. So, it kind of points back to the initial test parameters can be taken in the wrong way. We purposely limit it until we prove ourselves correct as we go out. But it has been performing brilliantly. But there are multiple systems onboard that make that airplane the safest one out there.

Mr. NORCROSS. Thank you.

Let me shift over for Mr. Stefany. When we talk about acquisition, quite often, what are we doing right; what we are doing wrong. But, on this one, you have asked for the block buy authority rather than a multiyear. Can you explain to us why the block buy versus a multiyear at this point?

Mr. STEFANY. Yes, sir. So, a multiyear is still in our plan. Our plan is, after the block buy, 2-year block buy, to do a 5-year multiyear procurement after that. The reason we are not doing it now right off the bat is the criteria that is in statute to be able to have a proven design, proven manufacturing, enough data to give the CAPE [Cost Assessment and Program Evaluation], so they can make an independent estimate.

We did not have all that at the beginning of the process for this budget cycle. So, we decided this budget cycle and next, we will get that data out of Sikorsky, and then we will be able to provide it to you and to the CAPE to do that analysis for a multiyear starting, a 5-year multiyear starting 2 years from now.

So, it was more we just didn't have the data to be able to justify it at this point in time.

Mr. NORCROSS. But the authority is, obviously, so you can accelerate and give to your subs and the supply chain that this is coming?

Mr. STEFANY. Yes. So, the part that we really wanted, the supply chain, the block buy takes care of a big part of that, right? We can go buy 2 years' worth of equipment at once; get the supply chain spun up. So that when we do the 5-year multiyear, they are up to full speed.

Mr. NORCROSS. Incredibly important, coming off the pandemic.

With that, I turn to Ranking Member Mrs. Hartzler.

Mrs. HARTZLER. Thank you.

To kind of build on the conversation we have already had, back to the depleted stocks and the supplementals that have been through. If the Senate approves the bill that was passed in the House, is that going to be adequate, or are you going to need more in the fiscal year 2023 NDAA?

Mr. STEFANY. So, ma'am, for what we know right now and what we project, that would be adequate. Now, again, what the war con-

tinues on and there are more requests for drawdown material, it could, obviously, change over time. But right now we believe that is sufficient for what we can project going forward.

Mrs. HARTZLER. Okay. Well, please keep us posted on that.

And as it relates to the industrial base, this situation in the Ukraine, and the ensuing global allied mobilization provide support by way of equipment and munitions has shone a light on some serious issues existing with our industrial base and supply chain. So, how are you working with partners in the military industrial base and supply chains to mitigate and fix these issues?

Mr. STEFANY. Yes, ma'am. So, very close partnership of Stinger and Javelin, obviously, are made with our partners in the Army and the Air Force. And we are working with—,together with industry. Recognizing something like Javelin is a little more modern, that production line is able to scale easier. Stingers, we are going to have to go back, and probably if not need more—probably not more authority, but we may need more industrial base money to kind of get them up to a high enough production level they can restock us in time. So, that is an effort we are working with the Army, and we will certainly come back to this committee, once we get those results.

Mrs. HARTZLER. When do you anticipate that to be?

Mr. STEFANY. Ma'am, I don't have a date. I will take that for the record, to get you that.

[The information referred to can be found in the Appendix on page 47.]

Mrs. HARTZLER. Yes, because we need this answer yesterday really.

Mr. STEFANY. Yes. Okay.

Mrs. HARTZLER. I mean, you know, so we can produce the Stingers again or shift to another munition that maybe another country even has perfected that same capability.

Is there any changes that need to be made in our current Defense acquisition sustainment strategies to get over these problems of long lead times, parts and workforce shortfalls, and material obsolescence?

Mr. STEFANY. No, I think between the authorities we already have, as well as Defense Production Act-type authorities, I think we have the authorities we need. We now need to finish the assessment of where the biggest risks are, and then start moving out on addressing those.

Mrs. HARTZLER. Okay. Yes, as soon as possible, obviously.

Mr. STEFANY. Yes, ma'am.

Mrs. HARTZLER. And then, as far as the CH-53K, I am really glad to hear about the problem—I mean the solution, it seems like, with the brownout concerns to 21 minutes without any degradation at all. That is encouraging.

But the CH-53K, from its start, though, has had per-unit cost concerns. So, I wanted to ask about that. Because it currently costs as much, if not more, per aircraft than the per-unit cost of a Joint Strike Fighter. So, can you explain why this is?

General WISE. Ma'am, thank you for the question.

For the 53K, we continue to realize cost reductions in the acquisition lots. The last two were the lowest two so far, and each of

them came down a level each. And those—the costs for the most recent 53Ks, if you look at it at the same measurements that we use for the F-35, it's actually lower, considerably——

Mrs. HARTZLER. How much is it now?

General WISE. The last lot was negotiated at \$93.7 million per copy. If you use the same metric for the 35, depending on which variant, it is approximately \$117 to \$107, so depending on the variant.

Mrs. HARTZLER. So, how are you working with them to bring down costs?

General WISE. Yes, ma'am. So, we actually work it in multiple angles. Part of it is with the program office to drive cost out of the actual process, as well as with the vendor at Sikorsky and Lockheed Martin. But there are other things that are helping us.

One is Congress' generosity for the addition of two additional airframes in the last two lots per lot. So, that was four additional airframes, helps drive down the cost through quantity buy.

Recently, on the international side, the Israelis committed to purchase 12 aircraft, with an option for 6 more. It looks very good that they will go down that road. There are additional opportunities starting to show up for the 53K. I know it will be part of the Berlin Air Show this year. So, looking at more opportunities to drive down costs through quantity buy as well. So, approaching it from multiple angles, not just manufacturing, but allowing their learning curve to come up and produce in a more effective manner.

Mrs. HARTZLER. Okay. Let's switch to another platform, the NMESIS. You mentioned that in your opening statement, and it does sound like a very exciting, very helpful platform. Can you provide us more information, though, on what this system is and the advanced capabilities it brings to the fight?

General HECKL. I'm "on" now; here we go. Okay. Yes, ma'am, glad to, and thanks for the question.

NMESIS is another one of the programs kind of alluded to by yourself and the chairman as far as things going right for us. The Navy/Marine Corps Expeditionary Ship Interdiction System is our number one modernization priority for the Commandant.

The system consists of two Naval Strike Missiles, which we work in partnership with our Navy brothers and sisters. And it is fired from the Joint Light Tactical Vehicle chassis. And we have had a lot of success.

And as Mr. Stefany alluded to, it has been employed multiple times, and as recently as the end of April. Doing envelope expansion, we had very successful shots over the course of 3 days. So, the weapon system continues to perform. And quite frankly, from August of 2021, during large-scale exercise, we actually fired two Naval Strike Missiles against a maritime target. Both had very successful launch, flight, and impacts. So, we are very, very pleased with that. And at this level, the classification level, the range, we are very pleased with the range as well. So, going forward, we are looking forward to fielding the system and getting it out to the fleet as soon as we possibly can.

Mrs. HARTZLER. When do you anticipate that fielding? I mean, it just sounds like a great capability.

General HECKL. End of fiscal year 2023, ma'am, is when it will start.

Mrs. HARTZLER. How many?

General HECKL. I think we are getting out—I would have to take it. I don't know the exact number, ma'am. Let me take that for the record. I will get back to you on a specific number.

[The information referred to can be found in the Appendix on page 47.]

Mrs. HARTZLER. Okay. Great.

I have a couple more, maybe if we have a second round, but I will yield back.

Mr. NORCROSS. Ms. Sherrill, you are now recognized.

Ms. SHERRILL. Thank you, Mr. Chairman.

First, I would like to just compliment the Army and Marine Corps on resourcing initiatives to improve the form, fit, and function for female soldiers and Marines in their PPE [personal protective equipment] gear. That has long been a concern of mine. And I encourage you to continue in those efforts.

Mr. Stefany, we just heard from General Heckl the battlefield is changing rapidly. In a recent hearing with the Commandant, General Berger stated that he wanted to give the enemy multiple problems on the battlefield to solve.

The new Force Design for the Marine Corps is to acquire and field indirect fire systems with increased range, accuracy, long-range precision fires that can service both maritime and ground targets. What, if any, cannon artillery platforms is the Marine Corps looking at to meet this need?

Mr. STEFANY. Ma'am, I would like to defer that one to General Heckl on that platform.

General HECKL. Yes. Yes, ma'am. So, thanks for the question. You specifically asked what about cannon artillery?

Ms. SHERRILL. Yes.

General HECKL. Okay. So, as you know, ma'am, the Commandant has said from the start of Force Design that, as we experiment and within our campaign of learning, which forms the analytical rigor that underpins every decision we make in Force Design, we will make changes. The Commandant made a change. We were initially going to draw down to 5 batteries of 777 155 millimeter artillery. We are now going to go to seven, but we are also increasing those batteries from six tubes to eight. We will have four on the West, three on the East.

Did that answer the question?

Ms. SHERRILL. That answers the question of what you are looking at now. Because, surely, the bulk air missile batteries with long occupation times and a large geographic signature, will put the MRL [Marine Littoral Regiment] at risk. And so, I am wondering if the Marines have explored adding some of the long-range precision fires currently under research and development as a way to allow the Marine commanders long-range fires without sacrificing survivability and maneuverability.

General HECKL. You betcha, ma'am, and you are absolutely right. The towed cannon artillery on the battlefield is very susceptible, absolutely.

You may or may not know we have HIMARS [High Mobility Artillery Rocket System] currently within our inventory, and we are working very closely with the Army. Obviously, the Marine Corps is not really big enough to pursue programs on our own. So, we always seek out sister services to work with. It makes it more affordable. And so, we are doing that with the Army.

We are going down the route. As you know, or may not know, HIMARS eventually will turn into the MLRS, Multiple Launch Rocket System, family of munitions, which will include GMLRS [Guided Multiple Launch Rocket System], ATACMS [Army Tactical Missile System], and eventually, PrSM [Precision Strike Missile] missile, which is going to be a phenomenal capability, which will do both land and surface targets.

Did that get at it, ma'am?

Ms. SHERRILL. Yes. Thank you.

And stepping away a bit from the need to service targets, I would like to talk about how the MLR will sustain itself with missile platforms being bulky and presenting significant challenges for commanders hoping to maintain a basic load of ammunition for their formations in a contested environment.

Does the Marine Corps have a solution for conducting ship-to-shore resupply of the bulky missile platforms? And when it comes to combat logistics, I know every bit of space on a truck, ship, aircraft matters, especially when delivering all classes of supply to littoral regiments. Do you feel that the Marines will face a challenge in resupplying the bulk missile systems throughout the theater?

General HECKL. Ma'am, great. You're just firing one great question after another.

Obviously, right now, ma'am, within Force Design, I will tell you that logistics in a contested environment is our pacing effort right now. It is absolutely our pacing effort. We are laser-focused on it and getting after it down at my command, particularly within the Marine Corps Warfighting Lab and the Capabilities Development Directorate. So, we are all over it.

It is always—logistics, anybody that tells you otherwise, logistics is always a challenge, and it can never be emphasized enough in preparation. I will simply tell you the strength of the Marine Corps, the MAGTF, which a Marine littoral regiment is simply a form of a MAGTF. It is tailored for a specific theater and a specific threat. But we have—the organic lift we have within the MAGTF, both air and surface, is one of our greatest strengths.

So, for instance, NMESIS is fully internally transportable in a 53K. We have demonstrated it. I mean within a KC-130J. We have demonstrated it multiple times.

And as you also know, we are standing up a fourth Active Duty VMGR KC-130J squadron with 16 aircraft going to Hawaii specifically to provide additional organic lift within the Indo-Pacific.

And that brings me to the LAW, the Light Amphibious Warship. The surface connectors, ma'am, will be absolutely critical. And just to keep it short here, the important aspect of a LAW—or Landing Ship Medium really is its appropriate name—is the fact that it is a shore-to-shore connector.

So, again, what you are seeing play out in Ukraine, big signatures of any type, whether it is logistics or anywhere in the electro-

magnetic spectrum, you know, trails of fuel trucks to refuel armor, those are signatures and they are targetable and they become vulnerabilities. So, the shore-to-shore connector capability of the LAW is critical. We don't require ports. We don't require big, 12,000-foot runways. We do things from an austere perspective.

Did that answer it, ma'am?

Ms. SHERRILL. Well, thank you. Yes. Thank you very much, General. And my time has expired, but I will say, maybe for my oversight responsibilities, I should come test some of those 53Ks for you guys. So, maybe one of these days. Thanks.

And I yield back.

Mr. NORCROSS. Thank you.

Mr. Wittman, you are now recognized for 5 minutes.

Mr. WITTMAN. Thank you, Mr. Chairman.

Mr. Stefany, Lieutenant General Heckl, Lieutenant General Wise, thanks so much for joining us.

General Heckl, let me ask about the Commandant's guidance. He talks about lightening the force, especially when it comes to combat and transportation. He also talks about it being theater-agnostic, to make sure we can operate in the INDOPACOM [U.S. Indo-Pacific Command], but also have the ability to cross over into the European theater, wherever we are needed, is to make sure that lightening the force is able to do that.

The update 2022 I think really refines the testing that you all have done to really get that concept down, down to where it needs to be. Can you give us a little more insight about that whole concept of lightening the force? Where you are with the testing of this with Marines in the field; figuring this out, and where you are today? I know you have made a number of adjustments with the size of battalions, the number of MV-22s, the number of artillery pieces. Can you tell us a little bit about how you have that in the Commandant's Planning Guidance, and how that really allows you to achieve the National Defense Strategy?

General HECKL. So, sir, again, great question. I know you and I have talked before, sir.

So, lightening any force simply makes it more agile and flexible.

Mr. WITTMAN. Yes.

General HECKL. And therefore, creates a certain dynamic component of that force. And I think we are seeing that play out in Ukraine right now real time, right? So, we are seeing widely dispersed, well-equipped, lethal, precision munitions, and then, the ability to move. So, let me give you examples to kind of back into the question previous.

We have demonstrated multiple times how we can load NMESIS on the KC-130, land—and remember, a KC-130 doesn't necessarily require an airfield, right? It can land in austere environments. It has to be prepped, but it can still land. We do it pretty regularly.

The weapon system offloads, fire capsule launches, the missile reloads, and gets back in the aircraft and is gone before the missile actually impacts the target. That is the kind of dynamic I am talking about.

Mr. WITTMAN. Yes.

General HECKL. So, lightening any force is going to make that easier to do.

And I will also say that, with the ubiquity of sensors right now, particularly in the Indo-Pacific, if you can be seen and you are a worthy target—meaning the cost of position and am I going to expend an expensive weapon system—you can be hit. So, we are getting after signature management in all ways, and it is kind of back to the future a little bit, right?

We are doing camo netting. We now have companies that we are on contract with that have netting that can go over vehicles, as well as people, that reduce and eliminate IR [infrared] signature, eliminate visual. It is pretty impressive. So, that technology has advanced as well.

So, the lighter the better from every perspective. The lighter means less sustainment. You are a less needy force, which means I am reducing the signature.

Did that get after it, sir?

Mr. WITTMAN. Yes.

General HECKL. It's a big question. I could go on all day, and I don't want to eat up all the time.

Mr. WITTMAN. No, no, that is spot-on.

Let me ask to look at today's situation. And that is, as you are looking at lightening the force, one of the challenges that gets thrown at you is what is happening now with munitions that are going out the door, both Javelin and Stinger, as we have heard. And listen, we understand what needs to be done with the industrial base to resupply, those sorts of things.

But I think the more important and immediate question is, what does the Marine Corps do in the meantime as a mitigation? So, as these weapons stores are going down, what happens if something occurs between now and the time that we resupply? And what can Congress do to help you in that mitigation strategy?

General HECKL. Well, sir, I think—and Mr. Stefany may have something to say here—I am not super familiar with how the industrial base is postured and what capability—you know, like in World War II, rolling 16 B-17s off line a day, Boeing did.

But I will simply say there are ways to mitigate risk. A big part of that, sir, is the continued deterrence that is referenced in the National Defense Strategy.

Mr. WITTMAN. Uh-hum.

General HECKL. You know, if you look at the whole spectrum of things, the desire is to never get to the right side, right? We want to avoid actual kinetic operations.

Mr. WITTMAN. Okay.

General HECKL. The threshold of violence may be breached every now and then, as we compete and we deter, but the point is to deter—

Mr. WITTMAN. Right.

General HECKL [continuing]. To avoid getting to a situation where the levels of our stores are a concern, right? So, for a Marine, that means being forward—

Mr. WITTMAN. Yes.

General HECKL [continuing]. Being forward, being present with our allies and partners. And I think, quite frankly, sir, there is a lot of strength in our allies and partners who utilize similar weapon systems, and I think we need to play to that advantage, too.

Sir, I don't know if you have any comments about industrial base.

Mr. WITTMAN. Mr. Stefany.

Mr. STEFANY. No, I would just add that the Marine Corps has not reached a place where they cannot support the forward-deployed Marines, right? We haven't got there, and we will certainly talk—the Commandant, I am sure, will come and talk to you before we get to that place. So, it is not like we have given away all of our missiles.

Mr. WITTMAN. Right.

Mr. STEFANY. We still have plenty of them for the forward-deployed Marines.

General HECKL. And, sir, has you know, we track very carefully and closely the training status of our units.

Mr. WITTMAN. Yes.

General HECKL. Because those same weapon systems have to be used. Our Marines have to fire them on a periodic basis to maintain their readiness and proficiency.

Mr. WITTMAN. That is great. Thanks. Listen, I think it is incredibly important for us to know well ahead of time. Because, as you know, the ability to resupply right now has atrophied, and that is a risk in and of itself.

General HECKL. Yes, sir.

Mr. WITTMAN. Thank you, Mr. Chairman. I yield back.

Mr. NORCROSS. Mr. Bacon, you are now recognized for 5 minutes.

Mr. BACON. Thank you.

I appreciate you gentlemen being here and for your leadership.

I wanted to ask you about long-range strike capabilities. I know the Marines are investing in it, so are the Army. A little more challenging in the Pacific theater, though, because you have basing concerns.

General HECKL. Yes.

Mr. BACON. And so, my question would be, how do you envision this working in the Pacific theater? And I say that because I know the Air Force has got the B-21. They are going to have standoff weapons. The Navy will have ship-borne capabilities. So, is this a real viable forward for the Marines, Army, and the basing issues? How do we deal with it?

Thank you.

General HECKL. So, a great question.

And as you know, NMESIS is one of our systems. The other one is long-range precision fires, which is the Tomahawk. Again, we share that with the Navy, right?

So, an incredibly long-range weapon. We have demonstrated that weapon system firing off of one of our platforms, ground-based, and we are very happy with it.

We have yet to determine, going forward—it is a larger missile system than the Navy Strike Missile and the NMESIS. So, again, from my concern as a requirements guy for the Marine Corps, I get concerned when I see things that are big and heavy, read signature; difficult to resupply, signature. The ground-based Tomahawk, and by the way, it is launched out of a Mark 41 Vertical Launch System, which is similar, looks similar to other ones. So, there is

opportunities there, as we go forward, leave at that. So, yes, sir, we have that capability. It is very viable.

Now, your concern about access, right, with allies and partners. Absolutely, sir. I mean, one of the things, the difference is, the Marine Littoral Regiment and the Multi-Domain Task Force that the Army is fielding. The Multi-Domain Task Force the Army is fielding and MLR are complementary in nature. MLR is smaller, a little more nimble, organic lift, expeditionary. The MDTF, is a little bit bigger, but has bigger punch and farther punch.

It will be up to allies and partners to determine what they are going to allow in, right? But I think, from my perspective as a Marine—and we have units from I MEF [Marine Expeditionary Force] and, you know, III MEF, the Third Marine Expeditionary Force lives inside the WEZ [weapons engagement zone] day-in and day-out. And we work with allies and partners. So, we are really dependent on what they allow in.

But, to your point, you know, a big missile system might not be something they would be—or they may be a little bit concerned about it.

Mr. BACON. I worry about the access, though. I would think those blend of capabilities between the Air Force, Navy, Army, and Marines is best. But if you don't have the basing abilities—

General HECKL. That is right.

Mr. BACON [continuing]. That is the concern I have. Maybe in Europe and the Middle East, there is other—more opportunities.

I want to ask you, is there a priority weapon that we need to have replenished for the Marines? What is your number one and number two things that the Marines need replenished?

General HECKL. Sir, I would tell you right now the Commandant's number one issue is—not pertaining to this—but is amphibious ships to be forward-deployed. Weapon system-wise, our number one priority is the NMESIS, sir.

Mr. BACON. For dealing with Ukraine, was there certain weapons that the Marines had to send over that we need to be focused on for replenishment?

General HECKL. Well, the Javelin and the Stinger.

Mr. BACON. The Javelins primarily? Okay. I know we touched on it a little bit. So, that would be your priority?

General HECKL. Yes, sir.

Mr. BACON. Okay. One of the things, I felt like we could have done it quicker in this Ukraine fight is provided the capabilities of tanks 20, 30, 40 miles behind the lines. We are starting to see that. We see other countries that have some really good capabilities that Ukraine is using right now.

What would be your advice here on how we could be—I guess these are still our capabilities. You know, our remote piloted aircraft, for example. I feel like we are hindered by our rule set. Other countries are filling that capability. Do you see the same issue? Hope that follows.

General HECKL. So, sir, I think—and I don't know if [inaudible] wants to chime in here, as you mentioned UAVs [unmanned aerial vehicles]. You know, I did a couple of years with NATO as a brand-new one-star, Strike Force NATO in Lisbon. I spent a good bit of time on the *Mount Whitney* and doing exercises.

I think—from our perspective, I think whatever we do, I think working within the NATO construct and our NATO partners, that I think we can contribute more. I don't disagree with you. You always—hindsight, you always wish you could have moved faster, right?

So, I don't know if you have any more to—

Mr. STEFANY. We do have restrictions on UAVs, UASs [unmanned aerial systems], as you know, sir, that slows us down.

On the surface, though, I think we could have that conversation of unmanned surface-type things we are doing in a different forum that are not as slow as those are going.

Mr. BACON. Okay. This is the RPA [remotely piloted aircraft] area. The other countries are moving within our circle much faster, and I feel like we are losing an opportunity to provide our great weapons in that case.

But I am running out of time. So, I will yield back. I thank you for your time.

Mr. NORCROSS. Thank you.

Dr. Jackson, you are now recognized for 5 minutes.

Dr. JACKSON. Thank you, Mr. Chairman; thank you, Ranking Member Hartzler, for holding this hearing today.

Thank you to our distinguished guests for being here.

I know this is a TAL [Tactical Air and Land Forces Subcommittee] hearing, we are here to discuss modernization strategies and programs such as rotary aviation and ground systems. However, I briefly want to touch on the importance of modernization for the medical community, as an aside here.

As we constantly look for cost savings and ways to modernize our systems, there seems to be a trend of looking towards making cuts on the medical side to support the needs of the line side. Most recently, we saw the Medical Officer [TMO] of the Marine Corps position get cut, which is a decision that I wholeheartedly disagree with. A mistake like cutting the TMO sets us further back in our modernization efforts and could potentially cause irreparable damage to our medical readiness.

I understand that having the latest aircraft and weapons systems is extremely important, but that doesn't matter if we forget to care about our people. If we are forced to compete and win in the Indo-Pacific, having appropriate leadership and accountability in the medical community is going to be paramount for our success. So, as we modernize our military, I would strongly encourage the Department of the Navy leadership to reconsider the decision and reinstate the TMO.

That said, I want to shift gears now and talk about some of the modernization efforts included in this year's budget request. On Wednesday, the full committee heard testimony from General Berger that I was impressed with on the modernization efforts being undertaken by the Marine Corps to adapt to the needs of the Indo-Pacific theater.

One thing that General Berger mentioned was the need for Congress to provide funding for the V-22 nacelle improvement. General Wise, I appreciated you telling this committee a few weeks ago that you share the same feelings that we have in the need to en-

sure that we modernize our V-22 fleet and increase the platform's overall readiness.

In the unfunded priorities list submitted to Congress, nearly \$75 million was requested for nacelle improvement. These documents also show a commitment from the Marines to continue this vital program in future years. Modernizing our V-22 is not something that we can wait on. It is something that we need to get started on now.

As you know, the workforce in Amarillo, where I represent, has risen to the occasion of completing the Air Force's nacelle improvement process ahead of schedule. There is no doubt in my mind that this would be the case for the MV-22 nacelle improvement program as well.

In the written submission to the committee, when asked, "Do you know of any factors that have the potential to hinder execution of additional funds for this item in FY 23?", the answer was very clearly stated as no. All of this leads me to wonder if the amount requested on the unfunded priorities list is enough. That is a question. Or if Congress needs to consider an even larger amount to ensure that we can dominate any future conflict.

My question. If additional work can be accommodated by the workforce conducting nacelle improvement, we should increase the rate at which this work is done. General Wise, would the Marines be able to accelerate the nacelle improvement program further if additional funds were appropriated over the amount requested in the unfunded priorities list?

General WISE. Sir, great question.

And as we mentioned before, we are very laser-focused on making sure there is no break in that line and that we continue that nacelle improvement. We have already laid in money, as you know, through fiscal year 2023 for the long lead to ensure that it starts right at the back side of the Air Force upgrades to keep that going.

As far as accelerating, I believe the line does have the capacity to accelerate. We would also have to balance that with aircraft off the line to make sure we had an optimum sequencing, so the rest of the readiness of the fleet to deploy is balanced. So, that part, I would have to take for the record as far as how could we accelerate it further in order to make sure we still have adequate capacity for deployments and still maximize the line.

But, certainly, are very interested in the program because it does offer so many readiness perks for us, of course.

[The information referred to can be found in the Appendix on page 47.]

Dr. JACKSON. Yes, sir, I agree with that. And I have had the opportunity to go out to Bell and look at these things when they tear them apart, when they are doing them. And some of them look fairly good, and some of them look like they really need a lot of work. And so, I would like to see us do that as soon as possible.

On a bipartisan basis, many members of the committee have agreed that the President's budget request does not give us the resources that we need. I do anticipate that we will need to provide additional funding to account for the inadequate budget that we received.

General Wise, one more question. I would like to ask you another question related to the V-22. As we looked at the need to compete and win in the Indo-Pacific in, potentially, just a few years, what are the capability gaps that we would face, if we didn't have an adequate level of readiness for our V-22 fleet? And are there any other platforms that would be able to accomplish this mission instead?

General WISE. So, the V-22 is extraordinarily capable, as you know, just because of the speed, the battlefield tempo it develops. There is still nothing else that can do it that way.

Can we lift folks, I mean assault support, with 53 [CH-53], with other platforms? Can you do those missions? You can, not at the speed, and speed is very, very important. So, it does fill a unique capability, and that something that we need to make sure that we maximize readiness to have those assets forward when we need them.

Dr. JACKSON. Thank you, sir. I think my time is up here, but I just wanted to also say I have a third question I will submit for the record. It is related to the Army's Future Vertical Lift and where the Marines are looking, if they are looking at what the Army is doing. Because I hope that we go down that path at the Marine Corps as well.

Thank you, sir.

Mr. NORCROSS. Thank you.

Just to note they have called votes, but there are at least one question that Vicky and I have. Do you have another? Okay. And I will let Vicky jump in here.

Let's talk about the Humvees. Obviously, we are moving towards the JLTV [Joint Light Tactical Vehicle]. But it is no surprise to anybody in this room, many of the accidents have taken the lives of our young service men and women. And the mitigation that has been going on, you are well aware of that. Yet, there is nothing in this year's request in terms of mitigating that.

Can you explain to us why you have elected not to include any of the safety upgrades, General Heckl?

General HECKL. Absolutely, sir.

So, the Marine Corps is all in on JLTV, and we are not retaining the Humvee. So, we are going to get out of the Humvee business, period. So, the faster we can do that, the better.

The JLTV has proven itself to be a really solid weapon system. It is more safe, more capable, more survivable from every perspective. It has a lot of safety features that are inherent.

And by the way, sir, some of the older lot Humvees that we have you can't even upgrade. And we have very carefully identified the best of breed and the worst of breed. We are getting rid of the worst as quickly as we can. The older vehicles are in worse shape.

But the JLTV has, as you know, the anti-lock braking system. It has electronic steering control, all the things that contribute to a lower mishap rate all the way around—things such as rollovers.

So, again, I think we have fielded approximately 2,500 of them, and our AAO [approved acquisition objective] is 12,500. And we are just moving out as quickly as we can, sir. That's our whole—so as you know, I think there is 413 in this request and there are some

on the unfunded priorities list. So, the faster we can go with JLTV, the faster we can replace Humvee.

Mr. NORCROSS. We agree with you with the JLTV. It is a great vehicle. But at today's estimate, we are talking about 2031 before we get rid of those—mitigation, getting rid of those that can't be retrofitted, obviously. That is a long time, and this is a serious issue that we know how to fix at a relatively low cost. And it is something that we believe is extremely important. And nobody likes to throw good money after a bad system, but 2031 is a long time off.

And I will just defer to Mrs. Hartzler for any additional comments.

Mrs. HARTZLER. Just a quick follow-up. It was my impression that in this budget the JLTV is on the unfunded priorities list, that there is none. So, you just said there is 413 requested?

General HECKL. I am pretty sure we have 413 vehicles in this budget request, yes, ma'am.

Mrs. HARTZLER. Okay. Thank you.

Mr. NORCROSS. Mr. Wittman.

Mr. WITTMAN. Thank you, Mr. Chairman.

General Wise, I just wanted to talk a little bit. We talked a lot about the platforms, but the most important part of that platform is the pilot. And I wanted to get your thoughts on rotary-wing pilot retention and recruitment into the future. It looks like to me, at the company level between third and eighth year, those pilots become more and more of a challenge to be able to keep. Give us your perspective on what the Marine Corps is doing, and needs to do, to make sure we retain those pilots, which we are going to need in the years to come.

General WISE. Yes, sir, thank you for the question.

So, obviously, we track very closely all of our pilot retention issues. There are some areas that are very complex and challenging right now, as we know. And we attack those from multiple different directions.

So, some of it is making sure the accession piece is adequate. But the big thing, which I think really gets more towards the question, is the retention side of the house. So, some of that is looking at bonuses. We have got a range of bonuses, depending on the platform, in order to provide some enticement.

I would tell you, from a very personal perspective, when I was being looked at for retention in the early years, that, though enticing and nice it was not the sole thing that kept me. Because what really comes into play—and I think most would agree with me—is that right command climate, selecting the right people to provide that atmosphere that people want to come to work every day; they want to be part of something like that. So, we are very focused there as well.

The other good piece of it is being very tied in closely with my counterparts in the Naval Aviation Enterprise, specifically, CNATRA, so Chief of Naval Aviation Training, and watching those pipelines to make sure, as they go through, that we are meeting our requirements for those pilots.

For instance, we are a few short this year, but, of course, the year is only about half over. So, it will fluctuate a little bit towards

the end, but we watch them so closely because we don't want to get behind. In most communities, we are actually considered healthy, which is 85 percent or above, in the rotary-wing community. I would not say that is true across the board. There are plenty of challenges to go around. But, that one, we stay very glued to. We are relatively healthy right now in that regard.

Mr. NORCROSS. Mr. Veasey, you are now recognized.

Mr. VEASEY. Mr. Chairman, thank you very much.

General Wise, I wanted to ask you a question. Now that each Service is orienting its modernization strategy and priorities on some variation of multi-domain operations, how does the V-22 fit into this and any future tilt-rotor platforms?

General WISE. Sir, thank you for the question.

Looking at really distributed operations, widely distributed operations, particularly, as we look at the Pacific, the V-22 is, for us, very uniquely capable, not just because of the fact that it can deliver sustainment to anywhere or people, but it is the speed at which it can do that. It has demonstrated over and over, since it started combat deployments in 2007, that it is uniquely capable to do things that no other platform can do.

So, the tilt-rotor side I think is demonstrated across all the services, as we have seen it take in the Navy and Air Force Special Operations. Everyone is seeing the value of that platform. The Japanese have come onboard as well.

So, as far as future of tilt-rotor and other opportunities—and there was a question earlier having to do with Future Vertical Lift, and how the Marine Corps is really expanding its view of some of the capabilities that have been developed through that program—that would suggest that some of the tilt-rotor and, potentially, unmanned capabilities to further expand our ability and capacity to sustain forces in widely distributed environments, there is huge potential in that area moving forward.

So, we are working very closely with all the vendors, the Army, the Air Force, and the Navy, through what we are now calling “a family of systems” within the Future Vertical Lift to address those specific additional capacity requirements.

Mr. VEASEY. What about the tilt-rotor industrial base and the rotary-wing aviation industrial base? What is like just your kind of overall assessment of that right now?

General WISE. For the industrial base, I would probably let Mr. Stefany talk to that one.

Mr. VEASEY. Yes, please.

General WISE. I am happy to follow up, though, with anything you would like.

Mr. VEASEY. Yes, please. Thank you.

Mr. STEFANY. Yes, I think it is we are kind of in a—you know, certain lines coming to an end. And Army is first, but Future Vertical Lift is the future, and we have this kind of gap in the middle, right? That is why the nacelle program was potentially a very good way of filling that void to keep the workforce hot, as first the Army, then the Navy and Marine Corps make our selections for Future Vertical Lift.

We are looking at both major aircraft suppliers and engine suppliers, the whole group, to try to make sure we are doing it smartly with our Air Force and Army counterparts.

Mr. VEASEY. What do you think are the biggest challenges? You know, as you look at that base, what do you think are some of the biggest challenges that we are going to have to be able to overcome to keep moving forward?

Mr. STEFANY. Yes, sir. I think, as we go, well, just the skilled workers, right? Being able to get the right skilled mechanics in the right area. It is maybe not as appealing a career field as maybe it was 10 or 20 years ago. And so, getting the right skills or the right workforce, not losing them in places like Amarillo, but, also, other parts of the country, making sure we, as a nation, are keeping those blue-collar skills active and a choice career for our younger folks.

Mr. VEASEY. Yes. Yes, absolutely. Yes, we are definitely seeing a lot of that in the Dallas-Fort Worth area.

Thank you very much. I appreciate your answers.

And I will turn it back over to the chairman.

Mr. NORCROSS. Thank you.

And to our witnesses, very much appreciate it.

Votes have been called. So, this is perfect timing.

And very much appreciate the testimony, and certainly, answering those questions.

We are adjourned.

[Whereupon, at 11:03 a.m., the subcommittee was adjourned.]

A P P E N D I X

MAY 13, 2022

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MAY 13, 2022

**Statement of the Honorable Don Norcross
Chairman, Tactical Air and Land Forces Subcommittee
“Fiscal Year 2023 Marine Corps Modernization”
May 13, 2022 (Hybrid, RHOB 2118 & WEBEX)**

Good morning everyone and welcome to our second subcommittee hearing reviewing the Department’s fiscal year 2023 budget request.

Before continuing I need to review the protocols for all members remotely joining this morning’s hearing.

Members participating must be visible on-screen for the purposes of identity verification, establishing and maintaining a quorum, participating in the proceeding, and voting. Members must continue to use the software platform’s video function the entire time while in attendance, unless they experience connectivity issues or other technical problems that render them unable to participate on camera. If a Member experiences technical difficulties they should contact the committee’s staff for assistance.

Video of Members’ participation on Cisco WebEx is being broadcast via the HASC internet livestream. Members must seek recognition verbally and are asked to mute their microphones when not speaking to eliminate background noise.

Members may leave and rejoin the proceeding. However, if Members depart the hearing for a short while, for reasons other than joining a different proceeding, they should leave the video function on. If Members will be absent for a significant period, or depart to join a different proceeding, they should exit the software platform entirely and then re-join it when they return. Members may use the software platform’s chat feature to communicate with staff regarding only technical or logistical support issues.

I have designated a committee staff member to, if necessary, mute unrecognized Members’ microphones to cancel any inadvertent background noise that may disrupt the proceeding.

With that, I turn back to my opening remarks.

Today I’d like to welcome:

- **Mr. Frederick “Jay” Stefany**, Principal Civilian Deputy, Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN/RDA)
- **Lieutenant General Mark R. Wise**, Deputy Commandant for Aviation (DCA); and
- **Lieutenant General Karsten S. Heckl**, Commanding General, Marine Corps Combat Development Command (CG MCCDC) and Deputy Commandant for Combat Development and Integration (DC CD&I)).

Thank you to each of you for joining us today, and I look forward to our discussion.

It is important that in this hearing we acknowledge the context of this year's Marine Corps modernization budget request. Three years ago, the Commandant of the Marine Corps embarked on a significant reorientation intended to better align the Marine Corps with the national security challenges posed by the realities of today and tomorrow's world.

Over these three years, Congress has found the Marine Corps modernization strategy generally relevant, stable, affordable, and achievable; and, accordingly, we have demonstrated our support.

However, modernization is not without challenges or risk. There are programs within and outside the jurisdiction of this subcommittee that merit continued scrutiny.

In today's hearing, we will specifically focus on rotary aviation and ground systems which -- across the Marine Corps' program -- appear in generally good shape.

We are particularly interested to hear our witnesses' assessments of the impact of the Department's equipment and munitions drawdowns in support of the conflict in Ukraine.

We also look forward to hearing their thoughts on modernization management and their use of new acquisition authorities intended to accelerate the research, development, and acquisition process.

Finally, we look forward to hearing updates on specific programs such as CH-53K, Amphibious Combat Vehicle, the tactical network, long-range anti-ship fires, and air defense.

We have much to cover this afternoon, so with that I'd like now to yield to my Tactical Air & Land oversight partner and good friend from "Muh-zur-uh", Mrs. Hartzler.

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THE HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

STATEMENT OF

FREDERICK J. STEFANY
PRINCIPAL CIVILIAN DEPUTY, ASSISTANT SECRETARY OF THE NAVY
(RESEARCH, DEVELOPMENT AND ACQUISITION)

AND

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

AND

LIEUTENANT GENERAL MARK R. WISE
DEPUTY COMMANDANT FOR AVIATION

BEFORE THE

SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

MARINE CORPS MODERNIZATION

MAY 13, 2022

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THE HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

Chairman Norcross, Ranking Member Hartzler and distinguished members of the Subcommittee, thank you for the opportunity to appear before you today to address the Department of Navy's Fiscal Year (FY) 2023 budget request for U.S. Marine Corps modernization. The Marine Corps' modernization efforts over the last three years have enhanced our warfighting concepts and capabilities. Our combat ready forces are better postured now to campaign, deter, and if necessary, fight and win conflicts in support of the Joint Force. The Navy and Marine Corps team is one of America's unmatched and enduring advantages. Working together, we remain committed to the execution of campaigns that deter authoritarian state and non-state actors who challenge internationally accepted norms and threaten the relative peace that the United States and its allies and partners have worked to sustain. Through the application of new concepts and capabilities, Marines and Sailors will be better equipped and postured to support future campaigns against these adversarial threats.

The Marine Corps supports an overarching theme of integrated deterrence. By winning the reconnaissance and counter-reconnaissance fight, alongside allies and partners, we support a maritime defense in depth on behalf of the Joint Force and the interagency community. Success in the daily reconnaissance and counter-reconnaissance fight requires advanced sensors, networks, mobility, and precision fires—all of which the Marine Corps has advanced through iterative experimentation and rapid development. The Marine Corps' newly released *A Concept for Stand-in Forces* articulates how Marines will be employed as a strategic force, persisting within an adversary's engagement areas, detecting, deterring, and if necessary, aiding in the defeat of the adversary.

The necessity for the Marine Corps' shift in its strategic outlook is validated in the daily activities of China in the South China Sea, Russia in Eastern Europe, or in the actions of violent

extremist organizations across Southwest Asia. Over the last three years, the Marine Corps, with the support of Congress, has reprioritized and realigned existing funding to invest in its highest priority programs. With congressional support, we have begun to modernize capabilities while maintaining warfighting readiness. Operating from the littorals as part of the Naval Expeditionary Force, the Marine Corps will continue to support campaigns that disrupt China and other threats. We will maintain readiness to compete and win today, as we continue the imperative to modernize our most important warfighting capabilities.

Long-Range Precision Fires

The Marine Corps will hold adversary maritime threats at risk through its employment of precision fires from air, land, and surface platforms, thus enabling fleet maneuver. Over the last year, the Marine Corps has successfully tested its land-to-sea fires employing the Navy/Marine Corps Expeditionary Ship Interdiction System (NMESIS) and Long Range Fires (LRF) programs. These tests demonstrated the benefit of repurposing mature technologies to create highly effective capabilities able to impose significant cost upon our adversaries. This potential of cost imposition adds a significant secondary benefit to our modernization effort. It will alter and destabilize adversary decision and planning cycles, which lends additional deterrence value. Fires capabilities such as these, and others, will serve to deter, and if necessary, defeat adversarial threats in and around littorals across the globe.

Navy/Marine Corps Expeditionary Ship Interdiction System

In this budget request, the Navy/Marine Corps Expeditionary Ship Interdiction System (NMESIS) continues to be the Marine Corps' top modernization priority and is the critical lethality component to our anti-ship missile capability. In conflict, NMESIS will allow the Stand-in Force to

deny or protect key maritime terrain from the enemy. Additionally, this system can be employed to herd the enemy into areas where Joint and Coalition forces can exploit their relative advantages. NMESIS will create cost impositions for adversaries by introducing a credible threat into their decision-making at a relatively low cost to U.S. Forces.

The NMESIS consists of two Naval Strike Missiles mounted on a remotely operated Joint Light Tactical Vehicle-based chassis. Due to the mature technology in NMESIS, the Marine Corps has reduced programmatic risks. Indicative of this, the Marine Corps has successfully tested NMESIS twice, once in November 2020 and more recently in August 2021. Given the performance metrics over the last two years of testing, we believe NMESIS will have immediate effects in the operational environment. This year's budget request builds the NMESIS launcher and missile capacity.

Organic Precision Fires

Organic Precision Fires (OPF) will provide multiple echelons of the Fleet Marine Force with an organic, loitering, beyond line-of-sight precision strike capability. The system is comprised of a surveillance capability, separate loitering munitions, and a command and control station. OPF will provide continuous surveillance before, during, and after conducting lethal strikes. OPF offers Marines less exposure to enemy fires by offering range outside of adversary direct fire weapons. The associated loitering munitions will have sufficient lethality to defeat armored, water-borne, and personnel threats. Funding requests will continue to support testing, experimentation, and user evaluations with OPF prototypes.

Long-Range Unmanned Surface Vessel

The Long-Range Unmanned Surface Vessel (LRUSV), approximately 45 feet in length, is intended to be capable of conducting semi-autonomous maneuver in the open ocean for extended periods of time. The vessels will also be capable of launching the Organic Precision Fires loitering munitions that are capable of engaging targets on land and at sea. The LRUSV, combined with Organic Precision Fires, will increase the effective range and lethality of formations, such as the Marine Littoral Regiment. This combination of capabilities will enhance Naval and Joint Force Commanders' sea denial campaigns.

The Marine Corps is taking a deliberate approach to capability development. By using prototyping, experimentation, and working closely with program vendors, we ensure delivered capabilities are in line with funded requirements. In the 1st quarter of FY22, the Marine Corps accepted the first of five LRUSV prototypes for experimentation and analysis. The Marine Corps anticipates receiving additional prototypes in the 3rd quarter of FY22 for continued testing and refinement. The Marine Corps remains on schedule and within budget to deliver an LRUSV Experimental Platoon to the Expeditionary Warfare Training Group – Atlantic for further development and unit training.

Resilient Sensors and Communication Networks

To win the daily reconnaissance and counter-reconnaissance fight across the competition continuum against peer adversaries, Marines require resilient and interoperable sensors and communication networks. As the Stand-in Force, Marines use advanced sensors to enable the closing of Joint kill-webs by being able to sense, make sense, and share collected information. These efforts ensure the Marine Corps is an effective contributor to the Naval Tactical Grid and the Department's Joint All-Domain Command and Control. The following programs create information advantages for the Joint Force across the globe and provide decision space for national leaders.

Ground/Air Task-Oriented Radar

The Ground/Air Task-Oriented Radar (G/ATOR) is a proven platform that continues to exceed expectations. G/ATOR is a multi-role, ground-based, 3D radar system that is designed to detect air threats, rockets, missiles, and mortars. The radar is transportable by organic Marine Corps means and provides a significant “engage on remote” capability in support of Expeditionary Advanced Base Operations. The Marine Corps has fielded these radars throughout the force, with several located in the Indo-Pacific region.

The Marine Corps, as the forward element of the Joint force, continues to invest in and improve the sensor capabilities of G/ATOR. In 2021, at the Army’s Project Convergence exercise, G/ATOR successfully integrated with and supported a Navy-Marine Corps live-fire kill-chain event. This is yet another meaningful step towards greater Naval integration and adding existing Marine Corps platforms to the Joint and Naval Integrated Air and Missile Defense mission. The Office of Naval Research (ONR) also developed an advanced, complementary system to the G/ATOR, the Multi-Domain Radar for a Contested Environment (MuDRaCE). ONR is maturing the technology and will transition this capability to the Marine Corps for incorporation as a program of record.

Marine Air-Ground Task Force (MAGTF) Electronic Warfare Ground Family of Systems

The Marine Air-Ground Task Force (MAGTF) Electronic Warfare Ground Family of Systems (MEGFoS) is an electromagnetic warfare (EW) system designed to advance our capabilities in the electromagnetic environment. MEGFoS protects friendly spectrum access, senses spectrum usage, and provides a means for disrupting an adversary’s decision-making cycle. MEGFoS is comprised of three variants – mounted, dismounted, and team portable. All three variants are networked and able to share data and coordinate EW missions with one another. In the 1st quarter of

FY22, the Marine Corps began experimentation with a prototype of the MEGFoS team-portable variant. In this year's budget request, the Marine Corps is seeking to procure a mixture of mounted, dismounted, and team-portable systems.

Networking On The Move

Network on the Move (NOTM) is a satellite communications (SATCOM)-based command and control system mounted on a ground combat vehicle or aviation platform. NOTM provides terrestrial line-of-sight and beyond line-of-sight communications for Marines at-the-halt and while on-the-move. The system is purpose built for Marines fighting in a distributed manner, in alignment with naval and joint concepts, to effectively facilitate command and control of forces in a contested all-domain environment. The Marine Corps continues to procure and field these systems to distributed Fleet Marine Force units, enabling command and control, now and in the future.

Wideband Satellite Communication

The Marine Corps' Wideband Satellite Communications (WSATCOM) Family of Systems is a comprehensive, integrated, and sustainable solution designed to address current and future warfighting capability needs. WSATCOM uses military and commercial SATCOM systems in both contested and permissive electromagnetic spectrum environments. The WSATCOM will replace legacy and very-small-aperture terminal communications systems. This modernized system provides integrated, secure, and near real-time communications capability for Marines operating in a degraded communication environment. Moreover, it will be fully interoperable with naval and joint wideband SATCOM systems.

Integrated Broadcast Radio

Integrated Broadcast Radio (IBR) is the Marine Corps' family of terminals that provides direct, over-the-air access to the Joint-sponsored Integrated Broadcast Service. The IBR receives and processes near-real time multi-intelligence data from strategic, theater sensors, and tactical sensors, to include Theater Missile Defense indications and warnings. At the tactical level, IBR is compatible with intelligence analysts' equipment capabilities. To ensure the survivability of the network, the IBR is low-bandwidth and capable of operating in a degraded, intermittent, and emission-controlled environment. The FY23 budget request will provide for the modernization and procurement of over 600 additional receivers distributed across Fleet Marine Force units.

Secure Expeditionary Resilient Positioning, Navigation, and Timing

Secure Expeditionary Resilient Positioning, Navigation, and Timing (SERPNT) is the program formerly known as Military Global Positioning System (GPS) User Equipment (MGUE). SERPNT will enable Marines to effectively navigate and receive precise and accurate timing information for themselves and their platforms. Funding requests in the FY 2023 President's Budget will sustain current Positioning, Navigation, and Timing (PNT) capabilities across the enterprise while investing in future PNT capabilities. Under the SERPNT program, the Marine Corps will transition to modernized Military-Code (M-Code) PNT capabilities which provide upgraded protections against enemy jamming and spoofing threats. The program is also a critical enabler of the Marine Corps' participation in Joint All-Domain Command and Control.

Marine Corps Enterprise Network

The Marine Corps Enterprise Network (MCEN) is an enterprise program enabled by cloud technology, modern networking tools and applications, and core enterprise services. This network supports free flow of warfighting data across bases, stations, and tactical environments.

Modernization efforts of MCEN, such as the incorporation of Tactical Entry Points, will provide secure, Data-Centric information and services to Marine Corps personnel and enable integration with the Joint Force. MCEN forms the foundation for the Marine Corps' single warfighting network and is interoperable with and leverages other Department of Defense provided Data-Centric Enterprise Services, supporting the Joint Information Environment.

Rotary Wing Programs

Rotary wing airframes play a critical role within Force Design, providing lethality, maneuverability, targeting, flexibility, and persistent sustainment to the Marine Air-Ground Task Force while operating from the sea and austere expeditionary basing.

CH-53K Heavy Lift Replacement Program

CH-53K is an optimized vertical, heavy lift, sea-based, long-range solution for the naval force, providing agile maritime logistical connectors with greater payloads and speed than any current or emerging rotorcraft. The CH-53K will complement connectors to enable littoral maneuver and provide logistical support to a widely disaggregated naval force. The Marine Corps achieved initial operational capability in the CH-53K in April 2022. This closely follows completion of a thorough Initial Operational Test and Evaluation period that resulted in over 3,000 mishap free hours flown in various challenging environments and terrain, including an impressive real-world use of the aircraft to recover a downed Navy H-60, weighing 15,500 pounds, from an altitude of 12,000 feet in the mountains of California in September 2021.

A contract to procure the sixth Low Rate Initial Production Lot of nine aircraft was signed in January 2022, and the Department of the Navy has requested the authority to enter into a block buy contract for Lots 7 and 8 in FY23. A block buy contract leverages aircraft volume quantity to realize

significant cost savings, providing stability to the industrial base and improved production efficiencies while supporting the Marine Corps' plans to deploy the first CH-53K Marine Expeditionary Unit detachment in FY24.

AH-1Z and UH-1Y

The Marine Corps' AH-1Z and UH-1Y provide combat capability to meet and defeat adversary threats across the entire spectrum of conflict. AH-1Z and UH-1Y with their multiple capabilities and mission sets serve a flexible role as sensors, shooters, and sustainers, especially as the Marine Corps must provide a variety of crisis response missions. In deterrence, AH-1Z and UH-1Y will be a contributor to a network-enabled force, an active player in the kill web, and a provider of lethality and sensing capability to distributed Stand-in Forces. The H-1 program of record is nearing completion, with final aircraft deliveries scheduled to take place this year.

The Marine Corps requests funding in the FY 2023 President's Budget to ensure continued battlefield relevance, lethality, survivability, and operational safety through the remaining aircraft service life. Specific efforts include avionics improvements (Link-16); sensors, weapons, and survivability improvements; and air vehicle structural improvements (Structural Improvement Electrical Power Upgrade (SIEPU). UH-1Y SIEPU structural modifications include cabin deconfliction and optimization to improve mission load out and aircrew safety, and are a top priority initiative to increase lethality and maintain H-1 platform relevance.

VH-92A Presidential Helicopter Replacement Aircraft

In addition to combat aircraft, the Marine Corps provides the President and Vice President of the United States, heads of state, and other official parties with safe and reliable global vertical lift air transportation with high levels of security and communication capability. Government testing to

validate system performance and execute Initial Operational Test and Evaluation was completed in April 2021, and initial operational capability achieved in December 2021. Total VH-92A inventory will be 23 aircraft (21 operational aircraft and two test aircraft), and final deliveries of all VH-92A helicopters are expected to be complete by 2023. Work is continuing on VH-92A improvements and follow-on test and evaluation activities, including Mission Communications System upgrades to both software and hardware, enhancements to required Wide Band Line Of Sight capabilities, test aircraft and facilities; and test and evaluation efforts for distributed network communications, high-hot aircraft performance enhancements, and cockpit upgrades.

Mobility Programs

The Marine Corps requires sensors, communications, and lethality programs to conduct reconnaissance and act as a “blunt” force, and mobility programs to posture forward to respond to crisis and deter aggression. The Marine Corps operates through organic mobility programs, including ground, aviation, and surface programs.

Amphibious Combat Vehicle and Joint Light Tactical Vehicle

This budget continues procurement of the Amphibious Combat Vehicle (ACV), which provides significant improvements over the legacy Assault Amphibious Vehicle in mobility, lethality, protection, and safety. The Marine Corps requests funding in the FY 2023 President’s Budget to procure 74 ACVs that will enable crisis response forces the ability to maneuver from amphibious warfare ships to the shore without a port facility. When required, ACVs launched from amphibious warfare ships enable a forcible entry capability. This fall, a platoon of ACVs will conduct its first operational deployment as part of a Marine Expeditionary Unit. Additionally, the Joint Light Tactical Vehicle (JLTV) has proven a capable and versatile platform, not only for its

primary mobility mission, but also to enable fires, command and control, and air defense systems. This year's FY 2023 President's Budget continues JLTV procurement, as we modernize our tactical vehicle fleet.

Amphibious Warfare Ships and Light Amphibious Warship

In addition to ground programs, the Marine Corps' service-wide modernization effort is predicated on Navy shipbuilding programs. This includes amphibious warfare ships that provide the maritime mobility of our "crown jewel," the Marine Expeditionary Unit. In addition, the Department continues to invest in the development of the Light Amphibious Warship, or Landing Ship Medium. This ship will complement amphibious warfare ships and will provide added surface mobility for Marine Corps Stand-in Forces. The continued support of Congress for Navy amphibious ships is critical to the Marine Corps' ability to forward deploy and meet the requirements of our objective 2030 force.

Conclusion

The highlighted programs enable the Marine Corps to close kill webs and deter strategic competitors. Some of the programs are emerging, while others are more mature in the acquisition process. Maintaining momentum for the Marine Corps' modernization efforts expedites our ability to meet the requirements for critical warfighting concepts, such as *A Concept for Stand-in Forces*. Our proactive modernization, balanced with the readiness needed to "fight tonight," will ensure your Marine Corps remains a naval expeditionary force-in-readiness. Our goal with this budget is to provide a relevant and modern force that can sense, make sense, and act today and in the future in support of Naval and Joint campaigns. Our Marines and Sailors around the globe thank you, and your constituents in industry that are building these systems, for your continued support.

Frederick J. Stefany
Assistant Secretary of the Navy for
Research, Development and Acquisition (PTDO)

On January 20th 2021, Mr. Frederick J. (Jay) Stefany assumed the duties of Acting Assistant Secretary of the Navy for Research, Development and Acquisition and transitioned to Performing the Duties of (PTDO) in November 2021. In October 2019, Mr. Stefany began serving as the Principal Civilian Deputy to the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN RDA). His responsibilities include oversight and policy for Navy and Marine Corps research, development, and acquisition/sustainment programs for shipbuilding, aviation, space, weapon systems, and communication systems. His portfolio includes oversight of more than 100,000 people and an annual budget in excess of \$50 billion. Mr. Stefany also leads the Department's Senior Executive Acquisition Corps.

Prior to that he served as the Deputy Assistant Secretary of the Navy for Ship Programs from April 2018 through September 2019. In this role, he was responsible for executive oversight of all naval shipbuilding programs, major ship conversions, and the modernization and disposal of in-service ships. He was also responsible for executive oversight of cost, schedule and performance of surface ship, submarine, and Marine Corps combat systems, electronic warfare systems, shipboard radars, and Navy missile defense programs.

Previously Mr. Stefany served as Executive Director, Amphibious, Auxiliary and Sealift Office, Program Executive Office, Ships. He provided executive leadership to 200 personnel and oversaw one of the broadest acquisition portfolios in the Navy. His responsibilities spanned four major program offices where he oversaw several major shipbuilding programs including LHA 6, LPD 17, EPF, ESB, T-AKE, T-AO(X), and Heavy Icebreaker ship classes, as well as ship-to-shore connectors, landing craft, research ships, service craft & boats, and procurement of vessels for our Foreign Military Sales and other Federal Government partners.

Mr. Stefany entered the Senior Executive Service in March 2012, and has been in civil service for more than 37 years. Serving in a variety of key leadership positions throughout his career, including Program Manager and Deputy Program Manager for the LPD 17 Class Amphibious Transport Dock ship program (2004-2012). During his tenure, the first six ships of the San Antonio Class were delivered; and construction started on four additional hulls. He also assumed responsibilities for management of the initial concept work on a replacement for the Navy's Command & Control Ships and later, the replacement for the LSD 41 and 49 class ships.

Previous assignments include Director of Naval and Commercial Construction (2002-2004), responsible for oversight of the Navy's portfolio of Amphibious, Auxiliary and Special Mission ships and craft for the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN RD&A); Assistant Program Manager in PMS 377 for LCAC and for Amphibious Ship Combat/C4I Systems; and Project Engineer for both the LHD 5-7 and LHD 1-4 ship acquisition programs as PMS 377 delivered LHD 1-6 and LSD 52 to the Fleet.

Mr. Stefany received his bachelor's of science in mechanical engineering from Lehigh University, Bethlehem, Pa., and his master's of science degree in management from the Florida Institute of Technology, Melbourne, Fla. He is also a 1996 graduate of the Defense Systems Management College, Advanced Program Management Course. During his distinguished federal career, Mr. Stefany has received the Presidential Rank Award for Meritorious Service, Navy Civilian Meritorious Service Award and two Navy Civilian Superior Service Awards.

16 Feb 2022

Lieutenant General Karsten S. Heckl
Commanding General, Marine Corps Combat Development Command;
Deputy Commandant for Combat Development and Integration

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.

Lieutenant General Mark R. Wise
Deputy Commandant for Aviation

Lieutenant General (LtGen) Mark R. Wise was born in Amarillo, TX, and is a graduate of the University of Washington in Seattle, Washington, and the Naval War College in Newport, RI.

LtGen Wise served as the Commanding Officer of Marine Fighter Attack Squadron (VMFA) 122 Crusaders from 2003 to 2004 during which the squadron deployed in support of the Unit Deployment Program. He commanded Marine Aircraft Group (MAG) 12 from 2008 to 2009 during which he supported numerous exercises throughout the Western Pacific Region. From 2011 to 2013, he served as Commanding General, Marine Corps Warfighting Laboratory aboard Marine Corps Base Quantico, VA. From 2016 to 2018, LtGen Wise served as Commanding General, 3rd Marine Aircraft Wing (MAW) aboard Marine Corps Air Station Miramar.

LtGen Wise's operational tours include service with VMFA-333 during Operation DESERT SHIELD and Operation DESERT STORM; VMFA-312 with Carrier Air Wing (CVW) 8 aboard the USS THEODORE ROOSEVELT during Operation DENY FLIGHT and Operation SOUTHERN WATCH (OSW); the 58th Fighter Squadron during OSW; and VMFA- 251 with CVW-1 and the USS GEORGE WASHINGTON in support of OSW.

LtGen Wise's staff tours include various billets with MAG-31 and MAG-12 between 1998 and 2008 as well as assignment to Headquarters Marine Corps, Aviation from 1999 to 2001. In 2009, he deployed to Kabul, Afghanistan, as an individual augment to the International Security Assistance Force. In 2010, LtGen Wise returned to Headquarters Marine Corps and served as the Deputy Branch Head for Aviation Plans, Policies, Budget, and Joint Matters until 2011. From 2011 to 2013, while serving as the Commanding General of the Marine Corps Warfighting Laboratory, he also served as the Vice Chief of Naval Research. In 2013, LtGen Wise was assigned as the Assistant Wing Commander, 3rd MAW and in 2014, he was assigned as the Deputy Commander, United States Forces Japan. From 2018-2020, he served as the Assistant Deputy Commandant for Combat Development & Integration and Deputy Commanding General Marine Corps Combat Development Command. LtGen Wise assumed his current position as the Deputy Commandant for Aviation, Headquarters Marine Corps in July 2020.

LtGen Wise's personal decorations include the Defense Superior Service Medal, Legion of Merit, Bronze Star, Meritorious Service Medal with gold star in lieu of second award, Air Medal - individual action with combat "V", Strike Flight Air Medal eighth award, Joint Commendation Medal, Navy and Marine Corps Commendation Medal with gold star in lieu of second award, and Air Force Commendation Medal. He has more than 4,000 flight hours, primarily in the F/A-18 Hornet and F-15C Eagle.

**WITNESS RESPONSES TO QUESTIONS ASKED DURING
THE HEARING**

MAY 13, 2022

RESPONSES TO QUESTIONS SUBMITTED BY MRS. HARTZLER

Mr. STEFANY. As the Primary Inventory Control Activity for Stinger, the Army is currently in contract negotiations with Raytheon to expand capacity of the Stinger production line and procure additional test equipment. No additional support is needed to accomplish this critical expansion. In addition, the Army has contracted for the replenishment of Stinger missiles that were recently provided to support the Ukrainian conflict efforts. With raw material on hand, Raytheon will be able to replenish the Marine Corps' 1000 missiles, but delivery will not begin until FY25 based upon limited part availability and long-lead items. The current USMC inventory of Stinger missiles will be capable of sustaining the USMC War Reserve Munition Requirement and live fire training requirements through FY24. Beginning in FY25, the USMC will need to balance the need for live fire training with recently fielded simulation-based training. [See page 9.]

General HECKL. The Marine Corps will begin fielding the Navy Marine Expeditionary Ship Interdiction System (NMESIS) to Medium Missile (MMSL) Batteries starting in (FY) 2023. The fielding plan calls for incrementally fielding up to 14 batteries across the Marine Corps by FY2030.

A Medium Missile Battery at full capacity will have up to 18 launchers. The Marine Corps' acquisition objective for launchers is 261, which will support 18 NMESIS per operational battery. This acquisition objective will also provide systems for additional training and sustainment. [See page 11.]

RESPONSE TO QUESTION SUBMITTED BY DR. JACKSON

General WISE. Maximum capacity for Nacelle Improvements kit production and installations at Bell is 36 per year in the first year of execution. 36 Installs a year would represent a higher risk of execution in the first year of installations on MV-22B aircraft due to the adaptation of the installation team to the MV-22B. Based on prior experience with commencing a significant modification program, executing 30 installs in the first year of execution represents a lower execution risk to the program and enables the MV-22B community to ramp to a higher rate in following years. Lead time for the components of a Nacelle Improvements Kit is 22 months from contract award to delivery.

The FY23 budget includes 9 NI kits, which are planned to be installed at the completion of the CV-22 NI install program, currently scheduled for late FY24. The FY23 Unfunded Priority List (UPL) included an additional 15 NI kits, for a total of 24 NI Kits; which balanced program affordability with execution. 30 Kits is the optimum installation quantity the MV-22 Fleet can support in the first year of execution. Since submission of the UPL, the program learned of a Bell-Boeing \$1.2M NI Kit unit cost increase. The cost of an installed Nacelle Improvements Modification is \$6.9M per aircraft (\$5.48M for the kit and \$1.42M for the install). The total required for procurement of 30 NI kits is \$164.4M. The cost for the installs of these kits in FY25 will be: \$42.6M. [See page 18.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

MAY 13, 2022

QUESTION SUBMITTED BY DR. JACKSON

Dr. JACKSON. While the entire Department of Defense remains focused on modernization, each of the services are undergoing various unique lines of effort as well.

The Army's Future Vertical Lift Cross Functional Team is aggressively looking to modernize much of their rotary platforms.

One example is the Future Long Range Assault Aircraft which will eventually replace all of the Army's Black Hawk helicopters.

As the Army has worked through its hurdles in fielding this new platform, I feel like there is much to learn.

General Wise, could you speak to the development of future rotary aircraft for the Marine Corps and if the Marines are taking lessons learned from the Army's Future Vertical Lift major acquisition programs?

General WISE. USMC future vertical lift development pivoted from pursuing the Attack Utility Replacement Aircraft to a Vertical Takeoff and Landing (VTOL) Family of Systems (FoS) as the Service redirected its focus under the 38th Commandant's Planning Guidance and Force Design 2030. HQMC Aviation and Combat Development & Integration are currently conducting a modified capabilities-based assessment of the current USMC vertical lift inventory to identify gaps operating in support of Expeditionary Advanced Bases Operations (EABO). This gap analysis will serve as a foundational study, informing the development of an Initial Capability Document (ICD) to support a VTOL FoS portfolio. Multiple Capability Development Documents will be derived from the ICD to develop vertical lift capabilities within the VTOL FoS portfolio. The USMC VTOL FoS portfolio will take a capabilities-based approach versus a platform-based approach. The USMC VTOL FoS is a member of the OSD FVL Joint Council of Colonel (JCoC). The OSD FVL JCoC is a forum that allows each service to provide monthly updates, collaboration, and sharing of information regarding their specific service's FVL efforts. HQMC is closely monitoring sister service FVL efforts, such as the Army's analysis of alternatives for its FARA aircraft and their approach to accelerated acquisitions programs. The USMC VTOL FoS will continue to maintain its dialogue amongst the joint FVL efforts as it develops a capability-based portfolio.

