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ON

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2018

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES HEARING

ON

DEPARTMENT OF THE NAVY FISCAL YEAR 2018 BUDGET REQUEST FOR SEAPOWER AND PROJECTION FORCES

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DEPARTMENT OF THE NAVY FISCAL YEAR 2018 BUDGET REQUEST FOR SEAPOWER AND PROJECTION FORCES

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES,
Washington, DC, Wednesday, May 24, 2017.

The subcommittee met, pursuant to call, at 2:08 p.m., in room 2212, Rayburn House Office Building, Hon. Robert J. Wittman (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. ROBERT J. WITTMAN, A REPRESENTATIVE FROM VIRGINIA, CHAIRMAN, SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES

Mr. WITTMAN. I will call to order the Subcommittee on Seapower and Projection Forces of the Committee on Armed Services. And today, we meet to discuss the Department of Navy's fiscal year 2018 budget request.

Appearing before us today to discuss the important topic are three esteemed Navy witnesses. First, we have Ms. Allison Stiller, performing the duties of Assistant Secretary of Defense, Research Development and Acquisition.

We also have Vice Admiral William K. Lescher, Deputy Chief of Naval Operations for Integration of Resources and Capabilities; and Lieutenant General Robert S. Walsh, Deputy Commandant of Combat Development and Integration.

And I want to thank all of you for your service, and just as important, thank you for appearing before this subcommittee on the fiscal year 2018 budget request.

Last week, the Chief of Naval Operations [CNO], Admiral Richardson, laid out a bold vision for the Navy. He indicated, "Both China and Russia are able to compete on a global scale, in all domains, and at competitive speed." In response to this increased global pressure, he stated, "The future fleet must be timely—we need this more powerful fleet in the 2020s, not the 2040s." Without any reservation, I believe that the CNO is correct. Unfortunately, the fiscal year 2018 budget request does not support the vision of the CNO, nor of this subcommittee.

While I do not object with the budget's emphasis on current readiness, I believe that there is a high degree of naivete in the area of ship construction. We must start now, not in 2019. Some believe that ship construction is like a spigot that can be turned off and on. I believe that there are those in defense budgeting that advocate for such an approach.

In ship construction, though, we know one thing for certain: Ship construction is a long game and requires steady funding to achieve

steady progress. Unfortunately, I do not see steady progress towards fulfilling the goal of attaining a 355-ship Navy. The budget request of only 8 ships does little to build towards a 355-ship Navy. We have hot production lines ready to add more work, but the call to duty has not been sounded. It is time to get serious and match our peer competitors with aggressive ship construction initiatives.

As to the specific concerns with the Navy request, building 1 aircraft carrier every 5 years will never allow us to reach 12 aircraft carriers; building 2 attack submarines a year will result in a submarine reduction in force by 20 percent in 10 years; and building only 1 LCS [littoral combat ship] will result in massive layoffs at both Marinette and Mobile in the States of Wisconsin and Alabama. These are not acceptable outcomes.

As the Marine Corps, I am pleased that this committee has supported—as to the Marine Corps, excuse me, I am pleased that this committee supported the authorization of two more *San Antonio*-class amphibious ships in the last 2 years. However, I hold some concerns in respect to conducting amphibious operations in a contested environment. As our adversaries become more capable, our Marine Corps may need a bold new vision to accomplish future missions.

And I know, in speaking with General Walsh, that they are well on track to do that and looking at all the opportunities that are out there, using every platform at their avail, but it is our duty to make sure that we find ways to make sure we enable and allow for those visions to be accomplished.

This vision may require a change to our legacy forces. Expansion of aviation projection, longer range connectors, and a lighter amphibious capability are all desired attributes of a more capable expeditionary force structure. Unfortunately, I see little of this in the budget request to change our current trajectory.

I am reminded of the words of John F. Kennedy himself, a proud Navy officer, when he said that history has taught us that control of the seas means security. Control of the seas can mean peace. Control of the seas can mean victory. The United States must control the seas if it is to protect your security. Ladies and gentlemen, it is time that our Nation wake up and seize control of the seas.

I would now like to turn to our ranking member, Joe Courtney, for any remarks that he may have.

[The prepared statement of Mr. Wittman can be found in the Appendix on page 37.]

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

Mr. COURTNEY. Thank you, Mr. Chairman.

And again, I want to thank the three distinguished witnesses that are here today to discuss the fiscal year 2018 budget request for the Department of the Navy and the Marine Corps.

Before we get into the substance of the hearing, I think it is important to remember the context in which we are considering the budget request submitted yesterday. In December of last year, the Navy, under President Obama and Secretary Mabus, released an updated Force Structure Assessment [FSA] that laid out a require-

ment for increasing the fleet from 308 ships to 355. Among other factors, the FSA noted that increased operations, lengthened deployments, and changing conditions around the globe necessitated this boost.

Then, in the early days of the Trump administration, the Navy submitted an Accelerated Fleet Plan that, in the words of Acting Navy Secretary Sean Stackley, stated: It offers a first step towards a framework to develop the strategic guidance and identify the investments needed to reinvigorate our naval forces. That plan identified 29 additional ships that the Navy found could be accelerated in support of the larger fleet identified in the FSA.

And just last week, the Chief of Naval Operations, John Richardson, released a white paper noting the urgent need to boost the fleet as quickly as possible. As he concludes in the paper, time is of the essence. I agree and, like many of my colleagues on this panel, I have eagerly awaited more details on how the Trump administration would move forward on the highly bipartisan push for a larger and more capable Navy fleet.

Unfortunately, the shipbuilding budget released yesterday reflects none of these inputs. Instead, it requests funding for only 8 ships and submarines, the same level as planned by the former Obama administration plan prior to the December FSA, lower than the 11 ships that we just voted on in the 2017 Omnibus Appropriations Act that we passed out of Congress just this last month on a bipartisan basis, and lower than the 12 ships that the Navy identified in its Accelerated Fleet Plan for 2018.

In other words, the Trump administration has proposed a 300-ship budget for a 355-ship plan. This proposal really begs the question, what is the administration waiting for? The table was set for this administration to take the work that had been done for years during the prior administration to hit the ground running towards a larger fleet.

While I understand the Defense Department is planning a wider review of its defense strategy that will guide future investments, I can think of no element of the Department that has as solid a foundation to start from than shipbuilding. A year lost in shipbuilding can never be regained, and, unfortunately, that is what this budget proposes.

Shipbuilding, as the chairman stated, is a long game that relies on certainty in the Navy's plans and intentions. Nothing in this budget, however, provides any clarity on where this administration intends to go with the buildup of the fleet. There is no 30-year shipbuilding plan that was submitted yesterday. And there was no FYDP, there was no Future Years Defense Plan, that defense officials so far have just simply named as a placeholder.

Congress, industry, and the American people are left guessing as to the way ahead. For some shipyards, this could be a make-or-break issue for them, and we need to tread carefully to ensure that we have a well-rounded industrial base in the future.

We have a lot of hard work ahead in the next few weeks to craft our 2018 defense authorization bill and an extremely truncated timeline. I hope that we will use the modest shipbuilding request submitted to us yesterday as a floor and not as a ceiling as we look

for ways to further support the Navy's fleet expansion and the industrial base that we will need to support it.

That is not to say that there are not elements in this budget that I strongly support. One area of welcome progress is in our undersea forces. In addition to fully funding two attack submarines in 2018, as planned in the 2014 multiyear contract, the budget supports a long-sought priority of mine, which is the restoration of a second attack sub in 2021, making sure that the two-a-year build rate will be all the way through the next block contract, Block V contract. That means we can expect at least 10 submarines in that next block, while we look for additional opportunities to increase that rate where the capacity exists to meet the increased fleet requirements of the FSA.

In addition to supporting continued development and early production on the *Columbia*-class SSBN [ballistic missile submarine], the budget reflects the Navy's use of key authorities that we provided through the National Sea-Based Deterrence Fund. I note that nearly $100 million is allocated in this budget for continuous production of missile tubes and advanced construction activities in the first *Columbia*-class boomer, the SSBN–826.

As we well know, which is we are the committee that drafted and created the National Sea-Based Deterrence Fund, the authorities in the NSBDF have been projected to save hundreds of millions of dollars if fully utilized. And I look forward to hearing more from the Navy about how they intend to use those authorities in 2018 and beyond.

I also strongly support the increased focus on restoring readiness and operational availability of our fleet through expanding funding for the ship depot maintenance. This is a topic that Chairman Wittman and I recently publicly discussed in a forum together and one that is absolutely critical to ensuring that we can fully utilize the fleet we have today as we build towards the future.

It appears that the budget intends to leverage capacity in the private yards to support maintenance priorities as well as focus investment in our shipyard capacity and infrastructure. The backlog in ship availabilities is immense, and we clearly need to do more to address this problem in 2018 and beyond.

Finally, so much of what we do in the 2018 budget will depend on how we address the Sword of Damocles that is hanging over the entire process: the Budget Control Act caps, and the threat of sequestration. Much has been said about lifting the defense sequester at the expense of non-defense spending, such as STEM [science, technology, engineering, and mathematics] education and job training funding outside of the Pentagon. I can think of no worse approach for the overall security and well-being of our Nation.

We cannot expect to embark on the buildup of our ships, aircraft, or other advanced technologies if we are at the same time gutting education, workforce development, skills training, and other efforts at closing the job-skill mismatch that is rampant in defense manufacturing all across the country. The only way we are going to extract ourselves from our current budget quagmire is through a balanced approach that ensures that we meet all the needs of our Nation.

I yield back.

Mr. WITTMAN. Thank you, Mr. Courtney. Thanks for those opening statement words. And it is good to know that I think we are both on the same page about what the course is ahead.

So with that, Ms. Stiller, I will go to you for the opening statement that I know that you will present for both the Navy and Marine Corps.

STATEMENT OF ALLISON STILLER, PERFORMING THE DUTIES OF ASSISTANT SECRETARY OF DEFENSE FOR RESEARCH, DEVELOPMENT, AND ACQUISITION; ACCOMPANIED BY LTGEN ROBERT S. WALSH, USMC, DEPUTY COMMANDANT FOR COMBAT DEVELOPMENT AND INTEGRATION, AND VADM WILLIAM K. LESCHER, USN, DEPUTY CHIEF OF NAVAL OPERATIONS FOR INTEGRATION OF RESOURCES AND CAPABILITIES

Ms. STILLER. Chairman Wittman, Ranking Member Courtney, distinguished members of the subcommittee——

Mr. WITTMAN. Ms. Stiller, if you can either pull the mike closer to you or turn it on.

Ms. STILLER. Well, I turned it on. I will talk loud.

Mr. WITTMAN. Okay. We have got to make sure we have it on the microphone.

Ms. STILLER. Okay. I will start this way.

Chairman Wittman, Ranking Member Courtney, distinguished members of the subcommittee, thank you for the opportunity to appear before you today to address the Department of the Navy's acquisition programs. I am joined this afternoon by Lieutenant General Bob Walsh, Deputy Commandant for Combat Development and Integration; and Vice Admiral Bill Lescher, Deputy Chief of Naval Operations for Integration of Capabilities and Resources.

I request that our written statement be included in the record.

Mr. WITTMAN. So ordered.

Ms. STILLER. On behalf of our Navy and Marine Corps, we want to thank this subcommittee for your strong support and the fiscal year 2017 defense authorization and appropriations bills. Not only has Congress supported our request, but the committee increased funding for many of our critical programs. We are committed to making good on that investment and to do so in the most fiscally responsible manner possible, to provide the ships, aircraft, vehicles, and weapons that are needed for our men and women in uniform to be successful.

We have continued to leverage every tool available to drive down cost. We have tightened requirements, maximized competition, capitalized on multiyear and block-buy procurements, explored cross-program efficiencies, and attacked our cost of doing business so that more of our resources can be dedicated to warfighting capability.

Global activities over the last year have made it clear that security challenges are intensifying at an increasingly rapid pace. To remain competitive, it is imperative that we continuously adapt to the emerging security environment and to do so with a sense of urgency. This requires us to work closely with Congress to return budget stability and predictability to the Department, which necessitates increasing defense caps under the Budget Control Act.

Our 2018 President's budget [PB] submission is governed by SECDEF's [Secretary of Defense's] priorities to improve warfighting readiness by addressing pressing programmatic shortfalls that have accrued from 15 years of wartime operational tempo. The budget maintains the operational effectiveness of our current force while also building a bridge to growing the future force, starting in 2019. Over the past year, 11 ships were delivered and an additional 12 ships were christened. One of the ships delivered this year was DDG 1000 [guided missile destroyer], USS *Zumwalt,* a truly transformational platform. And today, CVN–78, *Gerald R. Ford,* our newest aircraft carrier, is at sea on her acceptance trials.

On the aviation side, over this last year we delivered over 130 manned aircraft and 120 unmanned aircraft. Of note, our P–8A successfully completed flight testing with a capability that will revolutionize air-based antisubmarine warfare. And we designated our carrier-based unmanned tanker as an accelerated acquisition program.

On the Marine Corps side, the Amphibious Combat Vehicle Program began delivery of vehicles this spring, with a total of 32 vehicles expected to be delivered by the end of the year. And last month, we conducted a ship-to-shore maneuver exercise, which demonstrated new technologies that could shape future amphibious operations.

I would like to briefly discuss a couple of items posed by our budget request. First, we have requested multiyear procurement authority for the fiscal year 2018 to fiscal year 2022 DDG–51 Flight III buy. We have a handshake agreement with Huntington Ingalls to introduce the Flight III capability on their fiscal year 2017 ship.

We are also requesting multiyear procurement authority for the fiscal year 2019 to fiscal year 2023 *Virginia* class, which will introduce the *Virginia* payload capability.

Second, we have made a couple of adjustments to our 5-year shipbuilding plan. We added a *Virginia*-class submarine in fiscal year 2021, and we have deferred the start of the Frigate Program from fiscal year 2019 to fiscal year 2020 while we revisit the ship's requirements.

Our small surface combatant requirement remains at 52 ships, and we desire to transition to the frigate as soon as possible. However, the administration recognizes the criticality of our industrial base and supports funding a second LCS in fiscal year 2018. We note that our shipbuilding plan beyond fiscal year 2018 may be adjusted in our PB–19 submission as a result of the defense strategic review that we will complete later this summer, consistent with SECDEF's fiscal year 2019 priority to grow a larger and more lethal force.

In summary, the Navy's 2018 budget is focused on improving the wholeness of our current forces. We greatly appreciate the subcommittee's strong and consistent support of your sailors and marines.

Mr. Chairman, thank you for the opportunity to appear before you today, and we look forward to answering your questions.

[The joint prepared statement of Ms. Stiller, General Walsh, and Admiral Lescher can be found in the Appendix on page 39.]

Mr. WITTMAN. Ms. Stiller, thank you. Vice Admiral Lescher, Lieutenant General Walsh, thank you so much for joining us today.

I wanted to begin. I am going to just ask a single question and I want to go to the ranking member and our other members, because we have a long list of members that want to ask questions.

So, Lieutenant General Walsh, I want to get your perspective on where the Marine Corps is today. If we look at and hear the assessment of where the Marine Corps is, we look at the force today, and it is a heavier force and a less expeditionary force than it was 20 years ago.

And I think in the contested environment that we face, some of the things that the Marine Corps has to do is to look at the weight of amphibious forces, looking at the capability of connectors, making sure we are optimizing that capability, making sure too that in all instances we can project power as a highly maneuverable force in a contested environment. I think that those are things that we absolutely have to do today.

And I just want to get your perspective on what changes are being made to expand our amphibious connectors and how we are going to be able to project power and what capabilities we will have in a contested environment. And how is the Marine Corps leveraging what I believe for the Marine Corps is a renaissance in aviation capabilities in amphibious operations?

General WALSH. Thank you, Chairman, for that question and the opportunity to talk to you here today and all the support the committee has done, particularly around LPD–28 and 29 [amphibious transport dock ships] and that support.

Great question. And I think, you know, as we look at where we have been, we have been focused really for the last 15, 16 years on the ground in Iraq and Afghanistan. So this renaissance, you know, as you call it, in aviation, aviation has been moving out, and one of the things that the Commandant has us focused on is developing a fifth-generation Marine Corps. And as we look at that fifth-generation Marine Corps, there are pieces and places inside the Marine Corps we are developing that fifth-generation capability.

Last year, we conducted really about an 18-month force structure assessment of the entire Marine Corps and looked at where we have gaps and seams, where we are not set up for the future battlefield. As we look at the threats in the future—and the threat drives our concepts and drives our capabilities—the threat we are seeing is not just focused on ISIL [Islamic State of Iraq and the Levant], it is not just focused on Taliban, it is focused on peer adversaries and how are we going to operate in that environment.

As we looked at that force, the desire to lighten up, as you talk about, on our amphibious force was driven by a lot of the IED [improvised explosive device] threats that we have seen on the ground in Iraq and Afghanistan. So it is easy to say that we need to lighten up. We can't look like the Army. We are not the Army. We come from the sea; we have to be a light expedition force if we are deployed. But at the same time, when we get ashore, if it is a contested environment, we are going to have to be able to slug it out and be able to operate against peer adversaries. We do that in a lot of ways as a lighter force with maneuver.

So aviation, as you talk about, brings us a lot of maneuver capability. But yet, when we maneuver and those marines go into close contact, they are going to have to be able to fight it out and, hopefully, in a maneuver warfare fashion where we are not going tank on tank against large enemy formations. That is not who we are; we are not the Army.

So we are looking at exactly what you are talking about. We have done a number of experiments and assessments of how do we lighten up. One of the things the Commandant had us do last year was to purchase 144 utility vehicles that can fit inside—MRZRs we are calling them—that fit inside the MV–22 that are expanding our range to be able to go longer distances.

While we did that, just at this advanced naval technology experiment that we just did, we were looking at how we can lighten that particular capability in an electric capability, that lightens that load to be able to go further, bringing a network-on-the-move capability.

So as we deploy the force and we start to distribute more, we have got to be able to bring the fires with them and the C2 [command and control] capability, so those distributed forces that can operate in a lighter way have those capabilities to bear.

So I think we are going after that problem, because the number of ships we have is limited. I think we are on a fairly good plan on the amphib side. As you talked about, we have got hot lines.

So, moving forward, we have got good ships, but we have got to be good partners with the Navy, that we have got to keep an expeditionary mindset that we have walked away from a little bit in Iraq and Afghanistan. So the focus is on how do we lighten up, but at the same time when we are buying smaller vehicles in a footmobile Marine Corps, how do we bring that firepower to bear as we go forward. No question about it that our aviation capability brings us a lot of that.

Expanding the connectors, we are looking at that very hard. One of the things we are looking at with Office of Naval Research that we have got a project going on right now is to increase the speed of our current amphibious combat vehicle capability. That is the number one line of effort.

The second line of effort is to look at other connectors that could help us in that way, things like sleds that we could put the amphibious combat vehicles on, move them ashore from further distances and faster, along with different connectors that can help us along those lines, such as joint high-speed vessel, those kind of different connector capabilities where we can bring more and faster.

And the third line of effort that we have looked at is looking at that problem and how do we get ship to shore in a different way. With the technologies that are out there, and just this last experiment that Ms. Stiller mentioned out of Camp Pendleton.

We had more than 50 different dynamic capabilities that we experimented with that came from across industry and across the naval warfare centers that brought in new capabilities that are going to allow us to be able to sense the battle space, see where the enemy is, where it is not, be able to deceive the enemy, understand that battle space a lot better, and be able to maneuver more quickly ashore.

So I think we are getting after this problem pretty hard and I think, if anything, we probably owe some more discussion to this in detail with you in follow-on discussions.

Mr. WITTMAN. Very good. Thank you, Lieutenant General Walsh. We now go to Mr. Courtney.

Mr. COURTNEY. Thank you, Mr. Chairman. Ms. Stiller, thank you for noting in your testimony that the budget calls for sort of filling in that 2021 dip in the *Virginia*-class production and making sure that the Block V will be at least two a year.

You know, even since January, again, we have had combatant commanders testifying before Armed Services, such as Admiral Harris, again, raising the flag about the need for, you know, addressing the dip, the larger dip in submarine fleet in the 2020s. And Secretary Stackley, in terms of his Accelerated Fleet Plan, had actually suggested a build rate of three subs a year in 2022 and 2023, which are, again, part of that Block V timespan.

So I guess the question I would ask you is, would you consider, you know, the 10 subs outlined in the Block V to be a starting point in your talks about the next contract, and would your proposal for additional submarines to be added beyond the 2-a-year rate should the capacity in industry and budget resources become available; and is there anything we can to in our subcommittee in terms of authorities to enable that?

Ms. STILLER. Yes, sir. In the past, we have had the ability in a multiyear contract to also ask for option pricing for additional ships that may not get the full benefit of a multiyear, but obviously benefit from having the multiyear pricing.

So we can add that flexibility if we see as we build our fiscal year 2019 budget that additional submarines are going to be added in the later years. As you noted, the fiscal year 2022 and 2023 are the years we are not building a *Columbia.* So those are years that when we looked at the future fleet plan we identified as that would be an opportunity to get to the three a year.

We also need to make sure that we are working closely with industry, both Electric Boat and Huntington Ingalls, to make sure that we understand all of the facilities and manpower required to get to that.

But yes, sir, we have the tools in our toolkit to add option pricing on multiyears, which, as we can see, as I pointed out, that one's a fiscal year 2019 to 2023, so we do have a little bit of time as the budget starts to crystallize and we see where we are going to be from a top-line perspective and whether we can get there.

And if it looks like we are going to be able to and it makes sense, we can have a dialogue with the committee to increase the number in the multiyear as well. That is an option.

Mr. COURTNEY. Thank you. You also talked about the use of continuous production authority on missile tube components for the *Columbia* class, and also some funding for advanced construction funds on the first submarine, which, again, were authorities that this subcommittee created in the National Sea-Based Deterrence Fund. Again, there are a couple other authorities that we had, you know, inserted into that portion of the law.

And last year was the first year, as you know, that money started flowing through the fund. So it is not just an accounting device. I mean, it is actually a functioning program now.

And I was just sort of wondering whether, again, you could sort of elaborate in terms of the Department's intentions in terms of utilizing those authorities we gave?

Ms. STILLER. We absolutely intend to utilize the continuous production of missile tube authority as well as the advanced construction. And we continue to look at what other authorities we might need, and we would come back to the committee if we feel like we need additional authorities.

This year we don't see that, but we have put into place—as you know, we have been looking across the submarine programs, both *Virginia* and *Columbia,* to see were there synergies there. We have expanded that now to also include looking at the aircraft carriers.

So we are looking at our nuclear force to see are there opportunities. We haven't completed all that work yet, and so we may be coming back in a subsequent year, seeing that we might find other authorities that would also cross into the aircraft carrier as well. Hopefully—well, presumably. I am not going to come back without a business case that is compelling that would drive cost down across the platforms.

Mr. COURTNEY. Right. Like shopping at Costco.

Ms. STILLER. Yes, sir.

Mr. COURTNEY. One last question, which is in your testimony, you stated that the Navy is supporting the Coast Guard's efforts to responsibly and affordably recapitalize the heavy polar icebreaker fleet and that the Coast Guard expects delivery of the first icebreaker as early as 2023.

The President actually was in my district just last week at the Coast Guard Academy and threw his support behind the recapitalization of the icebreaker fleet. I don't, however, see any funding in the Navy's budget for this effort, and the Coast Guard budget seems to allocate only $19 million for the program, which it is my understanding is far lower than the levels needed to continue towards advanced procurement and long lead efforts on the first icebreaker.

Can you elaborate on how the Navy is working with the Coast Guard to move this program forward, and what can we do in our 2018 bill to support the icebreaker program?

Ms. STILLER. Yes, sir. We have signed two memorandum of agreements, one with the Coast Guard and the Navy and one at the Navy/Department of Homeland Security level. We have put together an integrated team, integrated program team to run the program with the Coast Guard. We sit on their review boards as the design is going through.

And as they have been finalizing requirements and having that debate on cost versus requirements, we are right there at the table trying to provide good suggestions, what we have learned lessons in the past. So it has been an excellent exchange. We have Navy folks that are on the team permanently. And then I sit on an oversight board with the Vice Commandant of the Coast Guard. So it is a very good working relationship.

As for funding, funding is not included in the Navy's budget, because it is the Coast Guard's mission, by law, to provide icebreaking capability. There is money in their budget, I am not exactly sure of the amount, but that is to continue these studies that are ongoing. There is $150 million that the Congress appropriated last year of shipbuilding construction Navy [SCN] money that is available; and as they get into detail design, that money can be used for detail design.

We can't use SCN money for R&D [research and development] type of activities. But the Navy doesn't intend to program for the icebreaker. As you know, we have challenges and areas where we want to grow the fleet, and it is more appropriately funded in the Coast Guard budget.

Mr. COURTNEY. Thank you. I yield back.

Mr. WITTMAN. Thank you, Mr. Courtney. We will now go to Mr. Byrne.

Mr. BYRNE. Thank you, Mr. Chairman. Ms. Stiller, thank you for being here today, and I appreciate your announcement in your opening remarks that the administration is changing its request on the LCS program from one to two. I would like to follow up on that if you don't mind.

We all read with great interest the CNO's white paper that highlights that we need to take advantage of our hot production lines, and you know as well as I do how hot the production lines are on LCS.

Earlier this month, we heard from Admiral Neagley that the optimal number for the LCS is three. Now, as far as cost and schedule efficiency, that seems to work pretty well. And we are still working towards 52 small surface combatants, including the transition to the frigate, and a 350-ship fleet. Why not continue to leverage this production capacity by going to three?

Ms. STILLER. Well, yes, sir. And the way we are looking at how we get from the LCS to the frigate while looking at the industrial base, while three is the most efficient, I am looking at it more across the fiscal year 2017 and fiscal year 2018. So if you have got three ships that were appropriated in 2017 and the two and the eight that we are talking about to be discussed, obviously, until the 2018 budget is passed, that is five to go across the two.

Within the yards right now, there are 13 ships that are in phases of construction. And we would certainly work with both shipyards to figure out what is the optimal build strategy during this time where we are trying to transition, but keep the industrial base there.

So I agree with you. We are not at their most efficient level, but we are also greater than minimum sustaining rate. And so we will work with the yards to make sure that we are mitigating impacts to the industrial base as we move forward.

Mr. BYRNE. I know I don't have to tell you this, but this is a highly trained, highly skilled workforce, and they have been working together long enough now to where they have gotten efficiencies down and costs down, which is music to our ears up here. We want to try to take advantage of that, and I know you and I have talked about this before. This is not a spigot. When we turn even part of that spigot off, all these highly trained people that can

get jobs in this economy literally all over the country, they are gone.

And trying to rebuild that technical capability at the level we are going to need to build it back to meet your 52-ship requirement is going to be difficult and I think is going to draw out your timeline, and I am pretty sure it is going to increase the expense of the ships in the future. So I know you already know that. I just want to make sure you and I have communicated about that.

I want to go to the timing for the transition to the frigate. Now, we went through this. Three years ago, we went through this study that the Navy had from the Small Surface Combatant Task Force, and they called for the transition to the frigate in 2019. Now, obviously, if we can go ahead and transition to 2019, that makes the job of trying to make sure that we have got these hot lines still hot enough and being able to do what we want to do a lot easier. Have we amended that study to change it from 2019 to 2020?

Ms. STILLER. Sir, I am going to start this, then I am going to defer to Admiral Lescher to talk to you a little bit more about the requirements.

Mr. BYRNE. Sure.

Ms. STILLER. But as we have been going through our fleet, as we are watching what is happening around the world, yes, we did have a frigate plan to start in 2019. The requirements community said no, they want to take another look at that, especially in the local air defense area.

And I will turn it over to Admiral Lescher here in a minute. And so while they are combing through their deliberations, we, again, will look at making sure that we are keeping that LCS line and the industrial base there so that we can get to the frigate in fiscal year 2020. But I will defer to Admiral Lescher on the requirements.

Mr. BYRNE. Before you do that, Admiral, you have not amended the plan itself?

Ms. STILLER. I am sorry, sir. We have moved the frigate start to fiscal year 2020 in this budget.

Mr. BYRNE. But the plan that was put forward in 2014 has not been formally amended?

Ms. STILLER. We are in the process right now of looking at—the requirements community is in the process right now of relooking at requirements, based on the threat today.

Mr. BYRNE. I am sorry, Admiral.

Admiral LESCHER. No, sir, absolutely. So, very briefly, the requirements evaluation team for the frigate is working very hard right now to take a look at the use of the frigate in distributed maritime operations, the distributed lethality concept which will be a slightly different requirement set for that ship.

So, as Allison indicated——

Mr. BYRNE. That is the missile capability?

Admiral LESCHER. It is a combination of an aviation warfare capability, increased survivability, and looking at electronic warfare.

Concurrent with that, the OTH [over-the-horizon] missile is something that is part of our cruise missile strategy as well, to bring that on. But that team is working to really present their rec-

ommendations in the building end of this month and start briefing that up to the Chief of Naval Operations and the Secretary.

Mr. BYRNE. Let me register one other concern that I have, and I know this is not something that is set in stone, but there is a figure out there for the cost cap for the frigate at $1.2 billion for a ship that we are making now for about $500 million. Now, it is going to cost more when you go up, we get that.

I am a little concerned that we are—and I know this can change. I understand you may want to talk about lowering that cap. I am a little afraid that we have got it so high that, A, we are really just building another destroyer; and B, this is something we won't be able to afford because we get it so high that we have designed a program that we are going to come in here and my colleagues are going to say, we can't do that.

Admiral LESCHER. Yes, sir, I think you are absolutely right. And CNO, in fact, testified this morning before the SAC–D [Senate Appropriations Subcommittee on Defense] similarly that that figure is too high. He believes that. So I think you are absolutely right in terms of what is really a placeholder figure in the fiscal year 2020 column right now, and that cost has to come down.

Mr. BYRNE. I want to thank both of you. I look forward to working with you. I know there is a lot of work left for you to do, and we want to be working with you as you go through this, but I certainly appreciate your opening statement and the addition of another LCS.

And I yield back.

Mr. WITTMAN. Thank you, Mr. Byrne. We are going to now go to Mrs. Davis.

Mrs. DAVIS. Thank you, Mr. Chairman, and thank you to all for being here today.

As you know, the budget submission contained no fiscal year 2018 funding for the Expeditionary Sea Base, ESB, Program, despite the fact that the Navy identified that requirement to double the force from three to six ships.

So could you help us understand a little bit better about what was driving that, the budget or a change in strategy?

Admiral LESCHER. I will take a stab at that, ma'am. So you are absolutely right in terms of the 2016 Force Structure Assessment called for the increased requirement that you highlighted. What you see in terms of the fiscal year 2018 budget and the eight ships that are in there is entirely consistent with the broader direction that the entire Department of Defense has been directed to execute, which is for fiscal year 2017 really getting after those critical readiness efforts; fiscal year 2018, building on the readiness and addressing pressing shortfalls; and then fiscal year 2019 is the grow capacity, grow to a larger, more capable, more lethal Navy.

And so that is essentially the construct, SECDEF Mattis' three-phase campaign plan to get at the broader capacity, the greater capacity that you outlined.

Mrs. DAVIS. There are some current overriding concerns about that, though. And I am just wondering about the budget in general and what was presented and what your greatest concerns are. Where does this one go, I guess, along with some other ones?

Admiral LESCHER. Ma'am, again, that is a great question. I think we have to work collectively with the committee and the Navy and broadly to articulate the case, to make the case for the higher defense caps that are going to enable that vision. To grow to the larger, more capable, more lethal Navy clearly is not executable at the PB 2018 funding levels, at the fiscal year 2018 funding levels. So collectively working to get those defense caps raised is fundamental to getting there.

Mrs. DAVIS. Anybody else want to comment on that? Would you like to comment, Deputy Stiller?

Ms. STILLER. I agree with Admiral Lescher. I mean, as he said, the fiscal year 2018 budget was really looking at getting our current fleet whole. And as we go into fiscal year 2019 budget, we are going to be looking at growing the force. But we are going to be faced with—we are going to need to understand how we are going to do that, and looking forward to the defense caps to be raised.

Mrs. DAVIS. Thank you.

General WALSH. I guess just to add, Congresswoman, as we get that ship out there, I think right now, I think a lot of us are looking at, we had the MLP [mobile landing platform], the ESB out there—or the ESD [expeditionary transport dock].

Once we start to see the ESB get out there, I think we will start getting our hands on that ship and start to see what we are going to be able to use it for as an afloat staging base and how we may use it different.

I know the Commandant is very interested in getting the next one into the Mediterranean. And so once I think we start using it out in the fleet in the operating forces, we will start getting much more comfortable in how we are going to be able to operate with that ship.

Admiral LESCHER. If I could add onto that very briefly, before coming to the Pentagon this time, I was a 5th Fleet Expeditionary Strike Group commander. And the USS *Ponce,* the interim afloat forward staging base, was one of my ships. And what the ESB and the afloat forward staging base brings to that theatre more broadly is really critical. I mean, those will be very important ships, as reflected in the Force Structure Assessment you saw that grew the requirement in recognition of what they bring to the fight.

Mrs. DAVIS. Okay, thank you very much.

If I could just speak a little bit about the unmanned vessels and what you are predicting, what kind of requirements should we be looking at, and do you plan to incorporate them into the fleet architecture?

Admiral LESCHER. I will take a stab at starting with that. You know, across the unmanned activity, more broadly, air and vessels, but specifically to the vessels, absolutely. This is something that you will hear our leadership, the Secretary of the Navy and the CNO speak very urgently about, about the need to bring this capability in.

So particularly in the unmanned underwater vehicles, you are familiar, there is a family from small to extra large that are executing a set of missions that are key to enabling the power of our submarines more broadly.

So we feel a real sense of urgency to get after that. And we could talk perhaps about some of the missions in a closed forum that are particularly compelling. But we feel a sense to both enable and increase the projection, the power projection, of the manned systems. We need to learn about the integration of manned and unmanned. We feel a sense of urgency to get after that.

And I would say more broadly on the aviation side, when we talk about MQ–25, it also has a compelling reason to arrest the fatigue life consumption of our Hornets doing that mission. So broadly across all of those unmanned type systems.

And to your specific questions, in terms of the future fleet architecture and CONOPS [concept of operations], absolutely. It will be leveraging unmanned and artificial intelligence.

Mrs. DAVIS. Thank you. Thank you, Mr. Chairman.

Mr. WITTMAN. Thank you, Mrs. Davis.

We will now go to Mr. Gallagher.

Mr. GALLAGHER. Thank you, Mr. Chairman, and thank you for your opening statement. If there is a better argument for the need to move aggressively to 355 ships, I have yet to hear it. And I really appreciate you articulating it.

I also appreciate, Ms. Stiller, your announcement that you support two LCSs this year. I think that is a move in the right direction. I remain concerned, however, I echo Mr. Byrne's concerns that two ships will have devastating impacts on the shipyards. We went back and forth with the Navy on this a couple weeks ago, and they seemed to suggest that three was the minimum required to maintain a hot production line.

And so just so I have it clear, you are not disagreeing with the Navy's assessment that three is the minimum?

Ms. STILLER. Three is the most efficient to execute within the yards. There is a minimum sustaining rate, which I believe we are well above, but we are somewhere between minimum sustaining and most efficient.

Mr. GALLAGHER. You talked about——

Ms. STILLER. Five across the 2 years. I am sorry.

Mr. GALLAGHER. No, thank you. You talked about mitigating the impact if you went from three to two. What would that be, what sort of mitigation?

Ms. STILLER. What we need to look at across both yards is how are they executing, where are they on their delivery schedules, and how do we more efficiently smooth production. So, for example, if it is helpful for them for a delivery date that we have on a current contract to extend that so that they can more succinctly level-load the workforce in the yard, we are more than happy to have those discussions.

Mr. GALLAGHER. I mean, both yards, as you know, have been optimized for two ships on a 6-month production rate. So I worry when we get into mitigation in production rates that really what we are admitting is that—I mean, if 2 of our yards, 2 of the 7 are having difficulties, I don't see any way we can get to 355 ships and thereby satisfy the Commander-in-Chief's intent.

And kind of in line with what the chairman laid out, echoing the CNO's white paper on the need to get there in 10 years, not 20 years or 30 years, does the Navy have a plan as part of the ongoing

review? I know we are talking in 30-year terms, but is anyone thinking about how we get there in 8 years or 10 years?

Ms. STILLER. As was referenced earlier, Mr. Stackley signed out the Accelerated Fleet Plan, which, as he talked about it, it helps to set the framework for strategic guidance. We expect that to be part of the discussion as SECDEF goes through the strategic review and we get through this summer to figure out where we are headed. But where you are going to see growth in the force, as Admiral Lescher mentioned, is starting in fiscal year 2019.

Admiral LESCHER. If I may, sir, add to that.

The Navy is looking very comprehensively, to your point, about how you can really accelerate growing to a larger force. So clearly, the initial step is the investments in this budget to improve readiness. To get the ships we have out is one element to that; looking at service life extensions as well where that makes sense across either DDGs or SSNs [attack submarines]; also commissioned a study to look at whether recommissioning would make sense; and then also, of course, looking at new build.

So that is part of an ongoing comprehensive assessment that would be really rolled out as part of the next year's budget about how you get after this in the most aggressive way.

Mr. GALLAGHER. So when is the soonest we and the American people could see a Navy plan for getting to 355 in the 2020s, as the CNO says we must? To include what mix of ships go to what shipyards and just how we do it?

Admiral LESCHER. Well again, sir, that is a great question. One, of course, key element of such a strategy would be how fiscally informed it was. So it starts with the ability to execute that. To make that plan come alive obviously starts with the defense caps as well.

So I do think that that is part of this ongoing discussion that will come this summer, this fall, and certainly be part of the fiscal year 2019 rollout.

Mr. GALLAGHER. I just would hope that we talk about strategically what is necessary before we get into fiscally what we need to achieve, what we know we must, right?

And so if we have that clear signal coming from the Pentagon or the Navy, it makes it easier for us here to make the argument to our colleagues that we need to fully fund what you are asking for. Three [hundred] fifty-five, as I remember, is the minimum you guys are saying you need to satisfy an ongoing requirement. So the sooner we can get there, the better.

I just would submit if you look at how the Reagan administration got there, they were able to do both at the same time. I appreciate the crucial investments in readiness, but the fact that we are actually taking a backwards step when it comes to shipbuilding is incredibly troubling.

And so I just would ask that you work with us on how we do this in a more expeditious fashion, and I hope we get to see that plan. And as the CNO said, we can do. We believe the defense industrial base could produce 14 more small surface combatants in the near term and a total of 29 more ships over the next 7 years than under current plans.

Mr. Chairman, I yield.

Mr. WITTMAN. Thank you, Mr. Gallagher.

We will now go to Ms. Bordallo.

Ms. BORDALLO. Thank you very much, Mr. Chairman. And I thank our witnesses for being here today.

While I share some of the concerns that my colleagues are voicing about resource allocation in the fiscal year 2018 Navy budget proposal, I am pleased to see an effort to rebuild the readiness.

And I will first note that I was pleased that the request included three MQ–4C Triton systems, which provide a critical maritime ISR [intelligence, surveillance, and reconnaissance] capability at a crucial time in the Indo-Asia-Pacific region, where I understand an early operational deployment to Guam is scheduled for 2018. Admiral Lescher, could you tell us how things are going on the program and whether the deployment is currently on track?

Admiral LESCHER. So, ma'am, I will have to get back to you on that specific deployment, but I will tell you the program is to a point where it is going to be able to execute it looks like the acquisition profile that you highlighted of three this year and three going forward.

So we are very much looking to bring the MULTI-INT [multi-intelligence] capability of that aircraft online, forecast for an IOC [initial operational capability] 2021 timeframe as well.

So anything else you would add, Allison?

Ms. BORDALLO. Can I ask you to get back to us when you do have some plans about the deployment?

[The information referred to is classified and retained in subcommittee files.]

Ms. BORDALLO. Okay. And shifting subjects, Assistant Secretary Stiller, it is nice to see you again. And could you just go through how you see that this budget request adequately addresses the current threats that hold our forces at risk. Are we investing appropriately in long-range standoff weapons?

Ms. STILLER. Ma'am, I will start off and then I will turn to Admiral Lescher as well. But we do have a strategy for our weapons across the board. And we are investing in each of the areas, and we look at it in the near term, the mid term, and the far term. We have been very careful to make sure that we are putting a balance across investing today, investing in the near term, and also investing in the long term, to understand exactly where we need to go.

I don't know if you want to add to that.

Ms. BORDALLO. Admiral.

Admiral LESCHER. Just a little bit more detail. So, as Allison said, in the near term we are really focused on providing options to the commander, in terms of how these weapons are launched, these long-term weapons, and also their target set. So, for example, the Tomahawk, with the request for 100 in this budget, which is an increase from the prior budget, obviously, that is ship-/sub-launched for a land attack mission.

The LRASM [Long Range Anti-Ship Missile], also forecast with an early operational capability on the B–1 in fiscal year 2018, and an F–18 in fiscal year 2019. So that is an air-launched weapon, providing the commander options to go after the maritime target set. SM–6, maritime target for cruiser/destroyer-type ships. So those would kind of be the set for the near term 2020.

As we move into the 2020 to 2025 range timeframe, the Tomahawks, as you know, will be coming in for recertification starting in fiscal year 2019. As part of that recert, to build some of them as maritime strike Tomahawk variants. So from ships and submarines to be able to strike both land and maritime targets will be an important flexibility for the commander.

In the 2020 to 2025 timeframe as well, we are investing in an advanced Harpoon for an aviation launch to go after the maritime target. And then the OTH missile we talked about earlier, as part of the distributed lethality, to look for that to come aboard LCS and frigates.

So a little bit of an outline.

Ms. BORDALLO. Thank you. Thank you. One quick question also for you, Secretary Stiller. Are you coming up with any kind of final plans—I have asked this before at hearings—about putting together a dry dock? We now have the appropriations available in the western Asia-Pacific area. Do you have any plans? I understand it is in a planning stage, but where are we?

Ms. STILLER. So, ma'am, I would certainly like to come and sit down with your team and talk about what is the best use of the $9.5 million that you refer to for depot-level capability. But, as you know, the Vice Chief of Naval Operations, Secretary Stackley, and Secretary McGinn asked us to do a business case analysis on having dry-dock capability in Guam as well as a warfighting analysis.

Ms. BORDALLO. Or any of the other——

Ms. STILLER. Right. And as they came through—and we have done both of those. And our warfighting assessment tells us that in peacetime and in wartime, the repair timeline would be too long for that to be of value. But we went ahead and looked at the business case too.

And the business case, because of the throughput in the dock, it just doesn't make fiscal sense. So I want to figure out the best way that we can leverage those dollars. And we are in the early stages of coming up with ideas, but it would be worth sitting down with your team to figure out.

Ms. BORDALLO. Well, I am concerned because of threats. You know, we certainly have been threatened in our area. And in this case, I certainly think it would be important to come up with some kind of a plan. Thank you.

And I yield back.

Mr. WITTMAN. Thank you, Ms. Bordallo.

We will now go to Mr. Hunter.

Mr. HUNTER. Thank you, Mr. Chairman.

Secretary Stiller, you were in my office with Secretary Stackley and we created the integrated program office, right, for the icebreakers. We now give the Coast Guard—as of my Coast Guard bill today, we give them total block-buy authority for all their major acquisitions. They can lead materials. Trying to put them on par with the Navy.

So I guess Mr. Courtney already talked icebreakers. I guess the one specific question I have is, do you think it is even possible to build three to six heavy icebreakers in the next decade without doing block buy? The Navy does block buy on lead ships. And,

again, the icebreaker, there is ice, the icebreaker hits it, goes down on it, backs up, hits it, goes down on it, backs up. I mean, it really is not rocket science, but the Coast Guard will make it seem as such if the Navy allows them to.

Ms. STILLER. Sir, I would tell you that block-buy authority has certainly helped us in certain acquisitions. We haven't always gone to it on a lead ship, but certainly on follow ships. You just have to weigh the risk, to your point.

So as they come through the requirements, I think as we can look at the risk, we can make a really good assessment whether block buy makes sense. But certainly, when you are buying a limited quantity like you are talking about, whether it is three, even six—if it is six, perhaps you would start the block buy from two to six. But if you are talking about three, you just have to look at the risk.

But absolutely, block buy helps with the vendor base, the commitment to the shipyard, all the way around. It is a very helpful tool. And it would be very useful for them, I am sure, to be able to most efficiently——

Mr. HUNTER. Which you are telling them, I would presume.

Ms. STILLER. Oh, yes. At this stage of the game, what we are doing with the Coast Guard is really looking more at the requirements and the tradeoffs to get the specifications right, working with industry to get their good ideas as we go in and build a contract design type package so that it can go out for bid. And then as we get closer to how are we going to go contract for it, we will certainly have those discussions.

Mr. HUNTER. How do you see at this point the Coast Guard getting the $1 billion to do that without using Navy money?

Ms. STILLER. Sir, I defer to the Department of Homeland Security and the Coast Guard on that. Like I said, we signed an MOA [memorandum of agreement] at the DHS [Department of Homeland Security] level just last week, and, really, that squares away how we would go about contracting, depending on the color of money. But they understand that that is not coming from the Navy budget, that it is coming—that they are going to have to address it.

Mr. HUNTER. The last question is—what is nice about coming in late is everybody asks your questions before you do, so I don't have to say anything. But Mrs. Davis, from San Diego, asked about the ESBs. But here is my question in general, one thing I don't understand.

If you have got hot production, right, and you stop it, you guys, you and Secretary Stackley have obviously looked at the cost incurred on stopping a hot line. I don't understand how we are going to take a timeout for fiscal year 2018, do all maintenance and repair, add no new ships, and even stop the ones that we requested in the last 6 months? For instance, like the ESB, I don't understand how that plays out across the shipyards in the country.

When you stop a hot line then you say, okay, you got to fire all the welders, all the pipefitters, all the guys bending steel, and then

we are going to rehire them back in 12 months. Just explain to me how that works. I don't get it.

Ms. STILLER. Well, sir, in the case of NASSCO, who is the builder of the ESB, they also have—they have work in the yard that is Navy and commercial work. So, as you know, we ran a limited competition for the LHA–8, and up to six—or including six oilers. And we ran a competition of similar ships.

Mr. HUNTER. The TAO.

Ms. STILLER. The TAO. And NASSCO has run the TAO. So they have steady production in the yard for the oiler. They also have commercial work. The ESB–5, was a fiscal year 2016 appropriated ship and authorized—and thank you for that help—but they have not yet started construction on that ship.

So we really have to look at what does the workload look like in a yard? It is a little different because they are more of a multi-product yard. So they have a workforce that has a base of work. And so we would have to look at the best timing if we were to go ahead and buy additional ESBs that are called out in the FSA.

Mr. HUNTER. I am out of time in 20 seconds. Tell me nonparochially, across the whole country, when you look at shipyards and you are stopping a lot of these builds with no new starts going for 1 year, what does that do nationally to some of these yards that aren't NASSCO?

Ms. STILLER. Sir, we do not like to go to zero and then restart. That is not where we want to be. And that is why we look at can we make sure that we are paying attention to the industrial base.

Mr. Courtney would be able to tell you that in submarines we had a hiatus of 6 years between submarine builds. That was very difficult at the end of the *Seawolf* program to ramping back up into the *Virginia* class.

So we are very aware of the devastating impacts that can happen if you go down, if you go to zero in a yard or near zero. So we look very carefully with the yards. We have dialogue with the yards to make sure that we are not doing that type of harm.

We have gotten the minimum sustaining rates in a number of yards and on a number of aircraft and weapons programs, and that is difficult, because you end up paying more for what you have to go buy to equip the warfighter.

Mr. HUNTER. Thank you very much. Thank you, Mr. Chairman.

Mr. WITTMAN. Thank you, Mr. Hunter.

We will now go to Ms. Hanabusa.

Ms. HANABUSA. Thank you, Mr. Chairman. Ms. Stiller, I understand and I got to see the benefits of the block program. And I think we will all agree that the, I guess, one product that is built that is on budget and sometimes comes in under budget is like the *Virginia* class. And the *Virginia* class, it is the method by which it is built, but in addition to that it is where we did the block program.

Having said that, however, Admiral Richardson's white paper says: The Navy must get to work now to both build more ships and to think forward, innovate as we go. To remain competitive, we must start today and we must improve faster.

A great philosophy. But my question is, how do you determine what, in other words, and where? So all of this is premised on the

threat, and his paper focuses on Russia and China. Understood. But in his paper, he also says China was a land issue and then decided in 2015 or something along those lines that all of a sudden they said, well, you know what, we got to be a maritime force.

And they can switch immediately and do whatever they are going to do, which I assume that if we are reacting to that threat that we are going to have to reposition ourselves to whatever they decide that they need to do to be a maritime force. So how do we make that decision?

Our problem is we really set our policies by acquisition. What we do is we say, okay, let's go to *Virginia*-class subs, and if we do a block program it is 10. At some point, it may not be the answer, though. Of course, I will never admit that or I will never believe that. But say something like that happens. How do we anticipate that?

When I was in Congress before, LCSs all of a sudden became the bad thing. We weren't going to build LCSs. I come back to Congress and we are building LCSs again. Yes, there are some modifications. We may call it a frigate, we may do whatever, but we are building it again. So how do we plan for that effectively and efficiently and within the costs that we have to always look at to contain and to manage?

Ms. STILLER. So, ma'am, I would say on most of our programs, most of our weapons, our platforms, our shipbuilding platforms, they are very adaptable. And so over time we have been able to pace the threat.

And I will give you an example. I will use DDG–51 and then I will use *Virginia.* So on the DDG–51 program, we have got 54 ships delivered into the Navy.

Ms. HANABUSA. We were supposed to stop DDG–51.

Ms. STILLER. We did stop. We did stop. There is an example of where we shut the line down and then restarted it, and we are in the restart now. But we also are introducing our Air and Missile Defense Radar to that ship; in fact, I mentioned that we have a handshake today with Ingalls to introduce that on their fiscal year 2017 ship.

So going forward in the 2018 multiyear, we are going to introduce that capability, which will give us much more enhanced BMD [ballistic missile defense] capability on those ships.

So we have also done that on *Virginia* class. As we have seen the threat evolve, we have been able to pace the threat, whether it be in the combat systems or *Virginia* payload module, for example. So we build platforms that are very adaptable. And so what we need to do a better job of with CNO, where I think CNO is going too, is the ability to inject those changes more rapidly, get the capability developed and be able to get it out there quicker.

He and I have co-chaired a couple of accelerated acquisition boards. We have designated two programs to be maritime accelerated capability offices, MQ–25 and our LDUUV [Large Displacement Unmanned Underwater Vehicle], and we also have an RPED [rapid prototyping, experimentation, and demonstration] project for surface Navy laser weapon program. So he and I are looking at how do you tailor and make sure that you can get programs off and running to a good start.

And we also have the ability to prototype, to go test capability, fail in some cases, I am sure, but in other cases, we will be able to be successful and be able to get stuff to the fleet faster.

Admiral, I don't know if you wanted to add.

Admiral LESCHER. Ma'am, I would just add, the theme that Secretary Stiller has been talking about of increased agility, and to your point, to be able to not just be reactive, but to be proactive in the way we acquire things, is a key theme that you will hear continually from CNO and the Secretary. The sense of urgency to be able to just be more agile and developing and fielding fleet. This framework of focusing on not just platforms, but the payloads and the sensors, and really it is the netted integrated things that we are investing in that we see as the real—really the game changers for the tactical capability we field.

Ms. HANABUSA. And I am running out of time, but what I would like to have you respond to is in terms of our laws and in terms of the way procurement works, what is it that you need, if anything, for that flexibility so that you can change what is there?

And if you could—I am out of time, but if you could give it to me back on the record, because it seems like that is what is missing. In order for us to do it, you have got to be able to be flexible.

Ms. STILLER. Yes.

Ms. HANABUSA. And is our structure sufficient in terms of that flexibility.

Ms. STILLER. Yes, ma'am. And I would be happy to give you that. One of the first starts was the 2016 NDAA, which pushes stuff to the services, so——

Ms. HANABUSA. Thank you.

Mr. WITTMAN. Ms. Hanabusa, if you would like, we can have the question answered now if you would like.

Ms. HANABUSA. Oh. Is that—oh. Thank you.

Mr. WITTMAN. Yes.

Ms. HANABUSA. Could you please answer?

Ms. STILLER. I will, but I can also get you additional—we have been working very, very closely with the committee on acquisition reform initiatives that would help us to streamline.

Giving us accelerated acquisition authority has been very helpful so we can go and tailor programs, again, like I mentioned CNO and I are trying to do, and we want that to become the norm.

The fiscal year 2016 National Defense—NDAA pushed oversight to the services, and that has been—that is very helpful as well for programs that are not joint programs, so to give services a little more flexibility.

We have particular legislative proposals that I can get you a listing of things that will help us, but we have been working very closely with the committee, and I think we have a lot of good tools in our toolkit. We just have to give them some run time now, because we have recently gotten them.

I don't know if you had any——

General WALSH. If I could jump in on that, Allison. One thing I think is the law is really helping us out. It is pushing things down much more to the service chiefs, but within our large bureaucracy that we have got within DOD [Department of Defense] to work

through that, now how does that big bureaucracy adjust to the flexibility that you are giving us?

Ms. HANABUSA. That is exactly the problem.

General WALSH. So as we are getting into the details of that, one of the big things that is challenging us is, so where does the money come from? Typically in the past where we have taken money is out of existing programs, and squeezed those program lines, the R&D out of those programs, to try new ideas, new and innovative things to kind of move faster.

So as we now start to take in our programming process and align money to that, that is not what we have been used to in the normal DOD way of acquisition. So by moving money into that area, do I move a little in? Do I try? Is somebody going to take it from me if I move it in there?

You know, up the chain of command, is somebody over on the appropriator side going to take the money if I move it in there to try.

So I think the key thing that we are starting to see is be very specific in the area that we are trying to do innovative ideas, and then work very closely with our chain of command all the way up to DOD and then over here in Congress, so when we say, hey, we are going to put money in here against this capability area, it might be mine warfare, it might be ship-to-shore maneuver, and we put money in there to do some rapid prototyping to see where we get, that that money doesn't disappear as we put it in there before it gets appropriated.

Ms. HANABUSA. Thank you. Thank you, Mr. Chair.

Mr. WITTMAN. Thank you, Ms. Hanabusa. We will now go to Mr. Garamendi.

Mr. GARAMENDI. I want to follow up on what Ms. Hanabusa was working on, but start in a slightly different place.

We have heard discussion after discussion about a 355-ship Navy, and it almost seems to me that that number is driving decisions. And the LCS is where I want to go with this.

Ms. Hanabusa said it started, it stopped, it started up again. And the information that we have currently available is that it doesn't work for what it was designed for or developed for, but yet we are going to continue to build them. And since it doesn't work, we are going to go build a frigate. And now we don't know what the frigate is going to be used for.

We had a discussion, Admiral, a moment ago, it is going to be electronic warfare or maybe missiles or maybe whatever. And I am trying to figure out, what are we doing here? Are we simply trying to build ships to meet a target number or are we trying to build ships—or are we building ships for specific purposes?

The discussion a moment ago about flexibility, I assume that was flexibility that the ship might be used for this or that and different elements added to it. Presumably that is what the LCS was supposed to do, but it doesn't seem to do that, because it can easily be sunk, and doesn't work close to shore because it can easily be sunk.

I don't get it. I really don't understand. I understand why we want to keep the shipyards busy. A very cogent argument, Ms. Stiller, that you put together on that account, as did Mr. Byrne, who—and Mr. Gallagher. I guess it is the appropriate time for me

to raise the issue, since they are both gone. But I don't get it. I don't understand here what it is. And we are talking about, you know, half a billion dollars a copy or more.

So help me. Help me. What is it that we are trying to accomplish here with these particular ships?

Admiral LESCHER. So I will start by observing that the fleet has a very high demand for these ships, which is so—it is contrary to the notion that they are not working. They are—in fact, Admiral Rowden, the surface forces commander, said, "Hey, I need these ships out here and I need more of them."

In terms of the specific missions in particular that the littoral combat ship will be executing, one of the key ones is mine countermeasures. So our current mine countermeasure ships, the MCM–1 *Avengers,* are running out of service life, and they will be retired in the late 2019s, early 2020s, and so that mission will be executed by LCS. It also has surface warfare and ASW [antisubmarine] warfare mission packages as well that it will execute.

I would say one of the more compelling ways to think about LCS——

Mr. GARAMENDI. Excuse me for a moment for interrupting.

Admiral LESCHER. Yes, sir.

Mr. GARAMENDI. The director of operational testing and evaluation says that the mine countermeasure and the antisurface warfare mission packages has not demonstrated—don't work, has not demonstrated effective capability.

Admiral LESCHER. Right. And so there is——

Mr. GARAMENDI. So what—could you just tell me?

Admiral LESCHER. They are in development——

Mr. GARAMENDI. Are you telling me they do or they don't?

Admiral LESCHER. Well, like any sophisticated technology, and what is compelling about this technology as well is it takes the man out of the minefield, right? So we are talking unmanned technology with a forecast initial capability of that MCM mission package of 2021. So there is absolutely work to be done to mature that, to get that functional.

Mr. GARAMENDI. But these things are not survivable in the area for which they were intended to operate.

Admiral LESCHER. Well, so as the commander who is going to use them will take a look at—he will design his operation and design his campaign so they are survivable, right?

Mr. GARAMENDI. In other words, not putting them where they were intended to operate.

Admiral LESCHER. Well, I think they will operate as intended, but what they also do is if—absent these ships, we would be putting, you know, a $1.5 billion DDGs to do some of these missions that are not suitable for those ships.

So these ships are designed specifically to replace the MCM ships, to replace the PC [patrol coastal] ships, to do that mission in an environment in which—in which they were designed to do.

Mr. GARAMENDI. But not survivable. I——

Ms. STILLER. Sir——

Mr. GARAMENDI. Is that the case? Am I——

Ms. STILLER. Sir, there are——

Mr. GARAMENDI. We hear—I hear over and over——

Ms. STILLER. There are different components to survivability, and that when the requirements for these ships were laid out, they are incredibly fast, so they can get in and out of an area, and that will——

Mr. GARAMENDI. They don't go very far.

Ms. STILLER. Well, sir, they can go far. I mean, there is—there is the iron triangle of—but I understand what you are saying, but they were designed to a certain level of survivability.

That has been enhanced over the time in the program. And, again, these ships were designed to be—have mission modules that would switch in and switch out, as Admiral Lescher was describing, and so they really are single mission ships. And as Secretary of Defense Hagel and Secretary of Defense Carter and Secretary of Defense Mattis have said, we want to get to a frigate that is a multimission that will have the SUW [surface warfare] and the ASW capability inherent in the ship.

So there is absolutely a mission for these ships. As Admiral Lescher said, for the LCSs, they are in demand today and they are in construction today. And there is a demand for the frigate going forward, with a total inventory of 52. And so we are trying to figure out what the right balance between the LCS and the frigate should be.

Mr. GARAMENDI. And you are not yet complete with that analysis?

Ms. STILLER. Well, as we were intending to go to the frigate in 2019, we would have had a total of 28 LCSs. In order for the industrial base, there will be additional ones, they will be employed. We are looking at backfitting capability that we are intending for the frigate onto existing LCS and be able to do that in forward fit as well.

Mr. GARAMENDI. I have many more questions. I am out of time.

Mr. WITTMAN. Thank you, Mr. Garamendi.

Vice Admiral Lescher, just as a follow-up, in the shock trial testing for LCS, give us a perspective there about its survivability based on its testing standards?

Admiral LESCHER. Sir, I think I will ask Secretary Stiller to speak to this as well, but it performed well, is the bottom line there.

So do you have any more——

Ms. STILLER. Yes, sir. Both variants went through shock trials this past year, and they both performed very well. And DOT&E [Director, Operational Test and Evaluation] was part of that analysis, so they were with us on the ship. They were tested to the survivability levels that they were designed to, and they passed.

Mr. WITTMAN. Okay. Very good. Thank you. Thank you.

Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman. I want to thank our witnesses for appearing today.

So when it comes to transitioning technology, I believe that we have to be prepared in advance to facilitate smooth transition from the lab into the joint battle space. We can't let the perfect be the enemy of the good. So in that line of thinking, we can't let our desire to get to 100 percent deter us from fielding a 95 percent solu-

tion. And if we delay funding transition pieces, then we risk technologies falling into the "valley of death."

And I understand that the Navy has decided not to fund the transition railgun this fiscal year despite multi-shot with inspection tests having recently occurred and a true multi-shot test likely to take place soon.

So I want to know, what is the potential impact to railgun development without this transition money?

Admiral LESCHER. Sir, so the status of railgun is there is continued S&T [science and technology] funding, as I think you just highlighted, in this budget forward, and that really just reflects the technology maturity of it right now.

So going to the $6.4 [million] funding that you were talking about for demonstration and validation and then operationally realistic environment, our assessment is that technology is just not ready for that stage yet. So we are continuing to fund it, looking for the repeated—you know, ten rounds per minute type capability out of that weapon and the barrel life as well, continuing to fund that to keep the overall momentum going.

We are also refocusing fundings into the hypervelocity projectile and accelerating that for use in the 5-inch powder guns so that we can integrate it with the combat systems. So in that specific program, the current profile simply reflects its execution and the maturity of that technology right now as we continue to try and develop it and take it forward.

Mr. LANGEVIN. So at what point in its development would the Navy find railgun viable in order to consider transition?

Ms. STILLER. Sir, I think, as you mentioned, we have a multi-shot event coming up later this summer. That will help us to look at it and see where we want to go as part of the 2019 budget, but that gives us additional information that helps us to retire some of the risk.

Admiral LESCHER. Yeah. I think for fiscal year 2019 is when we are forecasting a full-scale prototype demonstration.

Mr. LANGEVIN. Okay. And as we look forward, what platforms does the Navy see as viable for railgun?

Admiral LESCHER. So I am not sure that analysis has been done yet or has been settled yet. I will take that for the record, sir, and get back with you.

[The information referred to can be found in the Appendix on page 97.]

Mr. LANGEVIN. All right. I would appreciate it. I just don't want us to, you know, let the perfect be the enemy of the good.

And I commend the Navy for being very forward leaning on things like directed energy. I know we have got a test weapon on the USS *Ponce,* it is a 30-kilowatt system, and, again, not perfect, it is not what we want it to be in terms of a 150-kilowatt system, but we are learning as we are going, and it is effective against some targets like drones and things like that, so we are learning a lot.

So, again, I commend the Navy for being forward leaning on directed energy; I just don't want to see us fall behind and lose the opportunity to get railgun out there as well if we are waiting for perfect.

Ms. Stiller, our shipyards, and particularly those working on our submarine fleet, depend on timely distribution of funds from the U.S. Navy in order to successfully procure and construct the various pieces and parts of our fleet so that they can deliver on time and under budget.

The Navy has previously predicted the long lead time material, engineering support, and advanced construction activities required to capitalize on advanced procurement successes. Has there—or will there be coordination with the shipbuilding industry to identify what delays on delivery or additional costs may occur if we don't have adequate advance procurement funding?

Ms. STILLER. Yes, sir. We are in constant communication with the shipyards. And for our next multiyear on *Virginia,* we have already identified EOQ [economic order quantity] funding that will start in fiscal year 2019 for that multiyear in concert with the shipyard to make sure that we are getting the best deals we can with our EOQ funding. And that will go through the entirety of the multiyear, but we want to make sure that we have it upfront when we need it.

And I think we have it adequately funded right now in the budget, but we will continue to have that dialogue with the yard and—yards, and if they identify other areas where we could benefit from EOQ, we are happy to have that discussion.

Mr. LANGEVIN. I think that dialogue is important. Let's make sure that continues.

Finally, you may have to answer this for the record, my time is about to run out, but the Navy has made great strides in the Surface Electronic Warfare Improvement Program [SEWIP], and the existing fleet has been receiving enhanced electronic warfare and surveillance capability. So leveraging these technologies is essential to pace the impending full-spectrum threat of tomorrow's fight.

How does the fiscal year 2018 budget request advance electronic warfare capabilities? And, also, the Marines have also planned to grow their electronic warfare [EW] capabilities through aviation and ground EW equipment. Will the fiscal year 2018 budget request provide the Marines with adequate funding to make further investments in the spectrum realm?

General WALSH. Thank you, Congressman. I mentioned earlier we had gone through a fairly detailed force structure review. One of the areas that we focused on very heavily was information warfare, of which electronic warfare is a big piece of that.

So what we are doing in our Marine Corps Force 2025 is growing that structure in electronic warfare. And in the fiscal year 2018 budget, we have got funding going into both aviation and ground programs to increase those capabilities, along with the R&D efforts to get more follow-on enhanced capabilities through some of the labs that we have.

Admiral LESCHER. Sir, on the SEWIP question you had, the fiscal year 2018 budget has a Block II in full-rate production and Block III initial system that is in development. A contract award is forecast for the fourth quarter of this year.

Mr. LANGEVIN. Okay. Thank you all very much. I yield back.

Mr. WITTMAN. Thank you, Mr. Langevin.

Ms. Stiller, I do want to end with one additional question that hadn't gotten mentioned through the line of questioning, and that is concerning the aircraft carrier build.

As you know, in the Force Structure Assessment, the projection was they are to go to 12 aircraft carriers, and I want to get your perspective. At the current build rate of 1 carrier every 5 years, is it possible to ever get to 12 aircraft carriers, building 1 for every 5 years, and if not, what would the cadence of construction need to be in order for us to get to 12 within the next 30 years? And did the budget request include anything in that initiative?

Ms. STILLER. Sir, we could have gotten to 12 carriers for a brief period of time had we—on CV—when CVN–79 was introduced, but we changed the delivery schedule on that ship so that we would not get above 11.

So if you stay on 5-year centers, right now we are at 11, you would eventually get down to 10. So we have always said where you need to be to get to a 12-carrier Navy is about a 3.5-year centers. And we are not there right now. We are on 5-year centers, and at this point, the budget doesn't reflect anything that would change that. That will be something as we go through the defense strategic review this summer and SECDEF's priorities for the 2019 and out budget that we will be looking at.

Mr. WITTMAN. So if we were to go to 3.5-year cadence in builds, we could get to 12 in the next 30 years?

Ms. STILLER. Oh, yes, sir.

Mr. WITTMAN. Okay.

Ms. STILLER. Yes, sir.

Mr. WITTMAN. All right. Very good. I will go to Ms. Bordallo.

Ms. BORDALLO. Thank you.

Mr. WITTMAN. I am sorry. Mr. Courtney.

Mr. COURTNEY. Ladies first.

Ms. BORDALLO. Thank you, Mr. Courtney. Mr. Chairman, I am returning here for another question because I want to straighten out the record.

Secretary Stiller, when I asked you about the dry dock, you said one of the reasons that they are still discussing it is it is not financially viable. The BCA says that it is twice as expensive to not have a dry dock than to have one on Guam, and, of course, this would certainly be the case if you had to depend on other U.S. shipyards.

But I am wondering, would the Navy be going back to relying on foreign ship repairs like they did in the old days, taking their MSC [Military Sealift Command] ships over to Singapore? So it is my belief, and Navy leadership has stated, and we have this on record, that a dry dock is a strategic need in the Western Pacific. And I am concerned again, and I want to repeat it, that there is an overreliance, or maybe there is an overreliance on foreign ship repair.

So I am asking, what is wrong with Buy America?

Ms. STILLER. Yes, ma'am. As you know, MSC ships are not homeported, although—and I know that is a nuance there, but when we looked at the BCA, the BCA revealed to us that the usage rate would be too low to justify the cost for the dry dock and the infrastructure that came with it. The estimate in that BCA was anywhere from $32 million to $46 million a year to maintain the dock. And so that just far outweighed——

Ms. BORDALLO. So where would you go for ship repair?

Ms. STILLER. You can go—you can come back to the U.S.

Ms. BORDALLO. And that is not expensive?

Ms. STILLER. There is an expense, but it is not as expensive as maintaining a dry dock.

Ms. BORDALLO. Well, I think this should be further looked into, and, you know, I plan to do this, because——

Ms. STILLER. Understand.

Ms. BORDALLO [continuing]. I just think that if anything should erupt in our part of the world, and Guam is in the lap of North Korea, so I want to see that we have everything we need, and that is a full-scale dry dock on Guam. And the money is there, and so I see no reason why we can't continue to look at this very seriously.

And I yield back, Mr. Chairman.

Mr. WITTMAN. Thank you, Ms. Bordallo. I now go to Mr. Courtney.

Mr. COURTNEY. Thank you, Mr. Chairman. Just one quick question, which is kind of a nagging one that my office certainly hears a lot about, from Groton, which is the issue of security clearances. Again, as the hiring up is proceeding, we are, I think actually, and I think Rob is probably in the same position, you know, the State of Virginia and Connecticut, they have been doing a pretty good job of, you know, getting training and, you know, workforce skills in place, with the help of the Department of Labor.

But the security clearances, I mean, they have actually reached a point where they are segregating parts of the yard, you know, because they are still sort of in limbo waiting for the final final.

Is this an issue that you are watching, and is there anything that you can help us with in terms of reporting back?

Ms. STILLER. Yes, sir. I can tell you that this has been high on the Navy's concern list. And I believe it was last week, he may not have signed it yet, so don't hold me to this, but Mr. Stackley was poised to sign a letter to the Defense Security Services folks offering to provide naval reservists to help get at least the—to interim secret for the shipyard workers so that they can go and start work.

Obviously to get to—the clearance level has to go all the way to OPM [Office of Personnel Management], but this would at least alleviate the backlog within the Department of Defense. We are looking at this as a one-time thing, but we want—so they can go address it, but we really do understand the impacts of not being able to get that workforce employed where we need them. And so we are looking at doing this on a one-time exception to be able to go and address this backlog.

Mr. COURTNEY. I am glad I asked the question. And, again, if there is——

Ms. STILLER. Of course, if you can help us with OPM, that would be wonderful.

Mr. COURTNEY. And we are there, I mean, all in. And to the extent that, again, that, you know, memorandum has been released, you know, again, I know my office, and I would imagine others, would be very anxious to get a copy of it.

Ms. STILLER. Yes, sir.

Mr. COURTNEY. And lastly, Mr. Chairman, just for the record, I just feel like given the discussions that both of us had earlier, I

would like to enter into the record the executive summary of the FSA, the February 9 Accelerated Fleet Plan, and also Admiral Richardson's memo from last week. Again, I think it just helps sort of complete the record.

Mr. WITTMAN. I would agree. So ordered. We will make sure we do that.

[The information referred to can be found in the Appendix beginning on page 67.]

Mr. COURTNEY. And with that, I yield.

Mr. WITTMAN. Very good. Thank you, Mr. Courtney.

I do want to, Ms. Stiller, also address one other thing, and that is the Ready Reserve Force. In looking at today where the demand is in relation to a potential conflict and our ability to sustain logistics surrounding a major war, I believe we are going to be severely tested with the current element of our Ready Reserve Force. It is antiquated, its ability to conduct extensive logistical efforts, I think, is really going to be tested.

So the question is, is the Navy looking at the Ready Reserve Force? Is there anything in the current budget request to look at building the Ready Reserve Force with the capability necessary to be able to sustain logistical support necessary in a major conflict?

Ms. STILLER. Sir, this is something that we will be addressing in fiscal year 2019, but we have been looking at it, and, in fact, in the Navy's Accelerated Fleet Plan, there is a little section that talks about looking at our prepositioning ships and the age of those, and that those, while not aged out, are aging, and they could go—and I am—it doesn't say it exactly like this, but that those ships could be considered to go into the Ready Reserve to relieve those ships that are very old, because what we don't want to do is build brand-new ships and then put them in the Ready Reserve. That doesn't make sense.

So you would recapitalize potentially the Maritime Prepositioning Ships. And we want to look, because we want to be very thoughtful about it, we want to look at something like a common hull form or a family of common hulls that would provide that capability, that would provide synergy on the—and logistics support and other stuff. So we are looking at it. TRANSCOM [U.S. Transportation Command] is also interested, as I know you have heard——

Mr. WITTMAN. Yes.

Ms. STILLER [continuing]. On bringing ships from the Maritime Security Program, buying them and bringing them into the Ready Reserve. There is probably a mixture of all of that that has to be looked at.

And, again, we intend to be looking at that in 2019, so I think you will start to see that discussion happen starting in 2019.

Mr. WITTMAN. Yeah. I think that is critical. And we would like to continue the discussion with you and see a concrete proposal for 2019. I think we have to do more than just look at it at that particular point.

Hopefully what we look at over the next year, then we can work with you and have a concrete proposal in 2019 for the Ready Reserve Force, because my concern in talking with General McDew and others is that our capacity there and ability to sustain in a

major conflict is really being stretched to the point where I think it becomes strategically problematic.

Ms. STILLER. Yes, sir. We will work with you.

Mr. WITTMAN. Very good. Thank you so much.

Any other questions from the subcommittee? If not, we are adjourned.

[Whereupon, at 3:37 p.m., the subcommittee was adjourned.]

A P P E N D I X

MAY 24, 2017

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MAY 24, 2017

Opening Remarks of the Honorable Robert J. Wittman
For hearing

Department of the Navy Fiscal Year 2018 Budget Request
for Seapower and Projection Forces

May 24, 2017

Today, we meet to Department of the Navy's Fiscal Year 2018 budget request. Appearing before us to discuss this important topic are three esteemed Navy witnesses:

Ms. Allison Stiller
Performing the Duties of – Assistant Secretary of Defense, Research, Development and Acquisition;

Vice Admiral William K. Lescher
Deputy Chief of Naval Operations for Integration of Resources and Capabilities; and

Lieutenant General Robert S. Walsh
Deputy Commandant for Combat Development and Integration.

I want to thank you all for your service and, just as important, thank you for appearing before this subcommittee on the fiscal year 2018 budget request.

Last week, the Chief of Naval Operations, Admiral Richardson, laid out a bold vision for the Navy. He indicated, "Both China and Russia are able to compete on a global scale, in all domains, and at competitive speed." In response to this increased global pressure, he stated, "The future fleet must be timely—we need this more powerful fleet in the 2020s, not the 2040s."

Without any reservation, I believe that the CNO is correct. Unfortunately, the fiscal year 2018 budget request does not support the vision of the CNO nor of this subcommittee. While I do not object with the budget's emphasis on current readiness, I believe that there is a high degree of naiveté in the area of ship construction. We must start now, not in 2019. Some believe that ship construction is like a spigot that can be turned on and off. I believe that there are those in defense budgeting that advocate for such an approach. In ship construction, we know one thing for certain: Ship construction is a long game and requires steady funding to achieve steady progress.

Unfortunately, I do not see steady progress toward fulfilling the goal of obtaining a 355-ship Navy. The budget request of only 8 ships does little to build towards a 355-ship Navy. We have hot production lines, ready to add more work. But the call to duty has not been sounded. It is time to get

serious and match our peer competitors with aggressive ship construction initiatives.

As to specific concerns with the Navy request, building one aircraft carrier every five years will never allow us to reach 12 aircraft carriers; building two attack submarines a year will result in an attack submarine reduction by 20 percent in ten years; and building only one LCS will result in massive layoffs at both Marinette, WI and Mobile, AL. These are not acceptable outcomes.

As to the Marine Corps, I am pleased this committee supported the authorization of two more San Antonio-class amphibious ships in the last two years. However, I hold some concerns in respect to conducting amphibious operations in a contested environment. As our adversaries become more capable, our Marine Corps may need a bold, new vision to accomplish future missions. This vision may require a change to our legacy forces. Expansion of aviation projection, longer-range connectors and a lighter amphibious capability are all desired attributes of a more capable expeditionary force structure. Unfortunately, I see little in this budget request to change our current trajectory.

I am reminded of the words of John F. Kennedy, himself a proud navy officer, when he said that history has taught us "that control of the sea means security. Control of the seas can mean peace. Control of the seas can mean victory. The United States must control the seas if it is to protect your security…" Ladies and gentlemen, it is time that our nation wake up and seize control of the seas.

I would now like to turn to our Ranking Member Joe Courtney, for any remarks he may have.

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

STATEMENT OF

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ASSISTANT SECRETARY OF THE NAVY FOR
RESEARCH, DEVELOPMENT AND ACQUISITION (ASN(RD&A))
PERFORMING THE DUTIES AND FUNCTIONS OF ASN(RD&A)

AND

LIEUTENANT GENERAL ROBERT S. WALSH
DEPUTY COMMANDANT
COMBAT DEVELOPMENT AND INTEGRATION &
COMMANDING GENERAL, MARINE CORPS COMBAT DEVELOPMENT COMMAND

AND

VICE ADMIRAL WILLIAM K. LESCHER
DEPUTY CHIEF OF NAVAL OPERATIONS
FOR INTEGRATION OF CAPABILITIES AND RESOURCES

BEFORE THE

SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES OF THE

HOUSE ARMED SERVICES COMMITTEE ON

DEPARTMENT OF THE NAVY SEAPOWER AND PROJECTION FORCES CAPABILITIES

MAY 24, 2017

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

Chairman Wittman, Ranking Member Courtney, and distinguished members of the subcommittee, thank you for the opportunity to appear before you today to address the Department of Navy's Seapower and Projection forces capabilities.

The global activities over the last year have made it clear that the security challenges from major power competition are intensifying at an increasingly rapid pace. The Navy and Marine Corps continue to support the Joint Force in defending the homeland and responding to the security challenges of Russia, China, North Korea, Iran and global counter-terrorism. In the Indo-Asia-Pacific, our carrier strike groups, amphibious ready groups, and destroyers provide presence, strengthen partnerships, patrol the South China Sea to maintain interoperability, and deter adversaries. In the Middle East, our carrier strike groups and strike fighter aircraft continue operations against the Islamic State of Iraq and Syria. In Afghanistan, the Marine Corps deployed to Helmand Province to train, advise and assist the Afghan National Army and Police. Just last month, two destroyers operating in the Mediterranean Sea enabled the United States to take swift action against chemical attacks in Syria with Tomahawk cruise missile strikes.

Over 2016, the Marine Corps executed over 210 operations, 20 amphibious operations, 160 Theater Security Cooperation events, and participated in 75 exercises, with units deployed to every Geographic Combatant Command. And in response to a request for the U.S. Agency for International Development to assist with U.S. Government disaster relief efforts after Hurricane Matthew made landfall in October 2016, a Special Purpose Marine Air Ground Task Force (MAGTF) self-deployed within 48 hours to provide much needed aid to the people of Haiti, followed by the 24th Marine Expeditionary Unit (MEU) shortly thereafter. Our Sailors and Marines deployed around the world continue to perform missions and operate forward – ready to respond to any challenge and being where it matters when it matters.

To remain competitive, it is imperative that we continuously adapt to the emerging security environment – and do so with a sense of urgency. This requires working closely with Congress to return budget stability and predictability to the Department, and address defense spending in a fiscally responsible manner. Together, we can ensure our military's capability, capacity and readiness can continue to deliver superior naval power for the United States around the world, both today and tomorrow.

The Fiscal Year 2018 President's Budget Request

The Fiscal Year (FY) 2018 President's Budget submission is governed by the defense priorities of the Secretary of Defense to improve warfighting readiness and program balance by addressing pressing programmatic shortfalls that have accrued from 15 years of wartime operational tempo, fiscal constraints and budget uncertainty. Improving readiness directly impacts the operational capacity of our current fleet by ensuring that our ships and aircraft are ready to deploy when needed. If a ship is de-certified due to lack of maintenance, it is one less asset that the Navy and Marine Corps can deploy. The Department thanks the subcommittee for your efforts in supporting the Administration's request for additional funding for our critical readiness shortfalls and increases in force structure procurement in the FY 2017 Consolidated Appropriations Act.

At the same time, investing in the modernization of our current platforms and weapons is necessary to restore the fleet to full health and ensure they have the advanced capabilities needed to address the dynamic current and future threats. The FY 2018 request continues key investments in advanced technologies and modernization of our current Seapower and Projection forces.

The Navy prioritized addressing the significant readiness debt and improving the wholeness of our current fleet over our ability to grow force structure in this budget. The FY 2018 President's budget sustains procurement of eight ships in FY 2018: two SSN 774 *Virginia* class attack submarines; two DDG 51 *Arleigh Burke* class destroyers; one Littoral Combat Ships (LCS); one *Ford* class aircraft carrier (CVN); one *John Lewis* class fleet oiler (T-AO); and one Towing, Salvage and Rescue ship (T-ATS). The Secretary of Defense has prioritized growing capacity and lethality for the FY 2019 President's Budget. The wholeness that the FY 2018 President's Budget delivers will accelerate key warfighting capabilities and maintain the operational effectiveness of our current force, while also building a bridge to growing the future force in FY 2019.

The Navy's 2016 Force Structure Assessment (FSA) was developed in an effort to determine the right balance of forces – ships currently under construction and future procurement – needed to address the evolving and increasingly complex threats naval forces are expected to counter. The FSA detailed a long-term requirement for 355 ships in the battle force, assuming the Navy continues to replace the ships we have today with ships of similar capability and employs them using similar concepts of operations. The FY 2019 President's

Budget will be informed by the pending National Security Strategy and the National Military Strategy and chart a course to building the larger, more capable battle force the nation needs.

In addition, the Department continues to analytically assess the Future Fleet Architecture studies directed by the FY 2016 National Defense Authorization Act in order to incorporate the most promising elements in our concept development, research and development, and rapid fielding efforts. This assessment will innovate ways to deliver the equivalent naval power of a larger force.

Consistent with the defense priorities, the FY 2018 President's Budget request for procurement of expeditionary warfare and naval aviation remains consistent with last year's force structure plans. In FY 2018, this includes three Ship-to-Shore Connectors and 84 total aircraft, including seven P-8A Poseidon, five E-2D Advanced Hawkeye, and two KC-130J Hercules.

Summary

The Department of the Navy's FY 2018 budget request strategically delivers the best balance to responsibly improve the wholeness of our current forces. With Congress' support, we look forward to the growth of our future forces to meet the evolving threats. In addition, the Department is aggressively pursuing efforts to accelerate acquisition processes and schedules and further drive affordability into our programs, in order to deliver capability to our warfighters faster and be as effective as possible within our resources. We greatly appreciate this subcommittee's strong and consistent support for your Sailors and Marines.

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

U.S. NAVY AND MARINE CORPS SEAPOWER AND PROJECTION FORCES CAPABILITIES

Aircraft Carriers

The aircraft carrier is the centerpiece of the Navy's Carrier Strike Groups and central to Navy core capabilities of sea control, maritime security, and humanitarian assistance and disaster relief. *Nimitz* and *Ford* class carriers will be the premier forward deployed asset of choice for crisis response and early decisive striking power in major combat operations for the next half-century. The Department has established a steady state *Ford* class procurement plan designed to deliver each new ship in close alignment with the *Nimitz* class ship it replaces. CVN 78 will deliver this month and will provide unprecedented capability to our nation for the next half century.

By capitalizing on lessons learned from the lead ship, CVN 79 and 80 have achieved significant cost reductions. The USS *John F. Kennedy* (CVN 79) is 28 percent complete with launch planned in 2020 and delivery in the fall of 2024. The USS *Enterprise* (CVN 80) has begun construction planning and long lead time material procurement. Construction is scheduled to begin in spring of 2018.

The *Nimitz* class Refueling Complex Overhaul (RCOH) is key to both the maintenance and modernization of each carrier in support of the second half of its service life. This spring, USS *Abraham Lincoln* (CVN 72) will return to the Fleet for another 23 years after completing her mid-life recapitalization depot availability to accomplish refueling of the ship's reactors, modernization, and repair of ship systems and infrastructure. This fall, USS *George Washington* (CVN 73) will begin her mid-life recapitalization.

Submarines

Ballistic Missile Submarines, coupled with the TRIDENT II D-5 Strategic Weapons System, represent the most survivable leg of the Nation's strategic arsenal and provide the Nation's most assured nuclear response capability. The current SSBN and SSGNs' life cycles cannot be extended, and the *Columbia* Class Program is on track to start construction in FY 2021, deliver to pace retirement of our current ballistic missile submarines, and deploy for first patrol in FY 2031. The Navy released the Detail Design Request for Proposal for *Columbia* and plans to award the design contract in calendar year 2017. The FY 2018

President's Budget supports the funding required to achieve a target of 83 percent design completion at construction start in FY 2021. This budget request also funds Continuous Production of Missile Tubes which will improve manufacturing efficiencies and vendor learning, maintain critical production skills, and reduce costs by leveraging high-volume procurements.

In addition to the Department of the Navy's budget request, the continued support of Congress for Naval Reactors' Department of Energy funding is vital to the Navy mission and ensuring the safe, reliable, and enduring operations of the nuclear-powered fleet. The President's FY 2018 budget fully funds Naval Reactors' request for the *Columbia* class SSBN. Recapitalizing this capability is critical to the Navy's readiness, specifically by ensuring adherence to the tight refueling and defueling schedule of nuclear-powered aircraft carriers and submarines.

The *Virginia* class submarine program continues to deliver submarines that are operationally ready to deploy within budget. The Block IV contract for 10 ships continues the co-production of the *Virginia* class submarines through FY 2018. The Navy intends to build on these savings and capitalize on increased efficiency and decreased costs with a *Virginia* class Block V Multiyear Procurement (MYP) contract for 10 boats, planned for FY 2019. The Block V contract will bring to bear two new capabilities to the fleet with the introduction of the *Virginia* Payload Module (VPM) and Acoustic Superiority. The Navy is investing in VPM to mitigate the 60 percent reduction in undersea strike capacity when the SSGN boats retire in FY 2026-2028.

In 2014, the Navy led a comprehensive government-industry assessment of shipbuilder construction capabilities and capacities at General Dynamics Electric Boat (GDEB) and Huntington Ingalls Industries-Newport News Shipbuilding (HII-NNS) to formulate the Submarine Unified Build Strategy (SUBS) for concurrent *Columbia* and *Virginia* class submarine production. This build strategy's guiding principles are: affordability; delivering *Columbia* on time and within budget; maintaining *Virginia* class performance with a continuous reduction in costs; and maintaining two shipbuilders capable of delivering nuclear-powered submarines. In 2016, the Navy established the Integrated Enterprise Plan to further the SUBS effort and provide a framework for an integrated approach to support *Columbia*, *Virginia*, and CVN construction. This long term plan will guide the execution of these nuclear powered platforms to reduce cost and schedule risk.

Large Surface Combatants

The *Arleigh Burke* class (DDG 51) program remains one of the Navy's most successful shipbuilding programs with 64 ships delivered to the Fleet. The FY 2018 President's Budget request includes the FY 2018-2022 MYP for ten destroyers, maximizing affordability and stabilizing the industrial base. All ships in this MYP will incorporate Integrated Air and Missile Defense and provide additional Ballistic Missile Defense (BMD) capacity known as Flight III, which incorporates the Air and Missile Defense Radar (AMDR). AMDR meets the growing ballistic missile threat by improving radar sensitivity and enabling longer range detection of increasingly complex threats. The program demonstrated design maturity through its successful completion of several stages of developmental testing and its recent achievement for entry into the Production and Deployment phase.

This radar is planned for inclusion in FY 2017 via an Engineering Change Proposal to the Flight IIA configuration. This much needed capability is essential for future sea-based BMD and is expected to deliver to the fleet in the early FY 2020s.

The DDG 1000 *Zumwalt* class guided missile destroyer is an optimally crewed, multi-mission, surface combatant designed to provide long-range, precision, naval surface fire support to Marines conducting littoral maneuver and subsequent operations ashore. The DDG 1000 program accomplished several milestones in 2016 including the first phase of delivery, commissioning, and sailaway of USS *Zumwalt* to its homeport of San Diego. The ship has completed multiple at sea underway periods for follow on testing and has since commenced its Combat Systems Activation period in its homeport of San Diego. USS *Zumwalt* will deliver in the spring of 2018. The remaining two ships of the class, DDG 1001 and DDG 1002 are under construction and are 92 and 59 percent complete, respectively.

Small Surface Combatants

The 2016 FSA revalidated the warfighting requirement for a total of 52 small surface combatants. To date, nine LCS ships have delivered and 17 are in various stages of construction. Both LCS shipyards have upgraded their facilities and have a qualified work force and industry team in place for full serial production; delivering ships well below the congressionally mandated cost cap. The Department continues to refine the requirements and acquisition strategy for the Frigate. To allow adequate time to mature the design and thoroughly evaluate design alternatives, the FY 2018 President's Budget request defers the first

year of Frigate procurement to FY 2020 with the LCS program continuing in FY 2018 and FY 2019 to bridge to the Frigate. The Department plans to transition to Frigate in FY 2020 and intends to maximize competition in the shipbuilding industrial base.

The LCS Mission Modules program continues the development of the Surface Warfare (SUW), Mine Countermeasures (MCM), and Anti-Submarine Warfare (ASW) capabilities and delivering individual mission systems incrementally as they become available. The LCS with an embarked SUW Mission Package (MP) provides a robust and flexible combat capability to rapidly detect, track, and prosecute small-boat swarm threats. The Surface-to-Surface Missile Module with Longbow Hellfire is currently in testing with Initial Operational Capability (IOC) planned for FY 2018. Development and integration of the ASW MP Escort Mission Module (EMM) and Torpedo Defense Module are ongoing. The Department recently awarded an option to build the ASW EMM and is on track to fully integrate with LCS to support IOC with the ASW MP in FY 2019.

The MCM MP provides the capability to detect, classify, identify, and neutralize mines throughout the water column, from the beach zone to the sea floor. Several of the MCM MP systems performed well during MCM MP TECHEVAL. IOC for Airborne Laser Mine Detection System and Airborne Mine Neutralization System was achieved in November 2016. These systems are in production and are being delivered to the fleet today. After cancelling the Remote Minehunting System program in FY 2016 due to poor reliability during TECHEVAL and following the conclusion of the Independent Review Team recommendations, the Department designated the MCM Unmanned Surface Vehicle (USV) as the new tow platform for minehunting operations. The MCM USV is based on the USV already used in the Unmanned Influence Sweep System program and development began in March of 2017. IOC is planned for FY 2020.

Amphibious Ships

Amphibious ships operate forward to support allies, rapidly and decisively respond to crises, deter potential adversaries, and provide the Nation's best means of projecting sustainable power ashore. They also provide an excellent means for providing humanitarian assistance and disaster relief. The 2016 FSA validated the warfighting requirement for 38 amphibious ships, driven by: maintaining persistent forward presence, which enables both engagement and crisis response; and delivering the assault echelons of two Marine

Expeditionary Brigades (MEB) for joint forcible entry operations. The 38 ship requirement is comprised of 12 Amphibious Assault Ships (LHD/LHA) and a mixture of 26 Amphibious Transport Dock (LPD), Dock Landing Ship (LSD), and Amphibious Ship Replacement LX(R) Ships. The amphibious force structure is projected to grow to a total of 34 ships starting in FY 2021.

LX(R) is the replacement program for LSD 41 and LSD 49 classes. The LX(R) program focus during the remainder of this year will be on completing the contract design efforts. The LX(R) contract design is being performed by General Dynamics National Steel and Shipbuilding Company (GD-NASSCO) and HII, in support of the future Detail Design and Construction competitive acquisition. The lead LX(R) is planned to begin construction in FY 2022.

LHA 6 *America* class ships are flexible, multi-mission platforms with capabilities that span the range of military operations, from forward deployed crisis response to forcible entry operations. These ships will provide the modern replacements for the LHA 1 *Tarawa* class ships and the aging LHD 1 *Wasp* class ships. USS *America* (LHA 6) completed its Post Shakedown Availability in March 2016 and will subsequently complete further operational testing and training in preparation for its first deployment. USS *Tripoli* (LHA 7) construction is 70 percent complete and on schedule to deliver in 2018. LHA 8 will have a well deck to increase operational flexibility and a reduced island that increases flight deck space to enhance aviation capability. The Detail Design and Construction contract for LHA 8 is scheduled to award this summer and delivery is planned for FY 2024.

The *San Antonio* class (LPD 17) provides the ability to embark, transport control, insert, sustain, and extract elements of a MAGTF and supporting forces by helicopters, tilt rotor aircraft, landing craft, and amphibious vehicles. Two ships are under construction, *Portland* (LPD 27) and *Fort Lauderdale* (LPD 28), and are planned to deliver in October 2017 and August 2021 respectively. LPD 28's design and construction features will leverage many of the ongoing LX(R) design innovations and cost reduction initiatives that are necessary for the program to achieve affordability goals while maintaining the high level capabilities of the LPD 17 class. Congress added a 13th ship (LPD 29) in FY 2017 which will mitigate critical impacts to shipbuilding and combat systems industrial bases caused by the gap in ship construction between the start of construction for LPD 28 and the start of construction for LX(R).

Auxiliary Ships, Expeditionary, and Other Vessels

Support vessels such as the Expeditionary Sea Base (ESB), Expeditionary Transfer Dock (ESD) and the Expeditionary Fast Transport (EPF) provide additional flexibility to the Combatant Commanders. The USNS *Montford Point* (T-ESD 1) and USNS *John Glenn* (T-ESD 2) provide two core capabilities of vehicle and equipment transfer at-sea and interface with surface connectors to deliver vehicles and equipment ashore to complete arrival and assembly. The USNS *Lewis B. Puller* (T-ESB 3), the first Afloat Forward Staging Base variant of the ESD, was delivered in June 2015 and becomes operationally available this year. T-ESBs are flexible platforms capable of hosting multiple mission sets with airborne, surface, and subsurface assets. ESBs 4 and 5 are under construction, with deliveries scheduled for March 2018 and May 2019, respectively.

The EPF provides a high-speed, shallow-draft alternative to moving personnel and materiel within and between the operating areas, and to supporting security cooperation and engagement missions. EPF 8 was delivered in April 2017 and production continues on EPFs 9-11.

The Combat Logistic Force consists of T-AOE fast support ships, T-AKE auxiliary dry cargo ships, and T-AO fleet replenishment oilers. Combat Logistics Force ships fulfill the vital role of providing underway replenishment of fuel, food, repair parts, ammunition and equipment to forward deployed ships and embarked aircraft, to enable them to operate for extended periods of time at sea. The *Kaiser* class (T-AO 187) fleet replenishment oilers will be replaced with the *John Lewis* class fleet replenishment oilers, designated T-AO 205 class. The Detail Design and Construction contract was awarded in 2016 to GD-NASSCO for production of the first six ships of the class.

The Department has begun procurement of a combined Towing, Salvage, and Rescue (T-ATS) ship to replace the four T-ATF 166 class fleet tugs, which reach the end of their expected service lives starting in 2020, and the four T-ARS 50 class salvage ships, which reach the end of their expected service lives starting in 2025. The lead ship is planned for award in 2017 and the total ship quantity is planned to be eight ships.

Also in 2016, the Navy and Coast Guard established an Integrated Program Office to rebuild the Nation's heavy icebreaking capability. The Navy is supporting the Coast Guard's efforts to responsibly and affordably recapitalize the heavy polar icebreaker fleet. The Coast Guard intends to leverage existing designs and mature technologies to mitigate schedule and

cost risks using a strategy based on robust industry collaboration and competition. Based on this effort, the Coast Guard expects delivery of the first icebreaker as early as 2023.

Surface Ship Modernization

Modernization is a critical aspect of sustaining the current fleet with advanced capability. The Navy and industry are collaborating on innovative approaches to conducting Modernization of Cruisers and Dock Landing Ships. The FY 2018 President's Budget includes funding for the modernization of six destroyers to sustain combat effectiveness, ensure mission relevancy and achieve the full expected service lives of the AEGIS Fleet. The request also continues to execute and fully funds $4 billion over the FYDP for "2-4-6" modernization of seven cruisers to ensure long-term capability and capacity for purpose-built Air Defense Commander platforms. The remaining four CGs, which have BMD capability, will receive modernization to their hull, mechanical and electrical systems to support their operation through their engineered service life.

In order to maintain 11 deployable LSDs in the active force until LX(R) delivers, the Department continues modernization of three LSDs to ensure 40 years of operational service life for each ship. The first LSD, USS *Tortuga* (LSD 46), was inducted into modernization in FY 2016 and is scheduled to begin her modernization availability in FY 2018. This plan mitigates presence shortfalls and supports 2.0 MEB Assault Echelon shipping requirements.

Autonomous Undersea Vehicles

Autonomous Undersea Vehicles (AUV) are a key component of the Navy's effort to expand undersea superiority. These unmanned vehicles operate independently from or in cooperation with manned vehicles, conducting maritime missions such as Intelligence, Surveillance and Reconnaissance (ISR), Seabed Warfare, and Deception.

The Orca Extra Large Unmanned Underwater Vehicle (XLUUV) is one of the larger class unmanned undersea vehicles that is being designed to launch from a pier or large surface ship and operate for weeks or months. It will have extended range and a reconfigurable, modular payload bay to support multiple payloads and a variety of missions to complement manned systems.

The Snakehead Large Displacement Unmanned Underwater Vehicle (LDUUV) is an unmanned undersea vehicle to offload "dull, dirty, dangerous" missions from manned

platforms and mitigate the submarine gap beginning in 2022. Snakehead LDUUV will be launched from a variety of platforms, including both surface ships and submarines. The initial craft's mission will be intelligence preparation of the operational environment with follow-on missions including ISR, acoustic surveillance, ASW, MCM, and offensive operations.

Combat Systems

The Department continues to field the most capable and lethal surface and submarine combat systems in the world. The AEGIS Combat System Baseline 9, fielded on cruisers and destroyers, offers unprecedented defense capabilities, including simultaneous air and ballistic missile defense on Destroyers and Air Defense Commander capability on cruisers. By the end of 2017, the Navy will have completed a total of twelve AEGIS Baseline 9 Combat Systems installations. Baseline 10 will bring the AMDR radar providing enhanced radar performance and expanding the Navy's ability to perform the Integrated Air and Missile Defense mission.

The Ship Self Defense System combat system supports a myriad of mission areas on all Carrier and large deck Amphibious Class Ships (six ship classes).

The Department continues to aggressively pursue affordable defensive systems that are employable from multiple platforms. Under the Surface Electronic Warfare Improvement Program (SEWIP), the Department is replacing aging analog electronic warfare defensive systems first fielded in the early 1970's with new, digital systems. SEWIP Block 1 and 2 systems have been approved for Full Rate Production and are currently being fielded across the fleet. The SEWIP Block 3 program has completed its Critical Design Review in 2017 and is currently on track to begin fielding in the 2019-2020 timeframe.

The Submarine community continues to successfully deliver improvements in Anti-Submarine Warfare utilizing a bi-annual spiral development model and leveraging commercial off-the-shelf (COTS) technologies via the Acoustic Rapid COTS Insertion (A-RCI) program. Developmental towed arrays with improved telemetry have been successfully fielded on deployed fast attack submarines and new contracts for TB-29X and TB-34X, with these new telemetries were awarded in FY 2016.

Naval Aviation

Airborne Early Warning Aircraft

The Navy continues its full support for E-2D. E-2D is the premier Navy's carrier-based Airborne Early Warning and Battle Management Command and Control (C2) system. The aircraft provides 'Theater Air and Missile Defense' and Naval Integrated Fire Control-Counter Air and is capable of synthesizing information from multiple onboard and off-board sensors, making complex tactical decisions and then disseminating actionable information to Joint Forces in a distributed, open-architecture environment.

Maritime Patrol Aircraft

The P-8A Poseidon recapitalizes the ASW, ASuW, and armed ISR capabilities from the aging P-3C Orion. The P-8A combines the proven reliability of the commercial 737 airframe with avionics that enable integration of modern sensors and robust military communications. The first P-8A operational deployment was completed in June 2014, with continuous deployments to both 7th Fleet and 6th Fleet underway. As of April 2017, seven of twelve fleet squadrons have completed transition and an eighth is underway. All squadrons are scheduled to complete transition by FY 2020. The P-8A program is meeting all cost, schedule and performance parameters; it has achieved and surpassed reliability standards for operational availability and delivered forward commanders unprecedented capability.

Fixed Wing Aircraft

Fielded throughout our active force, the KC-130J brings increased capability, performance and survivability, with lower operating and sustainment costs for the MAGTF. Forward deployed in support of ongoing operations since 2005, the KC-130J continues to deliver Marines, fuel and cargo whenever and wherever needed. In 2017, the KC-130J remains in high demand, providing tactical air-to-air refueling, assault support, close air support and Multi-sensor Imagery Reconnaissance capabilities in support of Special Purpose MAGTFs and deployed MEUs.

Unmanned Aviation

The Navy is committed to unmanned carrier aviation. Towards that end, we are embarking on efforts that will result in the development of an unmanned mission tanker to

extend the range and reach of the Carrier Air Wing (CVW) with a secondary ISR mission. As MQ-25 will significantly extend CVW mission effectiveness range and address the future CVW-tanker gap, it will also preserve strike fighter fatigue life expectancy rates and help mitigate an expected strike fighter shortfalls (mid-2020s). As the first carrier-based 'Group 5' Unmanned Aircraft Systems (UAS), MQ-25 will pioneer the integration of manned-unmanned operations, mature complex sea-based C4I technologies, and pave the way for future multi-mission UASs to keep pace with emerging threats.

The MQ-4C Triton is a key component of the Navy Maritime Patrol Reconnaissance Force. Its persistent sensor dwell, combined with networked sensors, will enable it to effectively meet ISR requirements in support of the Navy Maritime Strategy. Triton will start establishing five globally-distributed, persistent maritime ISR orbits beginning in FY 2018, as part of the Navy's Maritime ISR and Targeting Transition Plan. MQ-4C Triton test vehicles have completed over 110 test flights as of April 2017, and will complete sensor and performance flight testing this fall in support of an early operational capability in the Pacific next year.

The Navy utilizes MQ-8 to provide rapid employment of sea-based ISR with a radius greater than 110 nautical miles around a LCS or Suitably Equipped Air Capable Ships. In April 2017, a Fire Scout test team, along with Sailors aboard the USS *Montgomery* (LCS-8), successfully conducted dynamic interface testing to verify the MQ-8C launch and recovery procedures and test interoperability between the unmanned helicopter and the ship. With these tests completed, Fire Scout will be ready to begin Initial Operational Test & Evaluation (IOT&E) in the fall of 2017.

Weapons

The Department continues to make significant strides in extending the fleet's layered defense battle-space while also improving the capabilities of the individual ship defense layers in order to pace the increasing anti-ship missile threat. Standard Missile-6 (SM-6) provides theater and high value target area defense for the fleet and with integrated fire control, has more than doubled defensive battle-space. In April 2017, SM-6 Block I testing successfully completed live fire requirements and the program is on schedule to declare Full Operational Capability (FOC) by the end of this calendar year. SM-6 Block IA is an enhanced version of SM-6 Block I with guidance section hardware and software modifications for improved

capability against advanced threats. Delivery of both the SM-6 Block I and SM-6 Block IA continue to meet contractual delivery schedule requirements.

The Evolved Sea Sparrow Missile (ESSM) provides another layer to the Navy's defended battle-space. The ESSM Block 2 Milestone C decision is scheduled for July 2018 with IOC for AEGIS platforms scheduled for 2020 and Ship Self Defense System platforms IOC in the 2022-2023 timeframe.

The third inner layer of the fleet's layered defense is the Rolling Airframe Missile (RAM) Block 2 designed to pace the evolving anti-ship cruise missile threat and improve performance against complex stream raid engagement scenarios. In FY 2017, the RAM Block 2 Program continued to demonstrate outstanding performance through successful fleet and ship qualification firing events. The RAM Block 2 will proceed to a Full Rate Production Decision Review in FY 2018 upon completion of the final modeling and simulation runs.

The FY 2018 President's Budget includes funding to continue upgrades to the Standard Missile-2 (SM-2) inventory with active guidance. This investment provides an affordable, integrated fire control capable, area defense missile to counter stressing threats.

The Department has aligned its Cruise Missile Strategy along warfighter domains to pursue maximized lethality while minimizing overall costs to the taxpayer. The first tenet of our strategy is to sustain the highly successful, combat proven, Tomahawk cruise missile inventory through its anticipated service-life via a mid-life recertification program (first quarter of FY 2019 start). This recertification program will increase missile service-life by an additional 15 years (total of 30 years) and enable the Department to support Tomahawk in our active inventory through the mid-late 2040s. In concert with our recertification program we will integrate modernization and technological upgrades and address existing obsolescence issues. In addition, we are developing a Maritime Strike Tomahawk capability to deliver a long-range anti-surface warfare capability.

Second, the Department will field the Long Range Anti-Ship Missile (LRASM) as the air-launched Offensive Anti-Surface Warfare/Increment 1 (OASuW/Inc. 1) material solution to meet near to mid-term anti-surface warfare threats. LRASM is pioneering accelerated acquisition processes. We anticipate LRASM will meet all Joint Chiefs of Staff-approved warfighting requirements, deliver on-time, and cost within approximately one percent of its original program cost estimate.

Finally, the Department plans to develop follow-on next generation strike capabilities,

including an air-launched OASuW/Increment 2 weapon to address long-term ASuW threats and a surface and submarine launched Next Generation Land Attack Weapon (NGLAW). NGLAW will have both a long-range land strike and maritime ASuW capability that initially complements, and then replaces, the highly successful Tomahawk Weapon System. To the maximum extent possible, the Department will leverage common components and component technologies to reduce cost, shorten development timelines, and promote interoperability.

Expeditionary Warfare

Expeditionary Warfare

The whole principle of Expeditionary Warfare is to operate forward, to exploit the seas as maneuver space as a base for global power projection, and to be ready to maneuver to shore when so ordered. Our ability to deploy from the sea in austere environments at a time and place of our choosing gives us significant tactical, operational and strategic advantages over potential adversaries. That ability is provided through the combination of connectors that move the ground force from the sea base to the ashore objective and the organic capability of the ground force to maneuver and fight once ashore.

The Navy/Marine Corps team provides the Combatant Commanders and our Nation the options needed to engage with our partners, to deter our adversaries and, when needed, to fight and win. That capability is underpinned by our disciplined, well-trained and motivated Sailors and Marines equipped with the amphibious ships, aircraft and weapons in our arsenal. Unique to our expeditionary warfare capabilities is the ability to exploit the sea as maneuver space and conduct operations unencumbered by the need for diplomatic clearances. Tactically, the ability to project multiple elements of a landing force ashore via multiple entry points using both vertical and surface means gives us greater flexibility in maneuvering into positions of advantage over an adversary. That ability is provided through the combination of connectors to move the landing forces from the sea to objectives ashore and the organic capability of the landing force to maneuver and fight while ashore. Our service capstone concept, the Marine Corps Operating Concept, envisions a future Marine force fighting at and from the sea to gain and maintain sea control and enable freedom of maneuver within a Naval or Joint Task Force. Development of these unique capabilities is on-going and is planned for near-term delivery with Force 2025.

Connectors

Our expeditionary warfare doctrine requires surface and vertical lift capability to transport personnel, supplies and equipment from within the seabase and maneuver them to objectives ashore. Surface and aviation connectors with enhanced speed and range will provide future expeditionary force commanders greater flexibility to operate in contested environments. While the aviation component of our connector capability has seen significant modernization with the fielding of the MV-22 and continuation of the CH-53K program, our primary surface connectors, the Landing Craft Air-Cushion (LCAC) and the Landing Craft Utility (LCU) are reaching the end of their service lives and require modern replacements.

The FY 2018 President's Budget funds the new LCAC-100 class air cushioned vehicles. The Ship-to-Shore Connector program will replace the aging LCACs which have undergone service life extension programs (SLEP) and a post-SLEP sustainment program. Additionally, FY 2018 budget request includes the procurement of the first LCU-1700 class craft which will begin the recapitalization of the aging LCU 1610 class.

These platforms are essential in connecting the combat power and logistics sustainment the sea base provides, with the forces operating in the littorals and executing inland missions. The Department will continue to explore future connector options that will increase our ability to exploit the sea as maneuver space by increasing range, speed, and capacity.

Combat and Tactical Vehicles

Combat and tactical vehicle modernization programs account for a significant portion of Marine Corps ground modernization investment. The overarching combat and tactical vehicle investment priority is the modernization of Assault Amphibian capability with a combination of complementary systems and programs. The Amphibious Assault Vehicle (AAV) Survivability Upgrade (AAV SU) and the Amphibious Combat Vehicle (ACV) programs are the means to replace the legacy AAV and are both in Engineering and Manufacturing Development phase.

The AAV SU program will modernize four Assault Amphibian companies and requisite elements of the supporting establishment (466 of 964 AAVs). This quantity supports the phased modernization of this critical capability while sustaining sufficient capacity to meet a 2.0 MEB Assault Echelon lift through 2035. The program was certified

Milestone B in the spring of 2014, and ten prototypes are currently undergoing developmental test and operational assessment. Milestone C is planned for the fourth quarter of FY 2017 and IOC is planned for FY 2019. FOC is planned for FY 2023.

The ACV 1.1 program will modernize two Assault Amphibian companies and will provide additional required lift capacity in support of the assault echelon (204 vehicles). The program was certified Milestone B in the fall of 2015. Two vendors (BAE and SAIC) were selected to produce 16 prototypes each for further testing. The vendors are currently building prototypes for delivery to the government and have begun developmental test. Milestone C is planned for the third quarter of FY 2018, and IOC is planned for FY 2020. FOC is planned for FY 2022.

The ACV 1.2 program phase is an increment that will modernize four Assault Amphibian companies to provide the balance of required capacity in support of sustained operations ashore (490 vehicles) along with mission role variants for C2 and maintenance and recovery. IOC is planned for FY 2023 and FOC is planned for FY 2026.

The ACV 2.0 program phase is an increment that will replace AAV SU by 2035. We remain committed to evaluating ways to extend the amphibious task force's operational reach. We have identified a decision point in the mid-2020s that will allow us to assess technologies and materiel alternatives to enable extended reach without unacceptable trade-offs and unaffordable costs. Science and Technology lanes have been established to: (1) Enhance ACV to improve water speed/fuel economy; (2) Research future sleds/connectors to transport lower water speed platforms at higher speed; and (3) Develop and experiment with small unmanned amphibious vehicles and swarms with modular payloads. This mid-2020's decision point will set the conditions to begin a program to replace the Survivability Upgraded AAV.

The second highest priority for combat and tactical vehicle investment remains the replacement of the portion of the high mobility, multi-purpose, wheeled vehicle (HMMWV) fleet that is most at risk; those trucks that perform a combat function and are typically exposed to enemy fires. In partnership with the Army, the Marine Corps has sequenced the Joint Light Tactical Vehicle (JLTV) program to ensure affordability while in the first increment replacing about one third (5,500 vehicles) of the legacy HMMWV fleet with modern tactical trucks in conjunction with the fielding of ACV 1.1. The program was certified Milestone C in the summer of 2015. The Marine Corps total Approved Acquisition

Objective (AAO) for HMMWV is 17,500. The Marine Corps approach to HMMWV modernization is composed of three increments. Increment I AAO is 5,500 and is fully funded, with an IOC is planned for FY 2020 and FOC planned for FY 2022. Increment II AAO, if resourced, is 3,591, which will extend procurement into the early-2020s. This increment is focused on replacing M1151 Weapons carriers in the Reserves and Supporting Establishment. Also, it will replace the oldest of our remaining A2 variants (M1123/M1097A2). IOC is planned for FY 2023. Increment III of JLTV will replace remaining legacy HMMWVs and is the subject of future analysis because it involves HMMWVs for which there is no current JLTV variant (i.e. ambulances and HMMWVs which can be replaced by lighter class vehicles). This third increment will be required to fully replace the legacy portion of the Light Tactical Vehicle fleet in the mid to late 2020s.

Marine Air-Ground Task Forces

The focus of our ground modernization efforts continues to be our combat and tactical vehicle portfolio, along with the C2 systems needed to leverage the entire MAGTF once ashore.

Critical to the success ashore of the MAGTF is our ability to coordinate and synchronize our distributed C2 sensors and systems. Our modernization priorities in this area are the Ground/Air task Oriented radar (G/ATOR) and the Common Aviation Command and Control System (CAC2S) Increment I. These systems will provide modern, interoperable technologies to support real-time surveillance, detection and targeting and the common C2 suite to enable the effective employment of that and other sensors and C2 suites across the MAGTF.

The G/ATOR system is on schedule and budget and will soon support air defense, air surveillance, and counter-battery/target acquisition. G/ATOR Block 1 provides the MAGTF a state-of-the-art air defense/surveillance capability. It achieved Milestone C in 2014 and is currently in low rate initial production (LRIP). The first two Block 1 systems were received by the Marine Corps this spring, and are now undergoing testing. G/ATOR Block 2 provides the MAGTF a state-of-the-art counter-battery/target acquisition capability and is in the Engineering and Manufacturing Development phase of acquisition. Funding in this budget request supports the continued development of G/ATOR Block 2 transition to Gallium Nitride module technology, and procurement of three G/ATOR Block 2 systems. Both Block 1 & 2

Systems will reach FOC by 2024. A final evolution of G/ATOR, designed to support the Marine Corps' air traffic control mission, is also planned.

Phase I Limited Deployment Capability of the CAC2S program was achieved in the second quarter of FY 2012 and the initial fielding was complete during fourth quarter FY 2013. Phase 2 addresses the remaining Air Combat Element Battle Management and C2 requirements. Phase 2 achieved a successful Milestone C in FY 2015. IOT&E of the Phase 2 system occurred in the third quarter of FY 2016. Fielding begins the third quarter of FY 2017. The AAO is 50 systems.

Counter Unmanned Aircraft Systems (C-UAS)

The proliferation and technological progression of readily available UASs to threat state and non-state actors have advanced at an unprecedented pace. We anticipate this trend to continue. The reconnaissance and attack capabilities of even smaller UASs represent a growing concern to the Joint Force.

The Marine Corps is pursuing an aggressive plan that fields the most capable, available C-UAS solutions for the warfighter in the near term, while we simultaneously pursue advanced technologies to support an enduring C-UAS capability. The C-UAS lessons gained in today's fight are also directly informing our long-term C-UAS requirements and solutions.

In response to the urgent needs of our forward commanders, we are now fielding available C-UAS capabilities that can detect, track and then attack the threat operator's radio frequency link to their UASs – the Man-Portable Anti Drone System – Kit (MADS-K). The MADS-K is an integrated radar, electro-optical/infra-red optic, and radio frequency (RF) jammer. The Marine Corps has procured nine MADS-K and has taken receipt of the first six. We've also very recently begun deploying these systems.

The Marine Corps is pursuing the integration of a MADS-K onto an MRZR and M-ATV light tactical vehicles. Once successfully integrated, this will provides a capability to detect, track, ID and RF defeat UAVs at the short-halt. Additionally, the Marine Corps is exploring integrating MODI II as the defeat mechanism which provides a more robust capability that can be employed in a dismounted configuration.

Looking forward, the Marine Corps anticipates a "kinetic kill" C-UAS capability will be a necessity. As one potential 'kinetic kill' C-UAS alternative, the Joint Land Force is experimenting with laser weapon systems. This past August, we initiated the Directed Energy

Weapon Review Approval Process with the intent to gain approval to operate a laser, specifically a 2kW Compact Laser Weapon System (CLWS), in theatre.

While lethal lasers have yet to be employed within a ground operational environment, the opportunity to employ the CLWS within an active theater of operation provides an ideal circumstance to learn and better understand the capabilities and limitations of lethal lasers as ground based air defense weapon systems.

The Marine Corps, partnered with the Army's Program Directorate - Counter Rocket Artillery Missile, is pursuing high energy lasers for an operation evaluation in support of Combined Joint Task Force-Operation Inherent Resolve. We envision this initiative to be a "proof of concept" for laser technology and will help inform our C-UAS community of interest if laser weapon systems are a viable near-term solution.

Other Unmanned Aircraft

To meet the demand for persistent, multi-role ISR capability, the Navy and Marine Corps are building a balanced portfolio of manned and unmanned aircraft focused on missions in the maritime environment. The Small Tactical Unmanned Aircraft System RQ-21A Blackjack program is a UAS that provides full motion video, communications relay package and automatic identification systems. The air vehicle's payload bay allows for rapid deployment of signal intelligence payloads. The Marine Corps is actively pursuing technological developments for the RQ-21A system in an effort to provide the MAGTF with significantly improved capabilities. Initiatives include over-the- horizon communication and data relay ability to integrate the system into future networked digital environments; electronic warfare and cyber payloads to increase non-kinetic capabilities; and change detection radar and moving target indicators to assist warfighters in battlespace awareness and force application. RQ-21A entered LRIP in 2013, completed IOT&E in the second quarter of FY 2015, with Full Rate Production deliveries planned for the second quarter of FY 2018.

In this same light, the Marine Corps has entered into the process to complete its three tiered family of UAS with the Joint Requirements Oversight Council's approval of the MAGTF UAS Expeditionary (MUX) Initial Capabilities Document in October 2016. MUX is envisioned to be a multi-mission, long endurance, seabased platform that will enable the MAGTF to provide, complement, or expand a Joint Force or geographic commander's capabilities during the conduct of campaigns, joint forcible entry operations, and crisis

response. The MUX analysis of alternatives will be conducted in FY 2018 and IOC is projected in the mid-2020s depending on the technologies selected to fill the MUX gaps.

Other MAGTF Programs

Individual Marines are the foundation of the Marine Corps, the MAGTF and our expeditionary capability. In addition to the major programs described above, this budget supports the continued delivery of required warfighting capabilities to our individual Marines and our flexible MAGTF structure in a timely and affordable manner. The Marine Corps continues to invest in the weapons, individual protective equipment, tactical radios, training systems, and information technology necessary to ensure an effective and efficient fighting force and keep faith with our commitment to those individual Marines who shoulder the burden and privilege of being America's expeditionary force in readiness.

Conclusion

The Department of the Navy continues to instill affordability, stability, and capacity into the shipbuilding, aviation, and expeditionary programs. Continued congressional support of the Department's plans and budgets will help sustain a viable industrial base. This request begins to lay the ground work for growing warfighting capabilities in the FY 2019 President's Budget, as the Department also makes initial investments in a larger Navy and Marine Corps. We thank you for your continued support of the Navy and Marine Corps and request your support of the FY 2018 President's Budget.

Allison F. Stiller
Principal Civilian Deputy Assistant Secretary of the Navy
Research, Development and Acquisition

On Jan. 20, 2017, Ms. Allison F. Stiller began performing the duties of the Assistant Secretary of the Navy for Research Development & Acquisition (ASN(RDA)). Ms. Stiller also serves as the Principal Civilian Deputy, ASN(RDA). Her responsibilities include oversight and policy for Navy and Marine Corps research, development, and acquisition programs for shipbuilding, aviation, space, weapon systems, and communication systems. This portfolio includes oversight of more than 100,000 people and an annual budget in excess of $50 billion as well as hundreds of technical developments and procurement programs for the Department of the Navy. Ms. Stiller also leads the Department's Senior Executive Acquisition Corps.

Ms. Stiller entered the Senior Executive Service in January 2004. She has spent over 25 years in the Department of Defense's acquisition community. Prior to her current position, Ms. Stiller served as the Deputy Assistant Secretary of the Navy for Ship Programs. In this capacity, she was responsible for executive oversight of all naval shipbuilding and associated weapon systems programs, major ship conversions, and nuclear ship refuelings, as well as the maintenance, modernization and disposal of in-service ships.

Ms. Stiller has served in a number of shipbuilding acquisition positions throughout her career where she led in the development and procurement of complex ship programs in multiple phases of the acquisition life cycle. She served for four years as the Deputy Program Manager in the Amphibious Warfare Program Office, responsible for design, development, acquisition, and fleet introduction of amphibious ships and landing craft. She supervised over 40 individuals and managed four acquisition programs with a total value of $16B. Ms. Stiller also served as Director for Naval and Commercial Construction in the Office of the Assistant Secretary of the Navy for Ship Programs where her responsibilities included oversight of amphibious and auxiliary ship construction and conversion programs, as well as shipbuilding industrial base matters. During her tenure, Ms. Stiller helped develop and promote initiatives that focused the nation's shipbuilding industry towards commercial viability. Ms. Stiller also served as Acquisition Manager in the early phases of the Virginia Class Submarine Program, as well as division director in the SEAWOLF Submarine program during the design and early construction phases of that program.

Ms. Stiller holds a BS in Systems Engineering from the University of Virginia and a MS in Engineering Management from Virginia Tech. She is also a graduate of the JFK School of Government's Senior Executive Fellows Program at Harvard University and the Defense Systems Management College.

Throughout her career, Ms. Stiller's leadership and performance has been recognized by numerous awards including the Presidential Rank Award (Distinguished and Meritorious) and the Department of the Navy's Superior and Meritorious Civilian Service awards.

Ms. Stiller is also the proud ship sponsor for USS MISSISSIPPI (SSN 782).

Lieutenant General Robert S. Walsh
Commanding General, Marine Corps Combat Development Command, and Deputy Commandant, Combat Development and Integration

Lieutenant General Walsh was commissioned a Second Lieutenant from the United States Naval Academy in May 1979. After completing The Basic School he was assigned as an infantry platoon commander in 1st Battalion, 7th Marines. He reported to Pensacola, FL for flight training and was designated a Naval Aviator in October 1981. Upon completion of an assignment to VT-26 as a Selectively Retained Graduate and the F-4 training syllabus he was ordered to VMFA-115 at Marine Corps Air Station Beaufort, SC in November 1983.

While in VMFA-115 he transitioned to the F/A-18 Hornet, attended the U.S. Navy Fighter Weapons School, and made two deployments before assuming duties as a flight instructor at TOPGUN in 1987. He returned to MCAS Beaufort in January 1990 and was assigned to VMFA-251, making two WESTPAC deployments, and was selected as the 1st Marine Aircraft Wing Aviator of the Year.

In July 1993, he reported to the 9th Marine Regiment as the Air Officer. He attended the Air Command and Staff College at Maxwell AFB before reporting to Headquarters, U.S. European Command, Stuttgart, Germany in 1995 where he served in the Plans and Policy Directorate.

In 1998, he returned to MCAS Beaufort for a third tour in Marine Aircraft Group 31 where he served as the Commanding Officer of VMFA-115 and deployed to both the European and Western Pacific Theaters.

He graduated from the National War College in Washington D.C. in June 2002 with a Masters of Science in National Security Strategy. From there he reported to Headquarters, U.S. Marine Corps, where he served in the Aviation Department. After his Branch head tour, Lieutenant General Walsh returned to MCAS Beaufort as the Commanding Officer of Marine Aircraft Group 31 from June 2004 to May 2006.

Following command, he returned to Headquarters, U.S. Marine Corps, as the Assistant Deputy Commandant for Aviation. In May 2008, Lieutenant General Walsh became the Commanding General of the 2d Marine Aircraft Wing and deployed to Operation Iraqi Freedom 09 as the Commanding General of the 2d Marine Aircraft Wing (Forward). In August 2010 he assumed the duties as the Director of Operations, United States Northern Command. In June 2012 he became the Deputy Commanding General, Marine Corps Combat Development Command.

In July 2013, Lieutenant General Walsh assumed duties as Director, Expeditionary Warfare Division for the Chief of Naval Operations. In August 2015, Lieutenant General Walsh became the Commanding General, Marine Corps Combat Development Command; Commander, Marine Corps Forces Strategic Command, and the Deputy Commandant for Combat Development and Integration.

Vice Admiral William K. Lescher
Deputy Chief of Naval Operations, Integration of Capabilities and Resources

A native of Highland Park, Illinois, Vice Adm. Bill Lescher holds systems and aeronautical engineering degrees from the Naval Academy and Naval Postgraduate School/Test Pilot School Cooperative program respectively and a Master of Business Administration from the Harvard Business School.

Lescher commanded the Vipers of Helicopter Anti-Submarine Light (HSL) Squadron 48, the HSL-40 Airwolves and the Atlantic Fleet Helicopter Maritime Strike Wing. Between command of the Vipers and Airwolves, he was executive officer of Mine Countermeasures Command and Control Ship USS Inchon (MCS 12). As a flag officer, he commanded Expeditionary Strike Group 5/Task Forces 51/59 in Bahrain, leading the Iwo Jima Amphibious Ready Group (ARG)/24th Marine Expeditionary Unit (MEU); Peleliu ARG/15 MEU; Kearsarge ARG/26 MEU and the afloat forward staging base USS Ponce (AFSB(I)-15) in execution of multiple contingency response and counter-terrorism missions and theater security cooperation exercises spanning the Naval Forces Central Command region.

Lescher's initial operational tours were with the Lamplighters and Swampfoxes of HSL-36 and 44, deploying primarily to the Middle East/Central Command region aboard USS O'Bannon (DD 987), USS Clark (FFG 11), USS Capodanno (FF 1068) and USS Elrod (FFG 55).

Ashore, his assignments included leading the SH-60B Sea Hawk developmental test team as an engineering test pilot at the Naval Air Warfare Center, where he launched the first guided missiles from a Navy helicopter; head programmer in the Office of the Chief of Naval Operations Space, Command, and Control and Information Warfare Directorate; acting director of the Office of the Under Secretary of Defense Comptroller Budget and Appropriations Affairs Directorate; head of the Joint Staff Quadrennial Defense Review Office; and Joint Staff Program and Budget Analysis Division chief. Shore flag assignments include director, operations division, Department of the Navy Budget Office; Joint Staff deputy director for resources and acquisition; and deputy assistant secretary of the Navy for budget.

Lescher graduated with distinction from fixed wing, rotary wing and Naval Test Pilot School training. He has been recognized as the Association of Naval Aviation's HSL Pilot of the Year, the Naval Helicopter Association's Regional Pilot of the Year and the Naval Air Warfare Center's Rotary Wing Test Pilot of the Year. The units in which he has served have earned the Joint Meritorious Unit Award, Navy Unit Commendation, Navy Meritorious Unit Commendation, Navy "E" Ribbons and Theodore Ellyson award.

Updated: 13 April 2017

DOCUMENTS SUBMITTED FOR THE RECORD

MAY 24, 2017

EXECUTIVE SUMMARY
2016 Navy Force Structure Assessment (FSA)
14 DECEMBER 2016

INTRODUCTION:
Navy's Force Structure Assessment (FSA) was developed in an effort to determine the right balance of existing forces, the ships we currently have under construction and the future procurement plans needed to address the ever-evolving and increasingly complex threats the Navy is required to counter in the global maritime commons. This FSA assumes that the future plans for our Navy, in ship types and numbers of ships, continues to replace the ships we have today with ships of similar capability and in similar numbers as we transition to the future Navy – it does not address potential options that may come out of the ongoing review of the potential Future Fleet Architecture studies that were directed by Congress and completed in October 2016. As we evaluate the options presented in these studies and move to include them in our plans for tomorrow's Navy, this FSA will need to be updated to reflect those changes that are determined to be most beneficial to meeting the Navy's missions of the future.

The number and mix of ships in the objective force, identified by this FSA, reflects an in-depth assessment of the Navy's force structure requirements – it also includes a level of operational risk that we are willing to assume based on the resource limitations under which the Navy must operate. While the force levels articulated in this FSA are adjudged to be successful in the scenarios defined for Navy combat, that success will likely also include additional loss of forces, and longer timelines to achieve desired objectives, in each of the combat scenarios against which we plan to use these forces. It should not be assumed that this force level is the "desired" force size the Navy would pursue if resources were not a constraint – rather, this is the level that balances an acceptable level of warfighting risk to our equipment and personnel against available resources and achieves a force size that can reasonably achieve success.

SUMMARY OF FINDINGS:
Since the last full FSA was conducted in 2012, and updated in 2014, the global security environment changed significantly, with our potential adversaries developing capabilities that undermine our traditional military strengths and erode our technological advantage. Within this new security environment, defense planning guidance directed that the capacity and capability of the Joint Force must be sufficient to defeat one adversary while denying the objectives of a second adversary.

PROCESS:
The 2016 FSA started with a request to the Combatant Commanders (CCDRs) to provide their unconstrained desire for Navy forces in their respective theaters consistent with meeting the demands of the Defense Planning Scenarios as reflected in their FY17 Global Force Management (GFM) submissions. To fully resource these platform-specific demands with very little risk in any theater while supporting enduring missions, ongoing

operations and setting the theater for prompt warfighting response, Navy would require a 653-ship force. A force of this size would fundamentally require Navy to double its current annual budget, which is essentially unrealistic in both current and expected future fiscal environments. Therefore, this demand signal had to be balanced against likely future resource levels and risk assessments to provide an achievable force level to which Navy could aspire.

Our first step in bringing this force down to a size that we could defend required us to engage with the Navy Component Commanders (NCC) in each theater of operations to understand the reasoning behind their requested force levels. In some cases, we identified instances where forces were being requested for redundant missions that could be covered by consolidating force requirements within that theater. In addition, there were instances where the missions, for which forces were being requested, were transitory in nature and did not require enduring force levels to be assigned to that NCC. While this reduced the force demand somewhat, it still significantly exceeded the Navy's ability to resource.

The next filters we applied injected presence risk by not meeting CCDR demands for steady state forces to conduct ongoing operations (i.e. – Theater Security Operations, Counter Terrorism and Counter Illicit Trafficking efforts) and to "set the theater". These actions ultimately resulted in a 459-ship force that complied with approved combinations of challenges for force sizing and shaping. This force also far exceeds the Navy's ability to resource, and while it is the force needed to achieve Navy's missions with reasonable expectations of success without incurring significant losses, it was unrealistic for Navy to assume we would have the resources to aspire to a force of this size with this mix of ships. Therefore, we had to look at additional areas where we could take risk in mission success or look at new ways to accomplish the missions we have been assigned – this was the objective of the Future Fleet Architecture studies and they will, likely, change the calculus on both the way we fight our fleet, and what force structure is best suited to these new ways of accomplishing the same missions. Pending the outcome of the assessment of the ideas surfaced in these studies, we had to look at warfighting risks that would be necessary to bring the FSA force levels down to a point where they could be better aligned to the resources available.

WARFIGHTING RISK AND THE FORCE STRUCTURE OBJECTIVE:

In order to assess warfighting risk and identify where margins existed that could be reduced, we did an in-depth review and analysis of "what it takes to win", on what timeline, and in which theater, for each major ship class. The goal of this phase of the analysis was to determine the minimum force structure that:

- complies with defense planning guidance directed combinations of challenges for force sizing and shaping;
- meets approved Day 0 and warfighting response timelines;

- delivers future steady state and warfighting requirements, determined by Navy's analytic process, with an acceptable degree of risk (e.g. – does not jeopardize joint force campaign success).

The following table shows the results of the 2016 FSA – an objective force of 355 ships – and the changes from the 2014 FSA update.

Type / Class	2014	2016
Aircraft Carriers	11	12
Large Surface Combatants	88	104
Small Surface Combatants	52	52
Amphibious Warfare Ships	34	38
Attack Submarines	48	66
Guided Missile Submarines	0	0
Ballistic Missile Submarines	12	12
Combat Logistics Force	29	32
Expeditionary Fast Transport/High Speed Transport	10	10
Expeditionary Support Base	3	6
Command and Support	21	23
Total	**308**	**355**

In executing this assessment, we were careful to ensure each of what amounted to 11 separate "ship class level" FSAs did not cause the accumulated risk to the force to pass into a realm where we were uncertain we could still "win". In each "ship class level" effort, the most stressing requirements from each set of integrated scenarios were used to identify the minimum force structure required to comply with strategic guidance.

- A minimum of 12 Aircraft Carriers are required to meet the increased warfighting response requirements of the Defense Planning Guidance Defeat/Deny force sizing direction.
- 104 Large Surface Combatants deliver increased air defense and expeditionary BMD capacity and provide escorts for the additional Aircraft Carrier.
- 52 Small Surface Combatants are required to meet Defeat/Deny challenges and support ongoing Counter Terrorism, Counter Illicit Trafficking, and Theater Security Cooperation/Building Partnerships efforts.

- 66 Attack Submarines provide the global presence required to support national tasking and prompt warfighting response.
- The additional logistic ships support the additional Aircraft Carrier and Large Surface Combatants.
- Six Expeditionary Support Bases provide persistent and flexible capabilities for Counter Terrorism and Counter Illicit Trafficking efforts.
- The Command and Support inventory is mostly driven by platform specific studies of presence and warfighting requirements for the unique missions of these ships. The rise to 23 represents two additional surveillance ships.

THE SECRETARY OF THE NAVY
WASHINGTON DC 20350-1000

February 9, 2017

MEMORANDUM FOR SECRETARY OF DEFENSE

SUBJECT: United States Navy Accelerated Fleet Plan

Today's Navy is under significant strain resulting from the imbalance between the size of the fleet, the operational demands placed upon the fleet, and the impact resulting from time and resource constraints on the maintenance, modernization, and readiness of the fleet. Our most immediate challenge to restore the health of the current force can be alleviated by making the investments in readiness as identified in the Department of the Navy's Unfunded Priorities List. The growing operational demands of an increasingly complex global security environment require further investments to increase the size and capability of the fleet.

Attached you will find a white paper that offers a path to expeditiously build capacity and improve lethality of the fleet. This paper offers a first step towards a framework to develop strategic guidance and identify the investments needed to reinvigorate our naval forces.

As we chart our course, there are three factors that drive how rapidly the Navy can increase its force structure: the impact on operations and readiness caused by prolonged deficits to fleet size; optimal rates of production that would yield greatest efficiencies and cost benefits; and affordability constraints imposed today upon our procurement and in the future upon our operations. These factors and the anticipated national security and defense strategies will be key components of the analysis regarding the size of our future fleet. Breaking from the historically budget driven process, the Navy has completed an internal review that has attempted to answer a very different question - - "How rapidly could the Navy increase its force size guided by operational requirements, industrial base capacity, and good stewardship of the taxpayers' money?" In answering that question, the accelerated fleet plan provides one comprehensive view that encompasses the great number of investment decisions required to grow the fleet.

The elements presented in this proposal are ambitious by some measures – this proposal could be considered as a "bounding case" for a future plan to recover from a long period of deficit investment. The argument to increase the size of our fleet will continue to be challenged by reluctance to increase spending on national defense. Accordingly, the Department of the Navy is fully committed to ensuring that every investment toward our future fleet is backed by credible analysis and provides the best value for the taxpayers' dollars.

The Chief of Naval Operations and I look forward to discussing this plan with you at your earliest opportunity.

Sean J. Stackley
Acting

Attachments:
As stated

UNITED STATES NAVY ACCELERATED FLEET PLAN

The U.S. Navy protects America from attack and preserves America's strategic influence in key regions of the world. By being globally present, capable and ready, the Navy-Marine Corps team provides timely, agile, and effective options to national leaders as they seek to advance American security and prosperity. The Navy operates beyond the horizon, far from our shores. It provides the undersea leg of our strategic deterrent, and signals American resolve to control the seas and project land and air forces ashore. Ideally, this combat capability and inherent responsiveness allow the Navy to deter conflict. But if conflict breaks out, the U.S. Navy remains ready to conduct prompt and sustained combat at sea to achieve the nation's goals.

Sustaining the operations that carry out the Navy's mission has placed a significant strain on the fleet. The Navy has also forgone necessary investments that posture it for success in an increasingly complex and fast-paced security environment. To address these realities, the Navy requires immediate investments to restore the health of what it has today. And looking forward, multiple recent and independent analyses conclude that the Navy must grow, both in number and capability. Doing so as quickly as possible will shore up and maintain U.S. influence abroad, now and in the future.

Why an Accelerated Fleet Plan? A Return to Naval Competition

The post-cold war era of uncontested naval supremacy is over. In the maritime environment, the most capable potential competitors are Russia and China, both of whom are enhancing their naval power. Russian defense spending has more than doubled since 2000, and Chinese defense investments have quadrupled. Much of this growth has been directed toward their navies.

Russia's latest maritime doctrine makes clear why this is so. It emphasizes Russia's intent to counter the North Atlantic Treaty Organization, "integrate Crimea and the Sevastopol naval base into the Russian economy, and … reestablish a permanent Russian Navy presence in the Mediterranean." As well, Russia has begun an aggressive buildup of forces in the Arctic region. In support of these efforts, Russia has adopted a broad shipbuilding plan that includes new classes of submarines, destroyers, frigates, and a next generation aircraft carrier. All are intended to incorporate the latest advances in weapons, sensors, command and control, and deception technologies. Russia also continues to develop an advanced fighter jet akin to the most advanced

U.S. fighter aircraft. The Russian Navy is flexing its growing muscle as it returns to places it has not operated in for decades, sailing its aircraft carrier in the Mediterranean Sea, its submarines off of America's Atlantic Coast, and firing missiles into Syria from the Mediterranean and Caspian Seas.

The Chinese Navy is also quickly advancing, and is the fastest growing navy of any major power. Chinese shipyards have more than doubled their production of destroyers and frigates in the past decade; some analysts project that China will have more combat ships than the U.S. by this decade's end. These more modern ships are being complemented by increasingly capable aircraft and long range cruise missiles, several aircraft carriers (including the first to be domestically produced), ballistic missile submarines, and possibly an amphibious ship, all pushing further out into the oceans to support China's expansive maritime claims. These actions are consistent with President Xi Jingping's exhortation that China "continually do more to promote China's efforts to become a maritime power."

As Russia and China put more, and more capable, ships to sea, other challenges persist. North Korea's provocative behavior continues, as do its efforts to advance the size and sophistication of its ballistic missile program. Iran remains, according to the intelligence community, the foremost state sponsor of terrorism, especially within its own region. At sea, the Iranian Navy, in concert with irregular Islamic Revolutionary Guard Corps—Navy (IRGC-N) forces, maintains a fleet of fast attack and small boats that routinely engage in harassing and sometimes dangerous behavior in the Arabian Gulf, creating tension and opportunities for miscalculation. They also continue to invest in mines and multiple types of missiles that pose threats in constrained waterways. And terrorism by the Islamic State of Iraq and Syria and other extremist groups remains a threat to Americans and their allies and partners around the globe.

The Navy's Readiness Debt

In the face of multiple challengers of increasing sophistication, the demand for U.S. Naval forces around the world is rising. For over a decade, the fleet has sustained a very high operational tempo. The effects manifest themselves through increased wear and tear on Sailors and their families, and on Navy ships and naval aircraft. As deployments are extended beyond what was expected, Sailors miss planned rotations or schools and training, and restorative time with their families. Intense operations and increased use are also causing naval equipment to

degrade faster than anticipated. For example, the average amount of repair and maintenance work for ships in private shipyards is exceeding projections by 35 percent. Maintenance for older aircraft is taking almost twice as long as planned to restore those planes to safe flying status.

The fleet's continued high operational tempo represents just one aspect of the "triple whammy" facing the Navy. Operational stress has been exacerbated by overall funding reductions and persistent uncertainty about when budgets will be approved. The combination of these three factors -- high operational demand, and insufficient and unpredictable funding -- has resulted in Navy incurring substantial "readiness debt." That debt is manifest now, and, absent change, will only get worse in the future.

The Navy the Nation Needs and Expects

In order to pay down that debt and restore a forward, ready, and capable fleet that can meet the demands of the nation, the Navy must restore *wholeness*. Wholeness requires an appropriately sized and well trained Navy Team; modern and well-maintained platforms; sufficient numbers of repair parts and weapons; and the necessary infrastructure to support successful mission execution.

Restoring Readiness

The Navy's most critical immediate concern is restoring and improving operational and warfighting readiness. To address this, the Navy and Marine Corps have submitted a list of prioritized actions (called the Unfunded Priorities List) that could be immediately executed to alleviate on our most pressing concerns. The funding for these projects would allow ships and crews to sail for training; pilots to fly the hours they need to be proficient warfighters; make needed improvements in cybersecurity and information warfare; support training and weapons development; and increase planning time for our Sailors and their families to move from one homeport to another as they change stations.. It would also enable the Navy to complete critical and backlogged maintenance and repairs, and to restore parts supplies – to get ships to sea instead of alongside the pier.

While restoring the health of the current fleet is the Navy's top priority, it is not enough to ensure the Navy's continued success. As potential adversaries advance, the Navy must as well. To do so, the Navy needs to address shortfalls in programs that modernize its existing ships,

aircraft, and weapons to make them more capable. It also needs to build those advances into its new platforms, and to buy more of them. Our Unfunded Priorities List includes items to start enhancing our existing systems and platforms this year; we will identify additional modernization investments as part of our update to the FY 2018 President's Budget Request. That List also includes some of the FY 2017 ship and aircraft purchases that are described in more detail in Appendix A.

Build Capacity and Improve Lethality

The Navy's current budget, as amended per the discussion above, would set a course to restore wholeness. But more is needed, and more quickly. The Navy's most recent force structure assessment concludes that addressing the current and future threats to U.S. security will require a larger Navy of about 350-360 ships. Accelerating the Navy's progress toward that goal would relieve some of the current pressure on the fleet, enhance the credibility of naval forces seeking to deter potential aggression, and create opportunities to drive down costs.

Table 1 depicts the maximum number of additional ships and aircraft that the Navy could purchase over the next seven years to get to required fleet levels as quickly as possible, relative to the current budget plan. This accelerated plan could provide for an additional 29 ships and 342 aircraft over the next seven years.

Table 1. Proposed Procurement Increases over the FY17 President's Budget

	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
FY17 President's Budget (ships)	7	8	7	8	8	10	11	59
Accelerated plan	*12*	*12*	*11*	*13*	*13*	*13*	*14*	*88*
Delta	+5	+4	+4	+5	+5	+3	+3	+29
FY17 President's Budget (aircraft)	86	95	101	76	93	98	107	656
Accelerated plan	*137*	*140*	*156*	*144*	*142*	*145*	*134*	*998*
Delta	+51	+45	+55	+68	+49	+47	+27	+342

The Navy's accelerated plan, as detailed further in Appendix A, sets the Navy on a path that is achievable with low levels of technical risk, reduces future costs, and provides capabilities that the Navy is highly confident will remain relevant over time. These increases would require a projected investment of $61.8 billion over the next five years beyond the FY2017 President's Budget request. For the two years that follow, total shipbuilding construction and aviation procurement would require $90.5 billion. While this is a large number, through the use of multi-

year or block buy contracting approaches and purchases set at the most efficient production levels, the Navy could achieve substantial per unit cost savings - millions to billions of dollars. The predictability and stability inherent in larger purchase quantities would also give the Navy's industrial partners the confidence to invest in people and improvements to production processes. That in turn would lead to badly needed ships and aircraft getting to the fleet faster and at lower cost.

Buying more ships and aircraft is necessary but will not be sufficient. Just like automobiles, ships and aircraft need scheduled maintenance to stay fit to fight, and they must also be periodically modernized to stay ahead of the threat. Naval bases will also need new berths and piers, additional shore power, and other infrastructure. And most importantly, as new ships and aircraft are fielded, the Navy must recruit, train, and retain all of the Sailors to operate and maintain them. Those costs are not reflected in this paper, but will be included into future, more detailed budget conversations.

The additional investment proposed here would also reinvigorate what has become a fragile industrial base. History shows that the nation needs a strong and vibrant foundation of industrial capability and capacity -- able to surge if needed -- to ensure that our Sailors are never in a fair fight. That industrial health is an ever more important factor underpinning the Navy's ability to respond quickly in an increasingly uncertain and volatile security environment.

Conclusion

The Navy needs to restore readiness today, and modernize and build for the future. There has been a persistent gap between the demands on the Navy and the ability of the current and planned fleet to meet them. That gap has imposed stress on Sailors and their families. It has run down our ships and aircraft, and precluded the full range investments to keep the Navy ahead of its potential competitors. Increasing investments in current and future readiness, coupled with accelerated production of ships, aircraft, and other key capabilities, will ensure that America's current and future leaders will have the timely, agile, and effective options they need to protect the nation's interests at home and around the world.

APPENDIX A
Readiness and the Acceleration of Ship and Aircraft Production

As the Navy explored opportunities to accelerate enhancements to fleet capacity and capability, it did so with four basic principles in mind. First, all proposed investments would be achievable; that is, there must be sufficient time and industrial base capacity to perform the proposed work. Second, cost estimates would be based on quantities that allow for the most economic prices, enabled by stable and predictable workflow and optimized supply lines. Third, Navy plans would enhance that predictability by pursuing continued, and where applicable expanded, use of Multi-Year Procurement and block buy contracting approaches. These methods substantially reduce per unit cost by creating long-term production and supplier efficiencies not available through normal annual procurement contracts. Fourth, to enhance the reliability of proposed timelines and cost estimates, where appropriate, the Navy would leverage active production lines to the maximum extent possible, relying on established designs, defined production schedules, known technical baselines, an active supplier base, and clear and well understood warfighting requirements. These principles are reflected in the analysis that follows. Immediate steps to restore fleet readiness are captured in our Unfunded Priorities List, which has been provided separately. That list includes some of the additional ships and aircraft described below.

Accelerating ship and aircraft procurement

While the funding proposed above will provide immediate relief to the fleet, putting the Navy on a sustainable long term path to meet operational demands will require more, and more capable, platforms. The Navy's specific proposals to accelerate shipbuilding and aircraft production, in support of both Navy and Marine Corps (naval) missions, follow.

Shipbuilding

The Navy currently has active production lines for multiple ship classes (SSN 774, DDG 51, CVN 78, and Small Surface Combatants), and is finishing series production on the last ships of another three ship classes (LPD 17, T-EPF, and T-ESB). Over the next six years, the Navy is also starting to design and build several new classes of ships, designated as the SSBN 826 COLUMBIA class (previously SSBN(X)), LHA-8, LX(R), T-AO 205 (formerly T-AO(X)), and

T-ATS.

Many of these ships (SSN 774, CVN 78, Small Surface Combatants, and DDG 51) have already-planned capability upgrades to provide needed warfighting capability. Production rates for these modernized classes can be expanded almost immediately at substantially reduced technical risk and cost compared with new design classes. Of the three ship classes approaching the end of planned production runs (LPD 17, T-EPF and T-ESB), additional ships can also be procured quickly and affordably, leveraging existing active supplier and production lines.

Accelerating the new design ship classes will prove more challenging. The imperative to recapitalize the undersea leg of America's nuclear triad has already caused the Navy to compress the SSBN 826 class construction schedule as much as is feasible. The remaining classes (LHA-8, LX(R), T-AO 205, and T-ATS) must complete their detailed design and first-of-class construction phases, at which point they can also be procured at faster rates.

Exploratory analysis indicates that existing shipyards have sufficient production capacity to accept additional orders for ships already under construction. This applies to DDG 51, Small Surface Combatants, LPD 17, T-EPF and T-ESB classes in particular. SSN 774 and CVN 78 classes have additional shipyard and supplier constraints that may limit their ability to expand production rates as rapidly as other classes in the near term; however, the Navy is continuing to thoroughly explore, with the assistance of our industrial partners, opportunities to optimize the integrated build plans already underway. Table 2 below provides additional detail on proposed adjustments.

Table 2. Ship procurement quantities - FY2017 President's Budget vs. Accelerated Plan

		FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
CVN	PB-17		1					1	2
	Accelerated plan		*1*				*1*		*2*
DDG-51FltIIA	PB-17								0
	Accelerated plan	*1*							*1*
DDG-51FltIII	PB-17	2	2	2	2	2	2	2	14
	Accelerated plan	*2*	*3*	*3*	*3*	*3*	*3*	*3*	*20*
LCS	PB-17	2	1						3
	Accelerated plan	*2*							*2*

SSC	PB-17			1	1	2	2	2	8
	Accelerated plan		*2*	*2*	*2*	*2*	*2*	*2*	*12*
SSN-774	PB-17	2	2	2	2	1	2	2	13
	Accelerated plan	*2*	*2*	*2*	*2*	*2*	*3*	*3*	*16*
SSBN(X)	PB-17					1			1
	Accelerated plan					*1*			*1*
LPD-17	PB-17								0
	Accelerated plan	*1*							*1*
LX(R)	PB-17				1		1	1	3
	Accelerated plan			*1*	*1*	*1*	*1*	*1*	*5*
LHA Flt I	PB-17	1							1
	Accelerated plan	*1*			*1*			*1*	*3*
T-AO 205	PB-17		1	1	1	1	1	1	6
	Accelerated plan	*1*	*1*	*1*	*2*	*2*	*2*	*2*	*11*
AS(X)	PB-17							1	1
	Accelerated plan								*0*
T-AGOS(X)	PB-17						1		1
	Accelerated plan					*1*		*1*	*2*
T-ATS(X)	PB-17		1	1	1	1	1	1	6
	Accelerated plan	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*7*
T-EPF	PB-17								0
	Accelerated plan	*1*	*1*						*2*
T-ESB	PB-17								0
	Accelerated plan		*1*	*1*	*1*				*3*
Total	**PB-17**	**7**	**8**	**7**	**8**	**8**	**10**	**11**	**59**
	Accelerated plan	***12***	***12***	***11***	***13***	***13***	***13***	***14***	***88***
	Delta	**+5**	**+4**	**+4**	**+5**	**+5**	**+3**	**+3**	**+29**

As reflected above, the Navy proposes increasing minimum production rates to get to the required fleet size expeditiously and at best value. Specifically, the Navy would accelerate production of:

- CVNs to one ship every 3.5 (vice 5) years, and to contract for them two at a time (starting with CVNs 80 and 81) until reaching a steady state inventory of 12. Delivery of CVNs 81, 82 and 83 would be accelerated by one, two, and five years, respectively. The Navy

projects this would result in savings of over $1.3 billion on the first ship, with significant potential for further savings on subsequent hulls.

- **SSNs** to two boats per year, plus a third boat in years that would limit impact to SSBN 826 Columbia class. The SSN 774 class is also executing its third successful Multi Year Procurement contract, an approach the Navy would seek to continue.
- **LHAs** to one ship every three (vice four to five) years, and faster transition to the **LX(R)**. To meet mission needs, the Navy requires 38 amphibious ships: 12 LHA-8 (and prior)-class ships, 13 LPD 17-class ships, and 13 LX(R)-class ships. To achieve this as quickly as possible, the Navy proposes to procure an additional, final LPD 17-class ship (LPD 29) and then accelerate procurement of the LX(R). The Navy would seek to transition the LX(R) program to a Multi-Year Procurement contract as soon as feasible, generating expected savings of between 8 and 10 percent (c. $2 billion). Producing LHAs on three year centers would accelerate production learning, create incentives for private investments in facilities upgrades, and enable economic order quantity purchases of equipment and reduce overhead costs; cumulatively, these could reduce the cost per ship by as much as 11 percent, and would also accelerate the delivery of USMC Joint Strike Fighter (F-35B)-capable amphibious ships to the fleet.
- **Small Surface Combatants** to two ships every year after LCS is completed.
- **Large Surface Combatants** to three (vice two) ships every year, using the existing Multi Year Procurement model to compete additional blocks of 15 ships from the current DDG 51 shipyards until the class build plan is completed. The Navy estimates that this could reduce expected costs by up to six percent ($1.7 billion); and
- **T-AO 205** to two (vice one) ship per year once the lead ship is completed in FY2020. In addition to providing a more combat-ready double-hulled design to more quickly replace vulnerable existing single-hull designs, the higher build rate would result in expected savings of over $1 billion across the class.

The cost of adding 29 Battle Force ships over the next seven years to the current Navy shipbuilding plan would require about $30 billion more over the next five years, and about $55 billion in total ship construction funding in fiscal years 2022 and 2023. However, doing so at the accelerated rates and employing the contracting strategies described above would result in

billions of avoided costs. The projected amounts of new construction funding in the Shipbuilding Construction, Navy (SCN) appropriation to support the Navy's proposed plan are detailed below.

Table 3. Funding required for accelerated ship procurement, FY2017-2023
(Then-Year $ Millions)*

	FY17	FY18	FY19	FY20	FY21	FY22	FY23
CVN	$2,663	$5,031	$2,496	$3,391	$4,057	$3,287	$4,472
DDG-51 Flt IIA	$433	$0	$0	$0	$0	$0	$0
DDG-51 Flt III	$3,211	$4,968	$5,265	$5,148	$4,788	$4,823	$5,399
LCS	$1,125	$0	$0	$0	$0	$0	$0
SSC	$0	$1,653	$1,503	$1,516	$1,541	$1,568	$1,597
SSN 774	$4,955	$5,305	$7,647	$8,088	$7,568	$8,645	$9,116
SSBN (X)	$773	$841	$2,999	$1,474	$4,238	$4,261	$4,041
LPD 17	$1,844	$0	$0	$0	$0	$0	$0
LX(R)	$0	$0	$1,550	$1,606	$1,626	$1,644	$1,669
LHA Flt1	$1,623	$1,711	$0	$1,763	$1,835	$288	$1,740
T-AO 205	$620	$520	$624	$1,046	$1,090	$1,046	$1,048
T-AGOS	$0	$0	$0	$0	$355	$0	$310
T-ATS(X)	$75	$76	$78	$79	$75	$76	$83
T-EPF	$216	$220	$0	$0	$0	$0	$0
T-ESB	$68	$522	$590	$600	$0	$0	$0
Accelerated plan	*$17,606*	*$20,847*	*$22,751*	*$24,712*	*$27,175*	*$25,639***	*$29,475***
President's Budget 2017	$14,424	$16,674	$16,163	$16,828	$16,795	N/A	N/A
Delta	$3,182	$4,173	$6,588	$7,884	$10,380	$25,639**	$29,475**

* Costs include new construction battle force ships only, not outfitting, post-delivery, completion of prior year shipbuilding, or refueling overhaul.
** Because the PB 2017 only extended through FY2021, the FY22 and FY23 columns represent total SCN funding for those years to support the accelerated plan.

The Navy would continue to seek opportunities to reduce costs and reduce schedule pressures still further through the use of other financial and acquisition tools and strategies, such as authorization to purchase multiple shipsets of material at the beginning of a multi-ship block construction and selective strategic bulk buy procurements of long lead materials. The Navy would also look to leverage tools such as Advance Construction and Continuous Production where applicable, and to employ innovative material procurement strategies that take advantage of favorable conditions in commodities markets. Finally, the Navy has been able to create robust

competitive markets for several ship classes, including the DDG 51, LHA-8 and T-AO 205 classes and Small Surface Combatants. This has kept costs down and substantially improved production efficiencies. To grow the fleet rapidly and affordably, the Navy would seek to retain and expand these competitive markets to the greatest extent possible.

While the Navy needs additional ships as quickly as is feasible, it also must ensure that new platforms' combat and command, control, and communications systems are postured to address rapidly evolving threats. The Navy has a robust modernization plan that includes the fielding of new Air and Missile Defense Radars, Enterprise Air Surveillance radars, electronic warfare systems, and shipboard satellite, communications, cyber security and computer network systems for new construction ships. While some early risk would exist as first-of-kind installations are completed in ships already under contract, Navy analysis indicates that this sector is robust enough to fully support an accelerated shipbuilding procurement plan, and -- as with shipbuilding -- at reduced cost. The Navy would seek to cut costs still further in this area by extending the submarine force's use of standardized designs that enable common hardware to future surface ships as well.

Finally, while most are not part of the Battle Force inventory described above, the Navy operates a support, logistics and Maritime Prepositioning Fleet of 64 ships, all of which will reach their end of service life over the next two decades. These ships are a disparate collection of unique, special mission and special purpose ships that were built with systems and technologies that are, in many cases, out of date and inefficient to operate. Recapitalizing the sealift fleet into a common, modern and efficient propulsion and modular, as-common-as-possible hull design over the next two decades would save the Navy substantial day-to-day operating costs, build a necessary sealift fleet for the rest of the 21st century, and engage a segment of the shipbuilding industrial base that would otherwise not be involved in expanding the Navy's battle fleet.

Aircraft

Some of the additional ships envisioned in an expanded fleet will embark aviation elements. These fixed, tilt-rotor, and rotary-wing aircraft conduct numerous missions that range from strike, intelligence, surveillance and reconnaissance, electronic warfare, air-to-air combat, close air support and air-to-ground attack, logistics and resupply, and command and control. To

meet these needs, as well as maintain additional airframes to support scheduled and unscheduled maintenance and major modifications, the Navy proposes to buy an additional 342 Navy and Marine Corps aircraft beyond the current plan.

The FY2017 President's Budget proposed a reduction to nine carrier air wings (CVNs) in order to better align aircraft inventories with available aircraft carriers. As the Navy seeks to increase its carrier fleet to a deployable fleet of ten or more, this wing would need to be reestablished when the 12th carrier delivers. (A CVW is composed of strike fighter, electronic attack, command and control, rotary and onboard delivery aircraft.) Other non-carrier based platforms would also enhance the Navy and Marine Corps' warfighting capabilities.

Table 4 depicts an accelerated aircraft procurement plan that buys aircraft at efficient rates within existing manufacturing capacity. Aircraft production lines that have the greatest amount of unused capacity include F-35, F/A-18 E/F, V-22 (both CMV-22 and MV-22), MQ-4C, E-2D, and KC-130J. As with shipbuilding, the Navy would intend to use Multi-Year Procurement (MYP) contracts and block buys to achieve additional savings, expanding upon current efforts to enter into a third MYP contract for V-22 and a second MYP contract for E-2D.

Table 4. Aircraft procurement quantities - FY2017 President's Budget vs. Accelerated Plan

If aircraft are procured at the production rates reflected in Table 4, potential impacts include:

		FY17	FY18	FY19	FY20	FY21	FY22	FY23	TOTAL
AH-1Z	PB-17	24	27	27					78
	Accelerated plan	*27*	*27*	*27*					*81*
CH-53K	PB-17	2	4	7	13	14	21	24	85
	Accelerated plan	*2*	*6*	*7*	*11*	*14*	*24*	*24*	*88*
CMV-22B	PB-17		6	6	6	6	6	6	36
	Accelerated plan		*10*	*10*	*10*	*10*	*7*		*47*
MV-22B	PB-17	16				8	8	8	40
	Accelerated plan	*19*	*9*	*9*	*9*	*9*	*5*		*60*
C-40A	PB-17						3	1	4
	Accelerated plan	*4*							*4*
E-2D	PB-17	6	5	3	4	5	5	5	33
	Accelerated plan	*6*	*7*	*7*	*7*	*7*	*7*	*8*	*49*
EA-18G	PB-17								0
	Accelerated plan							*18*	*18*
F/A-18E	PB-17	2	14						16
	Accelerated plan	*12*	*8*	*20*	*14*	*12*	*12*		*78*
F/A-18F	PB-17								0
	Accelerated plan	*14*	*16*	*4*	*10*	*12*	*12*		*68*
F-35B	PB-17	16	20	20	20	21	21	21	139

	Accelerated plan	*19*	*23*	*23*	*23*	*30*	*35*	*37*	*190*
F-35C	PB-17	4	6	12	18	24	24	24	112
	Accelerated plan	*6*	*12*	*18*	*24*	*30*	*30*	*30*	*150*
KC-130J	PB-17	2	2	2	2	2	2	7	19
	Accelerated plan	*4*	*5*	*5*	*5*	*5*	*5*	*5*	*34*
MQ-4C	PB-17	2	3	3	5	6	4	4	27
	Accelerated plan	*2*	*5*	*5*	*5*	*6*	*6*	*6*	*35*
MQ-8C	PB-17	1	2	2	2	2	2		11
	Accelerated plan	*1*	*2*	*2*	*2*	*2*	*2*		*11*
P-8A	PB-17	11	6	13					30
	Accelerated plan	*17*	*10*	*13*	*18*				*58*
T-44C RPL	PB-17						2	6	8
	Accelerated plan							*6*	*6*
UC-12W	PB-17							1	1
	Accelerated plan	*4*							*4*
VH-92A	PB-17			6	6	5			17
	Accelerated plan			*6*	*6*	*5*			*17*
TOTAL	**PB-17**	**86**	**95**	**101**	**76**	**93**	**98**	**107**	**656**
	Accelerated plan	***137***	***140***	***156***	***144***	***142***	***145***	***134***	***998***
	Delta	+51	+45	+55	+68	+49	+47	+27	+342

- Increasing F/A-18 E/F production results in 130 additional aircraft by FY22, and helps mitigate the current strike-fighter inventory shortfall as older F/A-18 E/Fs are modernized with their service life-extended. Additionally, rapidly replacing legacy F/A-18 C/Ds with more modern and capable strike-fighters results in an expected cost avoidance of approximately $290 million.
- Increasing MQ-4C production to 6 aircraft per year by FY2021 (completing production by FY2028, five years earlier than the current plan), at a projected savings of nearly $1.3 billion under the production cost baseline;
- Increasing the F-35B procurement rate to complete production in FY2026 (four years earlier than the current plan), generating expected cost savings of $1.2 billion;
- Increasing production of E-2Ds to a rate of 7 per year, resulting in 20 additional aircraft through FY2024 at an expected cost reduction of $1.2 billion; and
- Accelerating completion of KC-130J procurement to FY2022, producing savings estimated at over $400 million.

The Aircraft Procurement, Navy (APN) funding (Budget Activities 1-4 and 6) required to

support the proposed additional aircraft is depicted in Table 5 below.

Table 5. Funding required for accelerated aircraft procurement, FY2017-2023
(Then-Year $ Millions)

	FY17	FY18	FY19	FY20	FY21	FY22	FY23
AH-1Z	$914	$887	$967	$6	$6	$0	$0
CH-53K	$488	$1,035	$1,253	$1,669	$2,078	$2,721	$2,749
CMV-22B	$20	$977	$1,020	$1,044	$1,078	$768	$32
MV-22B	$1,520	$854	$858	$869	$849	$538	$32
C-40A	$427	$0	$0	$0	$0	$0	$0
E-2D	$1,062	$1,083	$1,431	$1,469	$1,480	$1,501	$1,727
EA-18G	$0	$0	$0	$0	$0	$52	$2,045
F/A-18E	$1,026	$723	$1,882	$1,343	$1,172	$1,156	$0
F/A-18F	$1,197	$1,447	$376	$959	$1,172	$1,156	$0
F-35B	$2,934	$3,707	$3,185	$3,280	$4,158	$4,792	$5,065
F-35C	$1,294	$2,068	$2,500	$3,118	$3,753	$3,832	$4,082
KC-130J	$334	$466	$525	$591	$629	$650	$683
MQ-4C	$579	$851	$895	$801	$858	$826	$714
MQ-8C	$74	$109	$156	$127	$133	$148	$31
P-8A	$3,028	$2,037	$2,740	$3,068	$97	$0	$0
T-44C RPL	$0	$0	$0	$0	$0	$0	$23
UC-12W	$59	$0	$0	$0	$0	$0	$0
VH-92A	$0	$0	$794	$775	$816	$67	
Accelerated Plan	*$14,958*	*$16,244*	*$18,583*	*$19,119*	*$18,281*	*$18,207**	*$17,183**
President's Budget 2017	$10,212	$11,212	$12,763	$10,823	$12,588	N/A	N/A
Delta	$4,746	$5,032	$5,820	$8,296	$5,693	$18,207*	$17,183*

* Because the PB 2017 only extended through FY2021, the FY22 and FY23 columns represent total aircraft procurement funding for those years to support the accelerated plan.

The above estimates reflect the Navy's best understanding of the most rapid production increases possible to enhance the capability and capacity of the Fleet. Should these increases be approved, as platforms come on line they will require additional investment in personnel to operate and maintain them and infrastructure to support them, as well as funding to support training and deployments. The Navy is currently analyzing these costs, and will make that information available as those estimates are further refined.

The Future Navy

May 17, 2017

Over the past year there have been numerous studies, conducted by the Navy and several other organizations, that have explored what the future fleet should look like.

Two consistent conclusions emerge from this body of work:

- **First, the nation needs a more powerful Navy, on the order of 350 ships, that includes a combination of manned and unmanned systems.**
- **Second, more platforms are necessary but not sufficient. The Navy must also incorporate new technologies and new operational concepts.**

Finally, as we increase our naval power, our focus cannot be on some distant goal decades in the future. The Navy must get to work now to both build more ships, and to think forward - innovate - as we go. To remain competitive, we must start today and we must improve faster.

"The Navy must get to work now to both build more ships, and to think forward - innovate - as we go. To remain competitive, we must start today and we must improve faster."

Faster and More Complex. And Faster.

There is broad agreement that the current security environment is faster paced, more complex, and increasingly competitive. Time is an unforgiving characteristic of that environment - things are moving faster, including our competitors. More and more often you hear one word to describe the pace: exponential. In many ways, information technology is driving this. But the pace is quickening everywhere. As Chairman of the Joint Chiefs of Staff General Dunford has made clear, more and more of our challenges are multi-domain, trans-regional, and multi-functional.

This exponential and complex dynamic is playing out on the seas. As the world's population rises, more of it is moving to the coasts. The number of megacities is projected to grow from 31 today to 41 by the end of the next decade; the vast majority of them will be within 100 miles of the coastline. People are taking to the seas for trade and sustenance at rising rates: maritime traffic has risen by 400 percent over the last 25 years, and world aquaculture production increased 13-fold over about the same time frame. As maritime appetites grow, they are driving people to stake claims to oil, natural gas, and minerals that are increasingly accessible as technology advances and the polar ice cap recedes. And people are not just tapping into undersea resources, but using more of the sea floor itself. Ninety-nine percent of all

intercontinental telecommunications ride on undersea cables, and the number of cables continues to grow to support our insatiable (exponential) demand for data.

"[C]hanges are shifting the character of naval competition and warfare, and are being exploited, to varying degrees, by a range of competitors."

These changes are shifting the character of naval competition and warfare, and are being exploited, to varying degrees, by a range of competitors. Both China and Russia are able to compete on a global scale, in all domains, and at competitive speed. They both possess considerable space, cyber, and nuclear forces. Both are challenging U.S. influence and interests in expanding areas of the world, often in maritime spaces. They have been very explicit about their maritime intentions, and have moved out smartly to advance them. China's 2015 white paper asserted that "[t]he traditional mentality that land outweighs sea must be abandoned…It is necessary for China to develop a modern maritime military force structure commensurate with its national security and development interests…so as to provide support for building itself into a maritime power." This goal is reflected in China's shipbuilding efforts, which analysts recently characterized as proceeding at a "frenetic pace," with the fleet "modernizing at an incredible rate [that] shows no signs of abating." As just two examples, until 2009, China had a single ballistic missile submarine; it has added another three since. And the Chinese Navy commissioned 18 ships last year. China has used this growing and modernized fleet to sail all over the world, visiting ports across the globe and establishing new overseas bases.

Russia has also laid out its plans, issuing a new maritime doctrine in 2015 aimed at "strengthening Russia's position as a sea power." The Russian Navy has continued to build modern frigates and corvettes, and expanded its operating areas in the Baltic, Black, Mediterranean, and Caspian Seas. And as ever, Russia has sustained and modernized a capable submarine fleet. Just last month, the Russian Navy launched the second of its YASEN-class nuclear attack submarines, the latest step in a plan to recapitalize its submarine force.

North Korea's President, Kim Jong Un, has been equally clear about his aims, boasting that his nation can "tip new-type intercontinental ballistic rockets with more powerful nuclear warheads and keep any cesspool of evils in the earth, including the U.S. mainland, within…striking range." His relentless pursuit of nuclear-capable missiles continues to destabilize not just north Asia but the world; Asian and western naval forces are an increasingly important contributor to the international community's response. Iran presents a maritime challenge of a different nature. Its growing naval forces routinely exhibit provocative behavior in the Straits of Hormuz, Arabian Gulf and beyond. The Iranians' support to proxies throughout the Middle East shows no signs of lessening. Here, too, U.S. and partner naval forces are on station in the interest of preserving

freedom of navigation and access for trade and markets. Finally, there are terrorist groups, some of them supplied by Iran, that are firing missiles, smuggling weapons, laying mines off the coast of Yemen, and kidnapping and killing civilians in the Sulu Sea and elsewhere.

Response: Naval Forces

"Complexity and pace place a premium on the ability to respond quickly, something that naval forces do well by virtue of their forward presence and ability to operate freely in international waters."

The challenges are serious. As an important part of the solution, U.S. naval forces, acting with the rest of the U.S. joint force and with partners and allies, are particularly well suited to address the changing competition and shifting set of competitors. Complexity and pace place a premium on the ability to respond quickly, something that naval forces do well by virtue of their forward presence and ability to operate freely in international waters. National leaders can use naval forces (Navy and Marines) to react quickly, and can easily tailor that response to the circumstances at hand - to help local populations recover from natural disasters, attack terrorist encampments, or to suppress more sophisticated attacks.

The presence of capable platforms enables naval forces' inherent responsiveness; they are also uniquely persistent. The same presence the Navy maintains around the world that allows it to react quickly also provides U.S. leaders with a tool for long-term influence. This constancy deters conflict, assures our allies and partners, and offers them routine and plentiful opportunities for collaboration. Further, because U.S. ships are sovereign American territory, they offer unique diplomatic settings to conduct the nation's business if needed. Finally, because they are self-sufficient when they respond, naval forces offer useful capabilities to assist in the initial response phases of a natural disaster. As full partners with the Army and Air Force as conflicts unfold, naval forces are often first on the scene, and continue to preserve U.S. interests in the long term, after the conflict subsides, through continued and routine operations forward.

To address this rapidly changing security environment and achieve its mission, the Navy must provide a balanced fleet that offers U.S. leaders credible options, in places of strategic importance, at a relevant speed. That Navy is achieved through a fleet design and a resultant fleet architecture that is powerful enough to achieve U.S. aims without conflict, but, if deterrence fails, to win quickly and decisively. The pace at which potential competitors are moving demands that we in turn increase the speed at which we act. Our advantage is shrinking -- we must reverse this trend.

The recent body of studies leads to some common conclusions about naval forces most effectively providing credible options. One is that numbers matter. The number of ships in the Navy's fleet determines where we can be, and being there is a key to naval power. As well, mere numbers are not enough: what a platform can do - how capable it is to create an effect - is increasingly important. Generally speaking, most analyses take an evolutionary approach that would seek to expand the current Navy much as it is, using current operating concepts, platforms, and modestly incorporating technological upgrades as they unfold. The Navy's most recent Force Structure Assessment (FSA) was an evolutionary assessment. Using today's fleet design and architecture and current platforms, the 2016 FSA estimated that the Navy battle fleet should grow to 355 ships.

"[A] 355-ship Navy using current technology is insufficient for maintaining maritime superiority… we must also implement new ways of operating our battle fleet, which will comprise new types of ships."

Many of the ships currently in the fleet or under construction will be part of our future success, particularly as they are modernized. In parallel, Navy is already starting to implement a fleet design that portends significant changes in fleet architecture, and is seeking to deliver future capabilities more quickly to the waterfront. Put another way, a 355-ship Navy using current technology is insufficient for maintaining maritime superiority. We must grow, yes. But we must also implement new ways of operating our battle fleet, which will comprise new types of ships. The clear conclusion is that linear expansion and improvement will not achieve the exponential pace that will enable us to win in the future.

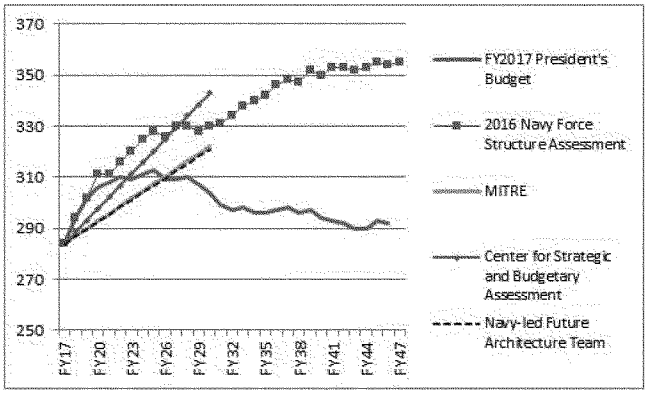

Figure 1: Proposed Navy Battle Fleet Sizes

This view is shared by many recent studies, which recommend some degree of non-linear change. Most put forth what could be characterized as moderate departures from the linear: larger fleets that incorporate some new technologies and capabilities, and in some cases different methods of employing the fleet. The studies vary in their reliance on particular technologies, reflect different views on how quickly those technologies might be integrated, and explore a range of possible implications for how the fleet might fight. While not all of this variation is captured in Figure 1 above, it does illustrate the range of proposed future battle fleet sizes in comparison to the Navy's latest budget submission, and how those recommendations compare to the evolutionary approach taken in the 2016 FSA. What the figure also makes clear is that while the Navy has been on a growth path in recent years, a change will be required to reach and sustain sufficient numbers.

Shape of the Future Navy

"Greater connectivity and capability will enable new ways to combine ships, aircraft, and undersea forces that may enable adjustments to the battle group and other formations."

So which of the above proposals makes the most sense for the future Navy? At the strategic level, as stated above, the complexity of the environment and the inherent applicability of naval capabilities indicate that the Navy must be larger in order to continue to provide timely options for national leaders in areas that matter. Furthermore, platforms must be accompanied by adequate stocks of repair parts, maintenance programs, and sufficient numbers of trained people to stay balanced and capable. This reality is seen every day in the continued strains on the current fleet. The Navy must be able to operate in the blue sea outside the range of shore attacks, where there is primarily fleet-on-fleet action. Moving closer to land, the Navy must be effective in the intermediate seas, where long-range shore-based missiles contribute to the threat, and in the littoral zones where the variety and density of fires is more intense. In each zone, the Navy must be able to operate with sufficient numbers of the right kinds of capabilities to attack, deceive, and defend against adversary missiles, submarines, and cyber and electronic attack. So the future fleet will need to be larger and more capable, and arrive more quickly, than recent studies suggest.

There are many elements of this fleet that exist today, and that will continue to be relevant in the future. We will continue to rely on undersea superiority to guarantee a survivable leg of the strategic nuclear deterrent triad. As well, manned and unmanned submarines can penetrate deep inside most reconnaissance networks to perform a number of missions.

Naval aviation will continue to observe, orient, decide, and act against enemy forces, leveraging the maneuverability and proximity that can only come from being aboard a carrier. As technologies continue to advance, the future air wing must continue to adapt as it always has, particularly to increase its capacity to contribute to the sea control mission, conducting both kinetic and non-kinetic operations. To support this capability evolution and deploy the air wing to relevant places in the world with sufficient capacity, the Navy will need 12 aircraft carriers to enable deployment of 5-6 carrier strike groups within relatively short time frames. In the short- and mid-terms, these will include a mix of 4th and 5th generation strike fighters, increasing numbers of unmanned air vehicles, and maritime patrol and electronic attack aircraft.

Changes in the air wing will be integrally linked to changes in the carrier strike group. Greater connectivity and capability will enable new ways to combine ships, aircraft, and undersea forces that may enable adjustments to the battle group and other formations. Very important here is the potential for increased capability and flexibility of amphibious ships, enabled by new aviation and weapons systems. Over the longer term, the range of possibilities will expand to more fully integrate space, surface, air, undersea, and cyber and electronic warfare capabilities.

The pace of change also demands that we design ships with modernization in mind. The "core" of those future ships - the hull, and the propulsion and power plants - will likely be built to last for decades. To leave room for future modernization, we should buy as much power capacity as we can afford. On top of that hull and power plant, we must plan from the outset to modernize the "punch" -- the combat systems, sensors, and payloads -- at the speed that technological advances allow. Future ships should be made for rapid improvement with modular weapons canisters and rapidly swappable electronic sensors and systems. Related, future designs must aggressively go after ways to drive down the costs to operate and maintain the future fleet, no matter its composition.

There is no question that unmanned systems must also be an integral part of the future fleet. The advantages such systems offer are even greater when they incorporate autonomy and machine learning. And these platforms must be affordable enough to buy them in large numbers, and networked in order to expand our presence in key areas.

To complement these capabilities, directed energy technologies, cyber tools, and advanced missiles can cripple potential adversaries' abilities to track or target our forces. Directed energy will also play a crucial and much more affordable role in defending against high rates of fire.

Netting the battle fleet together in ways that are reliable and secure will allow for maximum flexibility. Strengthening and extending our nets will "raise all boats." Those networks will support multiple functions, but increasingly will also be a key enabler of artificial intelligence-enabled tools, informed by data analysis, that will allow our commanders to make better decisions faster than our enemies.

Getting and Staying There

If these are key features of the future fleet, what can we do now to make that fleet real, as fast as possible? The short answer is that we must simultaneously build and innovate.

"There are other ways to get more capability for the dollar. Thinking hard about the number and type of performance requirements for future platforms can help find the "knees" in the cost-performance curves."

Let's start with what we know. Multiple shipbuilding and aircraft production lines are "hot" - currently producing. They can do more, building additional ships of the types already under construction, more economically. Buying aircraft carriers at the economically-optimal rate - three or four years apart instead of the current five or more years - will not only get us a more powerful fleet faster, but also will save considerable money. The same is true of surface combatants; an analysis of the industrial base shows we could build up to seven additional destroyers in the near term, and up to 14 more small surface combatants. We know we will need the inherent flexibility of a larger amphibious fleet; the industrial base could build five more than we are currently planning over the next six years. Finally, we could also speed construction of up to 12 more combat logistics and command and support ships in the same time period.

In all, analysis shows that today's industrial base has the capacity to construct 29 more ships and almost 300 more aircraft over the next seven years than our current plan. Those platforms are ones that we are confident will continue to be relevant in the coming decades, and can better incorporate the modular approach described above.

We should also assess how much additional capacity and capability we can get by upgrading and extending the lives of platforms we currently have and are planning to retire.

There are other ways to get more capability for the dollar. Thinking hard about the number and type of performance requirements for future platforms can help find the "knees" in the cost-performance curves. A meaningful discussion to discover this optimal point would involve a team of industry leaders, technologists, our defense labs, the requirements officers, and our budget people. The conversation would determine the most achievable path to improve performance in a way that's affordable, with low technological risk, on a well-understood schedule. The derived "cost-performance point" would then define the next improvement step, with the understanding that the following step would occur much sooner than it has in recent history - defining a rapidly iterative approach to improving performance. This requires acquisition practices that are far more agile than the ones we have now.

As well, if we build with faster improvement cycles, the inherent cost of our systems and platforms can come down. Shifting more heavily to unmanned surface, undersea, and aircraft will help us to further drive down unit costs. Energy-based weapons can be both more effective and put the Navy on the right side of the cost curve. Designing in the ability to modernize - plug and play hardware matched with software-programmability - will make upgrades quicker and more affordable even as we stay more capable.

"We need this more powerful fleet in the 2020s, not the 2040s ."

Two thoughts as we get started. First, we need a year to consolidate our readiness and achieve better balance across the Navy. 2018 will be that year, and even as we restore wholeness, we'll ensure that we continue to grow the Navy and establish a firm foundation for accelerating growth in following years. Next, as we move forward, we must remain open to the likelihood that achieving the Navy we need cannot be accomplished within historical levels of funding for ship construction -- more will be needed. Arresting the coming decline in fleet size means we must get more capable ships to sea as quickly as we can. We need to determine the best way to get the most overall capability in relevant timeframes, which will result from a mix of new and modernized hulls. From that starting point, we must focus our intellectual energies on defining the optimal mix of platforms for the future, within a timeframe appropriate to the dynamic complexity we face now and that will only intensify in the future.

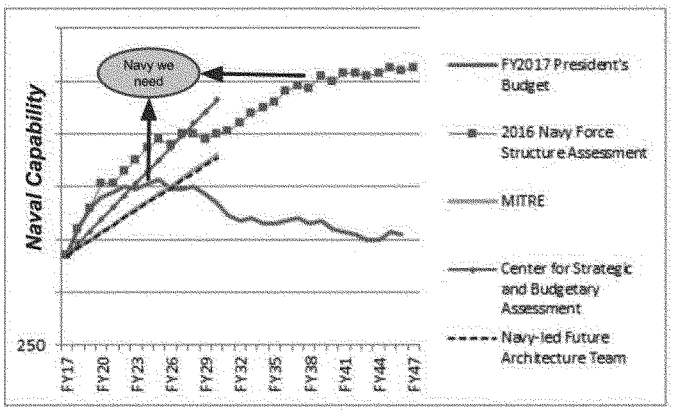

Figure 2: Resultant Capability of New Fleet Design and Architecture

Determining the eventual fleet composition - with the size and capability to deliver the required

naval power - is important. The fleet must be larger and more powerful. But the urgent problem before us is that all studies show the need for *more* naval power, and without determined action, we will indeed see the Navy becomes less powerful. So we must rapidly increase the number and capability of platforms: we must get to a higher build rate from which we continue to work our way forward. We must arm those platforms with more effective, modernized payloads. We must make better use of sensor and communications apertures. We must operate on networks that will degrade more gracefully and heal faster than those of our rivals. Most importantly, the future fleet must be on station ASAP! We need this more powerful fleet in the 2020s, not the 2040s. To do that, we must get more capability out of what we already own, and bring new technologies and platforms into the mix as rapidly as possible. Figure 2 depicts the kind of fleet we must pursue: one that is larger, yes, but more capable than any of the recent analyses have suggested, and arriving much more quickly. In short, a Navy that achieves an exponential rate of improvement.

Given the attention that has been focused on the future Navy, many different thinkers have independently arrived at similar conclusions - the writing on the wall is clear. The competition is on, and pace dominates. In an exponential competition, the winner takes all. We must shake off any vestiges of comfort or complacency that our previous advantages may have afforded us, and move out to build a larger, more distributed, and more capable battle fleet that can execute our mission. The foundation of that fleet will be leaders and teams who learn and adapt to achieve maximum possible performance, ready for decisive operations and combat.

Time is of the essence.

"We must shake off any vestiges of comfort or complacency that our previous advantages may have afforded us, and move out to build a larger, more distributed, and more capable battle fleet that can execute our mission."

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

MAY 24, 2017

RESPONSE TO QUESTION SUBMITTED BY MR. LANGEVIN

Admiral LESCHER. Studies and preliminary assessments on the feasibility to integrate Electro-Magnetic Rail Gun (EMRG) on US Navy vessels include DDG 51 Flt IIA, DDG 51 Flt III, CG, Littoral Combat Ship, LPD 17 and DDG 1000. The US Navy continues to assess options that would further reduce the size, weight, power, and cooling, as well as the cost of critical EMRG sub-systems to better inform the evaluation of ship classes that could serve as platforms for future EMRG. This data will be included as part of the Analysis of Alternatives for the Future Surface Combatant. [See page 26.]