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**SUBMARINE INDUSTRIAL BASE:  
OPTIONS FOR CONSTRUCTION**

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HEARING

BEFORE THE

SUBCOMMITTEE ON SEAPOWER AND  
PROJECTION FORCES

OF THE

COMMITTEE ON ARMED SERVICES  
HOUSE OF REPRESENTATIVES

ONE HUNDRED FIFTEENTH CONGRESS

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## CONTENTS

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	Page
STATEMENTS PRESENTED BY MEMBERS OF CONGRESS	
Courtney, Hon. Joe, a Representative from Connecticut, Ranking Member, Subcommittee on Seapower and Projection Forces .....	2
Wittman, Hon. Robert J., a Representative from Virginia, Chairman, Subcom- mittee on Seapower and Projection Forces .....	1
WITNESSES	
Geurts, Hon. James F., Assistant Secretary of the Navy for Research, Devel- opment and Acquisition, Department of the Navy; RADM Michael E. Jabaley, USN, Program Executive Officer for Submarines, Department of the Navy; and RADM John W. Tammen, Jr., USN, Director, Undersea Warfare Division, Chief of Naval Operations (OPNAV N97) .....	5
APPENDIX	
PREPARED STATEMENTS:	
Geurts, Hon. James F., joint with RADM Michael E. Jabaley and RADM John W. Tammen, Jr. ....	29
Wittman, Hon. Robert J. ....	27
DOCUMENTS SUBMITTED FOR THE RECORD:	
[There were no Documents submitted.]	
WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING:	
[There were no Questions submitted during the hearing.]	
QUESTIONS SUBMITTED BY MEMBERS POST HEARING:	
[There were no Questions submitted post hearing.]	



## **SUBMARINE INDUSTRIAL BASE: OPTIONS FOR CONSTRUCTION**

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HOUSE OF REPRESENTATIVES,  
COMMITTEE ON ARMED SERVICES,  
SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES,  
*Washington, DC, Tuesday, March 20, 2018.*

The subcommittee met, pursuant to call, at 2:19 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. Call to order the House Armed Services Committee, Subcommittee on Seapower and Projection Forces.

I want to thank our witnesses for joining us today. And today, we are meeting to discuss undersea warfare and options to ease the impending overall reductions in submarine force structure. This is not a good-news story, and I look forward to discussing ways to strengthen our undersea capability and capacity.

Appearing before us today to discuss these important topics are three esteemed Navy witnesses: The Honorable James Geurts, Assistant Secretary of the Navy for Research, Development and Acquisition; Rear Admiral Michael E. Jabaley, Program Executive Officer for Submarines [PEO SUBs]; and Rear Admiral John W. Tammen, Jr., Director, Undersea Warfare Division, OPNAV 97.

I want to thank you all for your service, as well as for appearing before this subcommittee to discuss our undersea force structure.

As I previously discussed, the world watches our budget deliberations and the decisions we make. Today we are at a crossroads in regard to our undersea forces. We are currently on a path that reduces our attack submarine force structure from 52 boats today to 42 boats in 2028.

Admiral Harris, our PACOM [U.S. Pacific Command] commander, constantly reminds us that his most critical shortfall is attack submarines. As we all know, the silent service is indispensable as a clear method to deter aggression, and offers the combatant commander options during escalatory conflict.

Our crossroads offer us two options: One continues to support the decline of our attack submarine force structure by 20 percent in the next 10 years, the other begins to rebuild the capacity and reverse this downward trend.

Our adversaries are always measuring options and looking at our funding decisions to determine how this impacts their own strategic goals. If America is weak, adversaries are emboldened to chal-

lenge the international system that we have principally shaped since the last great war.

If we continue to allow the reduction in our attack submarine force, potential adversaries may see this decline as a strategic inflection point and an opportunity to attempt to change the international balance.

I support the alternative path. Consistent with the Navy's 30-year shipbuilding plan, we need to increase our attack submarine build rate and include additional submarines in fiscal years 2022 and 2023. Additionally, we need to rapidly extend the service life of available *Los Angeles*-class attack submarines.

If we choose this alternative path, we will demonstrate the resolve of our Nation and affirm our support to maintaining credible maritime deterrence to potential aggressors.

I want to briefly discuss the *Columbia* class also. The *Columbia* class is projected to carry about 70 percent of our Nation's strategic deterrence. This is a program that we cannot get wrong. And I know the Navy places the necessary priority in this program.

The first boat is expected to be delivered in 2031, and we are well on the development path that will allow us to authorize the first boat in 2021. The program includes a myriad of technical innovations and, when delivered, will offer an unrivaled strategic capability.

While I am satisfied that PEO SUBs is on the right path to deliver *Columbia* class, we must continue to commit our Nation's best resources to this challenge. We must devote the right science and technologies to this effort. And we must develop a capable workforce that is sustained and will ensure the timely delivery of *Columbia* class and appropriately managing the expanding undersea industrial base. Our Nation is ready for the challenge.

I am reminded of one of our Nation's greatest admirals, Chester Nimitz, who reflected on the value of our submarines at the beginning of World War II. Admiral Nimitz indicated "We shall never forget that it was our submarines that held the lines against our enemies while our fleets replaced losses and repaired wounds."

I choose not to forget the lessons from our greatest generation. I choose the alternative path that puts us on a track for a strong submarine force. I choose a strong America that emboldens allies and deters future aggression.

Ladies and gentlemen, I hope you choose the same.

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 27.]

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

Mr. COURTNEY. Thank you, Mr. Chairman.

And thank you, again, to all of our witnesses here today. You have been, obviously, regular visitors over the last couple months or so, and, again, we are looking forward to today's hearing to follow up on some of those conversations we have had.

Over the past 2 years and in recent weeks, the House Armed Services Committee has received testimony from our combatant commanders that their requirements for attack submarines are not being met. Admiral Harris of PACOM noted that for the second year in a row, he only gets half the submarines he needs. And General Scaparrotti of EUCOM [U.S. European Command] testified that the North Atlantic region is now experiencing Russian under-sea activity not seen since the 1980s.

It is primarily that strategic challenge that has resulted in December 2016 when the Navy published a Force Structure Assessment, which concluded that the attack submarine force requirement needs to grow from 48 boats to 66 boats. Our subcommittee responded to this clear demand signal last year by giving the Navy the authority to procure up to 13 *Virginia*-class submarines in the next block contract, three more than was planned.

This plan, which was passed on a bipartisan basis, starting with this panel, is now law, was crafted to take advantage of capacity in the industrial base between the years that we were building the *Columbia*-class SSBN [ballistic missile submarine]. Last month, however, the budget we received from the Navy indicates uncertain signals about whether they intend to utilize the authority granted by Congress to expand our submarine production plans.

Conversely, at the same time, the Navy published its 30-year shipbuilding plan, which identified industrial base capacity in the years 2022 and 2023, where we could increase production to three *Virginia*-class submarines per year. Mr. Geurts will recall that Admiral Merz explained all this a few weeks ago and explicitly explained the plan with visual aid charts to that effect.

Over the past few months, as the 5-year—as the new 5-year block contract is under consideration, we have struggled to get a clear answer on whether the Navy is going to work with Congress to give the country an option to heed the demand signal of our combatant commanders.

As I think our witnesses will recall, the last 5-year block contract signed in 2014 represented a cooperative effort by Congress and the Navy to achieve a 10-submarine block. Initially, the Navy's plan was to build nine submarines in that block.

With the Navy's input, Congress provided initial funding for a 10th boat and provided incremental funding authority as a way to finance the 10th submarine. The Navy and industry then negotiated an option to add an additional 10th submarine, which the Navy then requested and Congress then funded. It was the ultimate win-win for the Navy.

As former Secretary Mabus was fond of saying, "The country got 10 submarines for the price of 9." I, for one, therefore am concerned by the mixed messages that the Navy is now sending Congress and the industrial base with the contract being negotiated now.

If we do not make a strong push for these additional contracts incorporated into—with options into this contract, it will make that ability to go higher much more challenging and significantly more expensive in the future. I hope our witnesses today will provide clear answers about the Navy's intention to utilize the strong support this panel has provided to grow the submarine production plan.

As we work to add more submarines into the pipeline, I am also concerned about ongoing challenges in managing our existing fleet. Delays and backlogs in repair availabilities has caused attack submarines to sit idle at their piers for months and, in some cases, years. Even with the efforts by the Navy to reduce repair backlogs, the latest projections still show nearly 7 years of idle time as submarines sit at the dock waiting for work to begin. At the same time, our industry partners are working to ramp up the workforce to build the new *Virginia*-class and *Columbia*-class submarines.

I have urged in the past for a return to the “one shipyard” policy of years past where submarine repair work was spread across the public and private sector to manage workload shortages and backlogs in the yards. I believe in returning to that approach would help both industry smooth their workforce ramp up in the years ahead and get our submarines where they need to be, out at sea and not tied up and unable to operate.

Finally, the Navy has identified the *Columbia*-class submarine as its number one acquisition priority, something which Congress clearly agrees and has endorsed with its funding over the last few years.

Over the years, we have worked to respond to the Navy’s concern about the cost and schedule for this program by creating the National Sea-Based Deterrence Fund. Despite some initial hesitation, I have been encouraged by the growing acceptance by the Navy of the potential of the authorities provided in the fund.

Last year, we had to fight in Congress to ensure that the final defense authorization agreement included expanded continuous production authority that the Navy said would save \$383 million in savings starting in 2019. I want to say parenthetically that Secretary Spencer was a huge ally during that conference process so that we actually got that language as part of the final conference bill.

However, the Navy’s 2019 budget has no stated plan at least to utilize these additional authorities. This subcommittee would like to have a clear understanding of why the Navy—or whether the Navy has determined that it would not pursue these additional savings.

There is no doubt that we face significant challenges as we ramp up our submarine construction program in the coming years, but it is also a time of great opportunity. We look forward to working with the Navy to make sure that we give our sailors and military commanders what they are asking us for to—and what they need to protect our Nation.

I look forward to answers today to many of the questions that I posed. And with that, I yield back.

Mr. WITTMAN. Joe, thank you. And again, thanks so much for your leadership. We really appreciate that.

So, Secretary Geurts, we are going to go to you now. I understand that you are going to give the opening statement for the panel, and then we will proceed to questions.



**STATEMENT OF HON. JAMES F. GEURTS, ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT AND ACQUISITION, DEPARTMENT OF THE NAVY; RADM MICHAEL E. JABALEY, USN, PROGRAM EXECUTIVE OFFICER FOR SUBMARINES, DEPARTMENT OF THE NAVY; AND RADM JOHN W. TAMMEN, JR., USN, DIRECTOR, UNDERSEA WARFARE DIVISION, CHIEF OF NAVAL OPERATIONS (OPNAV N97)**

Secretary GEURTS. Yes, sir.

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 submarine force structure limitations and expansion options.

I am joined today by Rear Admiral Michael Jabaley, PEO [Program Executive Officer] for Submarines, and Rear Admiral John Tammen, Director of Undersea Warfare for the Chief of Naval Operations. With your permission, I would like to provide opening remarks for all three of us and submit my written statement for the record.

Mr. WITTMAN. Without objection.

Secretary GEURTS. Undersea forces provide the United States with unique military advantages essential to our international influence, our alliance partnerships, and our national security. The U.S. Navy submarine force is experiencing a significant growth in demand and must expand to support the 2018 National Defense Strategy. The maritime dimension of the National Defense Strategy is to increase the American naval power to building the Navy the Nation needs. To do so, we must ensure our undersea force has the submarines and capabilities necessary to deter and win in this rapidly changing world where adversaries' challenges are felt in every operating domain.

Our undersea capability is underpinned by tens of thousands of workers in our public and private shipyards, as well as our suppliers. This industrial base represents a key element of our national security, and we are thankful for their contributions. We must consider them, as well as our capacity to recruit, train, and retain our Navy submarine crews, any time we discuss our current undersea capability and capability to grow.

We would like to take this opportunity to thank Congress for your support of the Bipartisan Budget Act of 2018. Enactment of this legislation will help provide the predictability and the stability in funding that is absolutely critical to our success and will support our efforts to affordably procure submarines, reduce risk across programs, and maintain a viable submarine industrial base.

We would like to thank the committee for this opportunity to speak with you today, and we are here to answer your questions.

[The joint prepared statement of Secretary Geurts, Admiral Jabaley, and Admiral Tammen can be found in the Appendix on page 29.]

Mr. WITTMAN. Very good. Assistant Secretary Geurts, thank you so much for your opening statement.

We are now going to go to the members of the subcommittee for their questions, and I will defer and turn to my colleague, Mr. Courtney, for his line of questioning.

Mr. COURTNEY. Thank you, Mr. Chairman.

And, again, thank you to the witnesses and to Admiral Jabaley and Mr. Geurts for joining us on Saturday for a very cold commissioning of the USS *Colorado*.

So, again, you know, looking at this subcommittee's sort of track record in terms of, you know, really having an impact in terms of the submarine force, you know, back in 2007, we had a budget that came over that continued the one-a-year build rate for *Virginia* class. And, again, on a bipartisan basis, we did a \$588 million plus-up, which really kind of jump-started, you know, getting to the two-a-year clip.

And thank God we did it, because when we talk about, again, the force level and, you know, how we are still inevitably going to go into a dip, if we had not done that 10 years ago, frankly, we would be in an even worse place today than what Admiral Harris and, you know, General Scaparrotti was describing.

You know, fast forward again, when the Block IV was negotiated in 2013 and 2014, this subcommittee, again, passed the incremental authority, which, you know, at least sent a signal for the negotiators when Block IV was being done to go bigger than what the Obama budget had come over for only nine subs there.

And, again, we are in one of those sort of pivot moments in terms of, you know, we are in the midst of Block V, which, again, sets the—really, the law as far as acquisition for the next 5 years.

So as I alluded to in my opening remarks, and we discussed this offline, you know, that sort of history in 2014, when an option was added to go higher than nine subs, it really had a very, I think, healthy effect, both for the parties as they were negotiating, Congress in terms of coming up with the funds. And given the fact that, again, the Navy sent over that chart that showed industrial capacity in 2022 and 2023, if you could talk a little bit about, you know, how you see those negotiations and whether, again, we are all going to continue sort of pulling in the same direction to, you know, trying to get to that three sub a year, at least towards the end of that block contract.

Secretary GEURTS. Yes, sir. I will start out and invite the PEO also to embellish with some additional facts.

Certainly, you know, this committee's action went to work and passed the law to get us to 355, as well as specifically in the submarine arena, has been very enabling and, quite frankly, put us, as you said, on a path. Had we not been on that path, we would be in some dire circumstances.

As we look forward, you know, I do believe there is capacity to get to three submarines a year in the off year of *Columbia*, three *Virginia* submarines a year. I think that is the case. As you know, we have gotten through going up to two submarines per year, and we are in a sustainable serial production right there. And so I am comfortable saying there is actually capacity there in the yard.

As we negotiate this upcoming multiyear based on the approval you got, we will absolutely look at putting the options in for submarines. We will have to work through that with your staff exactly how we do that and implications to the economic order quantity requirements in the early years, but, you know, we just got the proposal in from the contractor, I think, on Friday. And so the time is right for us to look at how to structure that and give the Nation

options to add additional submarines if that is what we choose to do.

Mr. COURTNEY. And I appreciate that answer. And, again, we are on standby to sort of assist in any way that we possibly can.

You know, again, I want to—at least for the record or anyone who is watching, is that, you know, we are talking about options and permissive authority as opposed to, you know, handcuffing you in terms of, you know, this process, and we want obviously what is practical and achievable.

So, Admiral, if you wanted to comment as well.

Admiral JABALEY. Yes, sir. Thank you very much for the opportunity to add to this.

As you are aware, the 30-year shipbuilding plan identified the years 2022 and 2023 as particular ones in which there is additional capacity available in the industrial base. It is a challenge to leverage and execute that capacity and is certainly something that we are willing to work with Congress to explore.

As Secretary Geurts remarked, we did receive the proposal on Friday for the Block V contract. And as we start to analyze the significant amount of information in that and then begin the negotiation process with the shipbuilders, the alternatives to add additional submarines are certainly something that we are willing to work with Congress and fold into that negotiation process.

The most important thing, I would say, is that an early signal for funding to allow us to leverage the economic order quantity buys for 12 ships instead of 10, if we were to add ships in 2022 and 2023, that signal for funding to the supplier base would be critically important. And as we go forward over the coming months, we will certainly take that into consideration.

Mr. COURTNEY. Great. And I am sure as we, again, put pen to paper for the markup, you know, we are, like I said, going to keep all that in mind and are on standby.

The other question is, I mentioned NSBDF, the National Sea-Based Deterrence Fund, the authorities which, again, both CBO [Congressional Budget Office], Congressional Research Service, even the Navy itself, you know, gave high marks, particularly to some of the, you know, potential efficiencies that we can achieve through that. And now, you know, I guess, you know, imitation is the highest form of flattery. We have got other services and other programs now trying to sort of emulate that.

I was wondering if you could just sort of talk about, you know, what your thinking is—you are pretty sort of new in the saddle here and—you know, as a solution, you know, to obviously the big bubble that we are looking at.

Secretary GEURTS. Yes, sir. And I will take maybe a strategic look at it and then, again, Admiral Jabaley can talk about how we have actually enacted it.

What I would say is—and, again, in my opening remarks, remarked—you know, the industrial base and our ability to stabilize that, grow that in a sustainable way, is absolutely critical. And your committee's help, even in fiscal year 2018 of recognizing it is not just the shipyard, it is all the suppliers that go down there, is critical.

And these authorities allow us to address, you know, in very specific terms but also strategically, how do we grow that supplier base with the hope downstream that we would be in the same position we are right now with two ships a year. We could get to the point where we can easily sustain three ships a year, whether that is three *Virginias* or two *Virginias* and a *Columbia*. And I think that is a key tool.

So, one, I would like to thank the committee for putting that tool in play. I think we have used it quite effectively to date. And we intend to continue to use it in the future to address kind of this—being able to spin up the base and then sustain it.

And, Michael, if you could give some of the specifics.

Admiral JABALEY. Yes, sir.

As Secretary Geurts said, we are very appreciative of the authorities that the National Sea-Based Deterrence Fund has allowed us to leverage. The two that we are using right now are advanced construction using advanced procurement funding.

In fiscal year 2018, we funded additional money to allow the shipbuilders to pull key activities to the left and start elements of the *Columbia* even earlier in the prototyping and construction. As a matter of fact, yesterday, at the Newport News Shipbuilding company, they cut their first steel for the *Columbia* piece of steel that will go to use the hemi-head closures on the pressure hull. The Electric Boat has been doing advanced prototyping of missile tubes for over 2 years already. So we are well along using that advanced construction authority to de-risking the *Columbia* construction.

The second one, continuous production, has been extremely helpful in allowing us to execute a more smooth ramp-up in key elements of production, in particular for the suppliers, for the missile tubes of the *Columbia*.

So the fabrication of the missile tubes, the integrated tube and hull assembly that fits it into the pressure hull, those are well in hand. We have received the first four tubes for the *Columbia*, plus one for the Strategic Weapons Systems Ashore. At Quonset Point, they are already being outfitted and readied for insertion into the first hull section.

Additional authority that has been granted that we have not been able to execute so far is continuous production for components outside the missile compartment. It was a vigorous discussion in the budget construction process. And unfortunately, as the budget took shape from the Navy, we were unable to fund those additional components. But the authority is certainly useful. And we looked to try to get it in next year as well, and that would allow government-furnished equipment, the propulsors, to go on a continuous production ramp, launcher tubes to go inside the missile tubes, and also key shipyard manufactured items such as high-pressure air flasks.

Again, the primary benefit of this continuous production authority is that if we can fund it and execute it, it de-risks those early ship deliveries when it is so crucial that we get the *Columbias* at sea to relieve the *Ohios* as they are coming off the line. It also has cost-savings benefit, but to me, the real benefit is that de-risking of deliveries.

Mr. COURTNEY. I yield back.

Mr. WITTMAN. Thank you, Mr. Courtney.

We will now go to Mr. Byrne.

Mr. BYRNE. Thank you, Mr. Chairman.

Mr. Geurts, good to see you again. I am going to go back to the industrial base for a second, drill down that a little bit.

Obviously, Electric Boat is going to have, at some point out in the future, pretty steep incline in terms of hiring this very skilled workforce to produce the *Columbia*-class submarine. But between now and then, because of the lack of sustained work, they are actually going to have layoffs. So layoffs and an incline, which anybody out there in the industrial place will tell you, whether it is making submarines or anything else, it is not a good way to do business.

I know the Navy has been concerned about this, and it is something you have been paying attention to. Has the Navy considered any options such as additional repair work for Electric Boat that would help reduce the risk on *Columbia* procurement and smooth out the workforce ramp-up?

Secretary GEURTS. Sir, as we discussed in our previous hearings, industrial base is our national security. I mean, that is absolutely critical, and we are very concerned. I would say, I am looking at all options for that. We have not made any firm decisions on that. But, obviously, I look at this in kind of an enterprise approach, both new build, repair, and then decommission. And my hope is as we look to synchronize those, we can better deal with the industrial base concerns with ramp-ups, ramp-downs, and then ramp back up.

I am concerned about the production ramp-up for *Columbia*. That is a significant challenge, and I am looking at all options to address that.

Mr. BYRNE. Well, you and I have talked about this before, because I was in charge of producing the workforce for the shipyards in the Gulf Coast. And these people don't grow on trees. They are highly skilled, highly trained workers in very great demand in an economy with a very low unemployment rate. And if Electric Boat lays any of these folks off, they are going to find a job. I am not worried about them.

I am worried about our ability to get somebody to take their place that has both their level of training, but also that level of experience that enhances the training because of their expertise. And I worry about this with regard to other classes of ships, as you know.

We only have so many highly trained shipyard workers in America because we only have seven shipyards making ships for the Navy now. So I hope that you will sort of think outside the box, because every one of those folks we lose is going to be very difficult to replace.

Secretary GEURTS. Sir, I absolutely agree with that. I would also say, a number of the authorities we were talking about previously, being able to spread out that build with continuous production, looking at classes of ships across—so we are looking at, in our nuclear enterprise forward, *Columbia* and *Virginia*, how do we smooth across all those classes of ships, because it—I agree, wholeheartedly, it is about the industrial base and preserving that workforce.

Mr. BYRNE. Well, if there is something we can do to help you, on the committee and the legislation, whatever, please let us know, because I think we all understand how difficult this is both for the Navy and the shipyards. We want to make sure that we are not only in the way, but that we are providing you with the help that you need to get there.

And with that, Mr. Chairman, I yield back.

Mr. WITTMAN. Thank you, Mr. Byrne.

We will now go to Mr. Norcross.

Mr. NORCROSS. Thank you, Chairman.

I want to follow up on some of the previous discussions, because the workforce is the key to making any of this work. But you were going through some of the items that were allowed to have the additional authorities to go ahead, but I didn't hear about motors. And there have been some issues in the past about some of the production issues. Without going into classified, why wouldn't that be part of those?

Admiral JABALEY. Yes, sir. I believe you are referring to the electric drive motor, and that is designed and procured under the authority of the director of Naval Reactors and his staff. But we work very closely with him to understand the overall impact of the integrated power system being supplied for the *Columbia* SSBN.

So they did have one manufacturing problem last year that caused them to lose some of their additional margin to delivery. They have worked very strenuously to recover that margin. They still have 9 months to deliver that—of margin to deliver that component on time. And so we are very confident that that is not an issue. There is—it is not a new issue, and it is one they have been working very closely on.

In terms of going to continuous production on the electric drive motor, that is one of the earliest things that gets procured on the build plan for the *Columbia*. And then it will go to the compatibility test facility in Philadelphia for a complete testing before it gets inserted into the hull of the submarine.

Mr. NORCROSS. But isn't that where it was—excuse me. Isn't that where they picked up the issue before?

Admiral JABALEY. It was actually before it got—it was before it left the vendor. The vendor identified the problem, reported it to the Navy, and then they went in and investigated it. So it was before it even got to Philadelphia that it was found.

So the—back to your original question, is that a candidate for continuous production? It is not one that we have looked at yet. But as the specific—the manufacturer begins to ramp up and go on to the second and third articles, it is certainly something that we could look at and make sure that we are not overlooking an opportunity to further de-risk the deliveries.

Mr. NORCROSS. So just without digging in too deep, the issue, they believe they resolved it, but it hasn't been through its testing phase in Philadelphia yet?

Admiral JABALEY. That is correct.

Mr. NORCROSS. So, quite frankly, we won't know until it gets through that?

Admiral JABALEY. That is correct. But with the current plan, we still have an additional 9 months of margin, even after the testing

is scheduled to be completed, before it is required to be delivered for the build process. So we are confident that, even if we do find additional problems, we have the ability to correct them. But you are correct; until it is absolutely done, we don't know for sure.

Mr. NORCROSS. And that becomes what we call the panic phase. So please keep that in mind, because there were some real issues, as you recall.

I yield back the balance of my time.

Mr. WITTMAN. Thank you, Mr. Norcross.

We will now go to Mr. Conaway.

Mr. CONAWAY. Thank you, Mr. Chairman.

I missed the conversation about extending the life of certain *Los Angeles*-class boats by new reactors, maybe the—I hate to call them the youngest, but the least old five boats. Can you visit with us about where that is progressing as well as what impact it might have on shipyard work that is not currently on the books?

Secretary GEURTS. Yes, sir. In the 2019 budget, we have got one programmed in on that. We believe we have four other propulsion plans that are available. We are screening the ships and identified the ships, so we are going to—we will work the first one, and if that is successful, then we will program in. That would give us another 10 years of life on those five submarines, which would be critical, as Chairman Wittman identified, where we have this bathtub, how that would be a key enabler.

Mr. CONAWAY. So what would be—okay.

Admiral TAMMEN. I would just offer, those five refuelings will actually fill in what used to be called the trough there when we had a 48 SSN [attack submarine] requirement.

Mr. CONAWAY. So what are the technical—were those boats ever designed to actually do this? So this would be a new concept to put a new reactor in there? What are the technical risks, for somebody who is not a nuclear scientist?

Admiral JABALEY. Yes, sir. So although the boats were not designed for ease of refueling, it is not too difficult to go back in and allow that eventuality at this point. The biggest technical risks are taking a ship that was going to serve to 33 years of life and then extending it for an additional 10 years. And as we learn more and more by doing the exact same thing on the *Ohio*-class submarine, we get more and more confidence that we can do this with *Los Angeles* class as well.

This one was really spurred by the fact that we already had material available to refuel the submarines, and so it really made sense to go back and take another look at the assumptions that we had and see can we actually do this. So the first one is in the budget for this year, and then the other four will continue to be developed based on how this goes.

Mr. CONAWAY. So I am not familiar with submarines, but other large ships go through some sort of a midlife soup-to-nuts review. Have these boats been put through that review in the past? How long ago was that? And do you anticipate, in order to get that other 10 years, you have got to make sure everything else stays together? What is involved?

Admiral JABALEY. Yes, sir. So each of these submarines either has already gone through or will soon go through their midlife

overhaul, and that gives us a very good assessment of the material condition of the ships. And then the NAVSEA [Naval Sea Systems Command] engineering directorate goes and does a material condition assessment as it approaches the availability that we would use to turn into a refueling, and then identifies any other maintenance that has to be done during the refueling overhaul and any other things that we have to put on a watch list to ensure we understand how the ship is aging.

So it is a significant amount of engineering rigor, and as I said, we have gained a lot of experience in extending the *Ohio* class already.

Mr. CONAWAY. All right. Thank you, Mr. Chairman. I yield back.

Mr. WITTMAN. Thank you, Mr. Conaway.

We will now go to Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman.

And I want to thank our witnesses for your testimony today and for your service and dedication.

Is it on now? All right.

Gentlemen, I want to thank you for your service to the Nation. Thank you for your testimony here today.

While it may seem like a long way off, in order to ensure that the first *Columbia*-class submarine embarks on its inaugural deployment in 2031, it is obviously critical that we continue to provide advanced procurement funds to facilitate early construction work in order to stay on schedule. As such, we are—how are we strategically making sufficient investments to drive down risk associated with any challenges that we may face with the *Columbia*-class program?

Admiral, want to start with you?

Admiral JABALEY. Yes, sir. Thank you for the question, Congressman. The government enterprise is keenly aware of the absolute critical nature to get the first ship and then all subsequent 11 ships out on patrol in the time organized, because, as we have said before, there is no margin left between the retirement of the *Ohio* and the fielding of *Columbia*. It is a strict heel-to-toe lockstep turnover that, not only do we have to deliver *Columbias* on time, but we also have to sustain *Ohios* to make sure they make it to the finish line.

So everything that we do in our program is charged with buying back margin into the program, whether it is in terms of cost, whether it is in terms of risk reduction for delivery dates, or whether it is early prototyping. Our prime focus has always been to buy back margin into the program to make sure that the Navy continues to provide the fleet to support our Nation's strategic deterrence.

As a result, many of the authorities that have been granted with the NSBDF have been used for efforts specific to that end of reducing risk and buying back margin into the program. And as we go forward and continue to program future budgets, that is, again, one of our top priorities.

Mr. LANGEVIN. Is there some specifics that you can give to the committee?

Admiral JABALEY. Well, the specifics are continuous production, which is pulling some production to the left for key components to



allow a more smooth ramp-up for the supplier industrial base to start building the increased volume, and then advanced construction.

So the *Columbia* has built in six super modules. And working with the shipbuilders, we identified key manufacturing activities to start earlier, to get those modules delivered earlier, and allow more progress towards what we call pressure hull complete, where the six modules are joined to form the finished submarine.

What that does is it moves some of that manufacturing earlier and gives us more time to work out any problems that occurred during the final assembly and test period. Because previous experience has shown that that is where we see the most growth in a construction span as everything is tested for the first time and we have to go in and fix problems. That takes time. So the more we can pull those module deliveries to the left, the earlier we can start in the final assembly and test program and, again, de-risk that delivery date.

Secretary GEURTS. Sir, the other thing I would add is, we are not only just looking at *Columbia*, but we look at *Columbia, Virginia*, and the *Ford*, all of our nuclear ships together, because there can be things we are doing in those other programs that could either enable or impact *Columbia*.

And you may have seen, we are now asking for an RFP [request for proposal] to accelerate to a two-carrier buy. That will have a benefit to *Columbia* by, potentially, if we choose to go down that path, bringing supplier builds for common components for the carriers earlier as opposed to, right now, they are laying on top of *Columbia* build, which would be a risk that we would have to deal with.

Mr. LANGEVIN. Thank you.

So I also want to know if you can give us an update on the common missile compartment project that we are working on with the U.K. [United Kingdom], and how is this strategic partnership being leveraged? And what best practices are we learning as we work with one of our closest allies?

And then the last question, before my time runs out. In terms of planning for facilities, as we are preparing for the *Columbia* class, for example, a lot of the dry docks are in need of modernization. As we move forward with our build plans, how will you ensure that we have the appropriate facilities to support them?

Admiral JABALEY. Yes, sir. To start with the common missile compartment, we are well on track and working very well with our U.K. counterparts. My counterpart, Rear Admiral Paul Methven, and then Rear Admiral Keith Beckett, who is the counterpart for the director of Strategic Systems Programs, we have an every-other-week phone call and then a quarterly common missile compartment flag review. And the things that we are working on there is exactly as you said, transfer of lessons learned.

So the common missile compartment, the first five missile tubes have been delivered to Quonset Point. Four of those will become the first article quad pack for the *Columbia*. The fifth one goes to Port Canaveral, Florida, for the—or Cape Canaveral, Florida, for the Strategic Weapons Systems Ashore facility.

And then the next four tubes will become the first quad pack for the *Dreadnought*, the U.K. SSBN replacement. And that is the way it was planned for, exactly as you said, for us to learn all the lessons on the first four tubes that are going to the U.S. boat so that it eases the timeline and the production for the *Dreadnought* on the U.K. And it is going well.

Secretary GEURTS. And, sir, on our facilities piece, we have to, as we grow, and Congressman Courtney brought up, we have got to make sure we have got maintenance and repair, both program—healthy for the work we have and then programmed to be able to take the work that will come as we expand the fleet on it. And we have put together a facility optimization plan on the public shipyard side to make sure the public shipyards are going to be in a position to support all these programs, and then we are looking closely at how to better synchronize a new build, repair, and then retirement, again, looking at workforce and facility usage and efficiency across the entire fleet.

Mr. LANGEVIN. Thank you all very much. I have some followups, but my time is way expired, so, Mr. Chairman, I will yield back.

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

We will now go to Mr. McEachin.

Mr. MCEACHIN. Thank you, Mr. Chairman.

The 30-year shipbuilding plan the Navy projects said the overall attack submarine force structure will decrease to 42 attack submarines. My question is, considering the undersea domain is one area where we have a significant tactical advantage over other nations, how does this diminishment of the force structure support our advantage?

Admiral TAMMEN. So, first and foremost, I would like to thank this committee in particular for the strong support we have had for the submarine force, because it does ensure that we do have the best submariners on the best submarines available.

And to your point, we do have that advantage. And I think these refuelings that we are getting after will do a large part to get—keep us from getting down to 42. If you just do the math, if we do all 5 refuelings, it will roughly be 47 issues will be—you know, most of that trough, I mentioned earlier, being filled back in. And then any efforts to get us above the two per year would help us get to the actual Force Structure Assessment requirement of 66 sooner rather than later.

Mr. MCEACHIN. Last year, the Navy estimated that if the continuous production authority was extended to other critical components, \$383 million in additional savings could be achieved. The Navy further stated that they would need this authority by 2019 to achieve the full savings. Unfortunately, the fiscal year 2019 Presidential budget did not request these additional authorities. Can you please explain why the Navy has chosen not to pursue these additional savings?

Secretary GEURTS. Yes, sir. You know, again, as we stated, the authorities have been doing outstanding work for us and been very impactful. Our challenge in the 2019 budget, with all the different priorities, including \$3 billion of advanced procurement for *Columbia*, was we just—we couldn't add the money in there that we would have liked to and we had to balance it out. But I would not

confuse that for any lack of both appreciation of the authorities and the potential savings. But in terms of just balancing the resources, we couldn't achieve that with the 2019 funds we had.

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

Mr. WITTMAN. Thank you, Mr. McEachin.

We will now go to Mr. Garamendi.

Mr. GARAMENDI. I thank you, Mr. Chairman.

Just a couple of things. We keep repeating here the need for skilled workers and the potential unavailability if we don't keep to schedules. Does the Navy have a program to develop skilled workers?

Secretary GEURTS. Sir, I will start out and then invite my two folks here.

On the public yard side, we have laid in, starting in fiscal year 2019, a 20-year plan that both grows on the public shipyard side the number of skilled workers to balance it with the workload we see, as well as make sure they have the facilities we need.

On the private yard side, our challenge is what is the best strategy to deal with the kind of ebbs and flows right now, and then, you know, as Rep. [Representative] Courtney will—has heard me say, I call it the big green wall of this giant growth we are going to have to do on *Columbia*.

I think there are opportunities as we look at both repair availability and then using some of these continuous production authorities, to try and balance that workload, but we still have work to go on on all the best strategies to get there.

Mr. GARAMENDI. Further comments?

Admiral JABALEY. Yes, sir. I will just add that on the private yard side, the Navy has worked very closely with both Electric Boat and Newport News as part of the integrated enterprise plan to ensure that their plans for growing the workforce are valid and sound. And they have both done significant amount of work working with, in Electric Boat's case, community colleges in Connecticut and Rhode Island to provide a higher level of proficiency when the worker walks in the door. They have hired almost 1,000 people over the last year out of that community college pipeline and are already seeing the benefits of that, the new employees in the workforce being more proficient on day one.

Newport News approaches theirs through an apprentice school, and they are increasing the capacity of that to ensure that they can handle the ramp-up. So they both have very strong plans, and we are working with them to make sure that they stay solid.

EB's [Electric Boat's] was greatly aided by funding from the Department of Labor to help that process, and that was extremely helpful.

Mr. GARAMENDI. And so the Department of Labor budget and appropriations become important?

Admiral JABALEY. Absolutely, sir. They are something that Electric Boat has used very wisely in grooming their workforce.

Mr. GARAMENDI. Further comments?

Admiral TAMMEN. Nothing additional.

Mr. GARAMENDI. Okay. Well, it just seems to me that all of the talk about smoothing out the construction of these submarines has a great deal to do with the workforce, every piece of the discussion.

There is also an age demographic issue that plays into this. I would suppose that you are paying attention to that also, retirements and the like. And the coordination of the career technical education programs that are being presumed to be defunded in the President's budget and how that plays into this or it does not meet the needs of the Navy. And if those budget cuts continue or actually happen, how will the Navy deal with that?

Secretary GEURTS. Yes, sir. I think demographics is a very challenging issue. There is also some opportunities in the technology front. And as Admiral Jabaley has said, as we go to digital shipbuilding and use some of the digital tools, our ability to get the skill level of the worker up faster, we are seeing some of the opportunities there. But we are very sensitive to that pipeline.

And as was noted earlier, it is not something that can be fixed rapidly if we don't keep our eye on it. So we keep a very close look at that, as well as all the different government and State programs that support our shipbuilding.

Mr. GARAMENDI. I will let it go at that. I yield back, Mr. Chairman.

Mr. WITTMAN. Thank you, Mr. Garamendi.

Gentlemen, trying to draw a thread through some of the questions that you have received, you have had inquiries about how do we deal with the dip in submarines we are going to find ourselves in in 2028. So I want to ask several questions.

First of all is, if we don't go above 42 submarines in 2028, what is the strategic risk to our Nation? Secondly is, we have heard two alternatives to the 42, I think both of them in combination. One is building more submarines, up to 3 additional submarines in the Block V, in addition to the 10 *Virginia* Payload Module submarines; and then using 5 existing nuclear plants to do service life extensions on the *Los Angeles*-class submarine, so a potential of 8 in addition to that. So that would bring us potentially up to 50.

But first of all, what are the strategic risks to the Nation? And what will that mean for our sailors and for our Navy and for where we are to defend ourselves in light of what the National Defense Strategy has laid out before us? And then what specific congressional directions or authorities do you need to fully pursue the three additional Block V submarines and the five service life extensions for *Los Angeles* class?

Secretary GEURTS. All right. So I will have Admiral Tammen address the strategic issue, and then I will address your second question.

Mr. WITTMAN. Okay. Very good.

Admiral TAMMEN. To start off, you captured it pretty well in your opening statement when you talked about deterrence and then options available to the combatant commander. And it is really hard to mention deterrence, but I will tell you that, you know, the fact that our attack submarines are always operating or at least a portion of them are operating far forward provides that conventional deterrence to keep potential adversaries in check.

And I would say, you know, a 20 percent reduction in attack submarines will then ultimately result in a, you know, a lower number of options available to the combatant commander if conflict does break out.

Then the other thing I would offer is, you know, the submarine platform, because of its stealth, offers the combatant commander and the National Command Authority, you know, very unique intelligence and warning, as well as intelligence, surveillance, and reconnaissance-type data. And without that, I think they are less informed as we move forward, which provides some additional strategic risk.

Mr. WITTMAN. Let me ask just an additional question before I go back to Mr. Geurts. Looking at the Nuclear Posture Review and the definitions there of what hopefully will happen with the development of a low-yield nuclear weapon that is going to be sea based and a hypersonic weapon potentially sea based, how important will the submarine platform, specifically *Virginia* class, including *Virginia* Payload Module, be in providing options for the Navy within that realm and deterring what our adversaries may have in their arsenals?

Admiral TAMMEN. So I would offer, in terms of the submarine launched cruise missile with a potential nuclear warhead would be something that would be incorporated on *Virginia* with the *Virginia* Payload Module and give National Command Authority an additional tool for escalation control. Whereas, the low-yield warhead would be incorporated likely in a D5 missile incorporated on a ballistic missile submarine, which would give Strategic Command another tool in their arsenal in terms of escalation control and how things would play out.

Mr. WITTMAN. Okay. Very good.

Mr. Geurts, we will go to you about the congressional authorities that you may need to bridge this gap we will face in 2028.

Secretary GEURTS. Yes, sir. I don't know of any additional authorities as much as, you know, these signals that you were sending through legislation with the 355, which includes 66, as well as the interest in hearings like this and the dialogue and the great support you had. And, quite frankly, adding funds, as you fought hard for in 2018, to recognize the supplier base, irrespective of growing another submarine, are instrumental.

So, again, we look at things at both the shipyard and then the millions of parts that have to go into each ship, and we have got to look all the way across those.

I would say, you know, our big push over the last couple years was get confidence we could reliably and affordably crank out two *Virginia* classes a year. We are there. We are demonstrating that 2 years early. You know, we are going to save \$5.4 billion in this next multiyear. So that is a great contribution. That gets us to a performance level.

Now, we are convincing ourselves we can do that plus *Columbia*. Some work to go in terms of all the de-risking there, but I am confident we are on the right path there. So now, it is how do we set sails for three per year, whether that is two plus one or just three *Virginias*. I think we can get there. We have been doing a lot of studying that, and then it is just how do we do that affordably and get spun up on that ramp curve. And I am confident we have got the means to get there.

When I look at things, I look at it—naval power is a combination of capacity, this discussion here, capability, what are we putting on

those, and we have got the most capable submarines in the world and a great path that continue to grow those. And then availability. So that is how do we either extend their lifetime or don't have backlog sitting on the pier. We are attacking each one of those elements. I think all of those together gets us the naval power we need.

Mr. WITTMAN. I see. I would have to agree with you as far as the future needs within the submarine force and the way that we can grow that. I would also believe that it would be very helpful and is the desire of this subcommittee to provide that authorization, that direction as far as extending the service life of those *Los Angeles*-class submarines, as well as aggressively as we can trying to get to those three additional *Virginia*-class submarines. So we will look for that within our job here in the weeks to come as we go into this markup for this year's National Defense Authorization Act [NDAA].

So with that, we will go back to Mr. Courtney.

Mr. COURTNEY. Thank you, Mr. Chairman.

And I should note that as cold as we were with the USS *Colorado* the other day, we weren't as cold as Mr. Garamendi was, who was up on the polar ice cap over the weekend.

Actually, I wanted to ask Admiral Tammen, you know, one of the things that—I mean, it seems we have so much on our plate, obviously, to deal with the next 10 or 15 years. But, you know, I know the Navy is always sort of thinking ahead in terms of, you know, whether or not there is a new prototype—a new version of an SSN, you know, that, again, will be—which because of such a long game, you know, you have to sort of think long term.

I was wondering if you could just sort of talk about that a little bit in terms of just, you know, whether or not that is something that the Navy is thinking about, and doing something about, and what timeframe we are, you know, considering.

Admiral TAMMEN. Absolutely. So you are obviously familiar with the 30-year shipbuilding plan, and part of the 30-year shipbuilding plan was what we call the Tactical Evolution—or Tactical Submarine Evolution Plan, the TSEP. And in there we lay out our plan for Block V, Block VI, and Block VII *Virginia* and the capabilities we are going to roll into each one of those spiral jumps in *Virginia* procurement. And then following Block VII, you will see we have laid in what we are calling new SSN, where we expect to develop the next attack submarine, looking at increased speed and other capabilities.

Mr. COURTNEY. Thank you.

I know, you know, we sort of had a—there was a bit of a gap, you know, back in the late 1990s, early 2000, particularly in terms of the SSBN program where there was absolutely no design work happening at all. And that, A, created a workforce almost crisis, which the RAND Corporation had to sort of get Congress to pay attention to.

And so, you know, keeping that sort of in mind, I think, is really smart in terms of, you know, again, making sure that, you know, we are not going to run into what the Brits ran into with their submarine program and what we almost fell into in the early 2000s.

So thank you, again, to the witnesses for your testimony today.

Mr. WITTMAN. Thank you, Mr. Courtney.

We will now go to Mr. Garamendi.

Mr. GARAMENDI. Thank you, Mr. Chairman.

Mr. Courtney, you raised a point that I was just going to slide by, and that is the opportunity I had over the weekend to spend several hours on the *Connecticut*, which I think is of interest to you. Extraordinary experience. I thank the Navy for that experience and what I was able to learn.

I see Mr. Hollenback back there, who has already provided me with the answers to a few questions that I raised. Thank you very much, and a lot more to be said about that as time goes on. Thank you.

Mr. WITTMAN. Thank you, Mr. Garamendi.

I wanted to—well, before I do that, Mr. Conaway, any additional questions?

I did want to close with one question concerning *Columbia* class. We got into a little bit of it with the permanent magnet induction motor and the challenges that were faced there. As you know, that has consumed a significant amount of the flex time that is in the schedule for delivery of that submarine.

I just wanted to get your perspective on our ability to contain technical challenges. This is a very, very complex platform, obviously, going down the road of developing this. The question is, is with the significant amount of time that we lost with this particular motor dysfunction that we had, are we in a place to where we are confident that we can manage the technical challenges that we are going to face going forward with *Columbia* class?

Because we have become precariously close to what you would expect as other, you know, challenges that we faced in other technically complex programs. I want to get your perspective if you feel like we have our arms around that and if we are going to be able to make sure that we manage within timeframes for delivery of this boat on time. As we know, we don't have a choice. There is no alternative. We have to deliver this because *Ohio* class will be retiring.

Secretary GEURTS. Yes, sir. I will start and then ask the PEO to join in.

From my perspective, yes, we have had some challenges on the motor in particular. I think in the good-news category, that didn't stop us from retiring risk in a lot of the other areas of the submarine, particularly, again, some of the work we have done in—this early work on the missile tubes and whatnot.

And a lot of folks probably don't understand how much *Virginia* is actually helping us retire risk on *Columbia*. So getting this production rate up to *Virginia* two per year, getting a larger workforce trained, a lot of the subsystems cut across all the different platforms.

So while it is a new submarine, not all the pieces of the submarine are new, and that is giving us a lot of—it gives me a lot of comfort from what would normally be a, you know, tremendously challenging activity.

It is still a very challenging and complex activity. I don't want to push that down. But we have been working really hard, and the

advanced procurement funding that we have been able to secure has been critical.

To your point of schedule, one thing we will be watching really closely is, next year, getting full funding as soon as the fiscal year starts. And that may be an area where we will need some help, if we are in a continuing resolution [CR], so that that doesn't become a schedule impact to us, which will take more of that margin out.

So we will work very closely with you. That is a sensitive area from an authorities and just fiscal timing perspective.

Mr. WITTMAN. Well, I am eternally hopeful that we will not get another CR next year. There is no reason for us to be, especially with the budget agreement that we had this past year. And as I tell people all the time, if you were to dream up a way not to run a business or not to run a government, what would you come up with? A CR. So anyway, hopefully that we will avoid that.

We will now go to Mrs. Hartzler.

Mrs. HARTZLER. Thank you. I appreciate that, Mr. Chairman. Yes, I do have to leave soon, so I appreciate it.

The recently released 30-year shipbuilding plan shows additional submarine build capacity in the years 2022 and 2023. What would be the most economic and efficient way to fund those additional submarines if Congress were to make that commitment beginning in fiscal year 2019?

Secretary GEURTS. Yes, ma'am. I think the most efficient way would be to get those into the multiyear, which would mean that we would have to have some economic order quantity funding in 2019 commensurate with those two additional ships so that we could buy at a quantity for those ships, along with the other ships. So that would be the first plug-in point for that.

And then we would have to work, obviously, the funding for the rest of it. But that will be the sensitivity in the 2019 budget, would be ensuring we could order all those parts at the quantity savings we would get with the rest of the multiyear.

Mrs. HARTZLER. Very good.

The *Columbia* class has several technology development programs that are challenging design and construction efforts, including the coordinated stern electric drive and the nuclear propulsion system. What is the Navy's assessment of risk associated with the development of these technologies and recovery efforts to regain schedule?

Admiral JABALEY. Thank you for the question, Congresswoman. The Navy's assessment is that the risk is manageable and well in hand. We have done things on this program to account for technology development risk that are beyond what we have done on previous submarine construction programs.

As Secretary Geurts alluded to previously, one of the biggest ones is the amount of design pull-through from the *Virginia* program. Many of the components are either identical or simply scaled up from the *Virginia*.

The second thing is the level of design readiness at construction start. We are targeting, and are on track, to achieve 83 percent complete design when we start construction in October of 2020. That compares to 42 percent on *Virginia*, and even lower percentages on *Seawolf*. So having that design stability and execution al-



lows us to be more confident in the ability to build it in the time span necessary.

Finally, many of the items that you discuss—the coordinated stern, the integrated power system, and the nuclear reactor—are well on their way through a series of prototyping effort and confirmation models to ensure that they are well ready for ship construction. They are beyond technology development now and into simply engineering and integration efforts.

So although there has been a lot of discussion about this recently, we are confident that we are well positioned to start construction on the first ship in October of 2021 and have very few technological risks through the development program.

Mrs. HARTZLER. Very good. Anybody else want to add anything? We are all good?

All right. Thank you very much, gentlemen.

I yield back.

Mr. WITTMAN. Thank you, Mrs. Hartzler.

Gentlemen, thanks again for joining us today and for the information you have provided to us. We will continue to stay in touch as we go through this year's NDAA to make sure that you have the tools necessary to stay on track with the *Columbia* class and do all we can to address the deficit of submarines in the attack class it will have going in 2028.

So, again, thanks so much for your service. Thanks for joining us today. And we are adjourned.

[Whereupon, at 3:38 p.m., the subcommittee was adjourned.]



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# **A P P E N D I X**

MARCH 20, 2018

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**PREPARED STATEMENTS SUBMITTED FOR THE RECORD**

MARCH 20, 2018

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**Opening Remarks of the Honorable Robert J. Wittman  
for  
Submarine Industrial Base: Options for Construction  
March 20, 2018**

Today, we meet to discuss undersea warfare and options to ease the impending overall reductions in the submarine force structure. This is not a good news story and I look forward to discussing ways to strengthen our undersea capability and capacity. Appearing before us to discuss this important topic are three esteemed Navy witnesses:

- Honorable James Geurts  
Assistant Secretary of the Navy, Research, Development & Acquisition;
- Rear Admiral Michael E. Jabaley  
Program Executive Officer for Submarines; and
- Rear Admiral John W. Tammen Jr  
Director, Undersea Warfare Division (OPNAV 97).

I want to thank you all for your service as well as for appearing before this subcommittee to discuss our undersea force structure.

As I have previously discussed, the world watches our budget deliberations and decisions we make. Today, we are at a crossroads in regard to our undersea forces. We are currently on a path that reduces our attack submarine force structure from 52 boats today to 42 boats in 2028. Admiral Harris, our PACOM commander, constantly reminds us that his most critical shortfall is attack submarines. As we all know, the silent service is indispensable as a method to deter aggression and offers the combatant commander options during escalatory conflict. Our crossroads offer us two options. One continues to support the decline in our attack submarine force structure by 20 percent in the next ten years. The other begins to rebuild the capacity and reverse this downward trend.

Our adversaries are always measuring options and looking at our funding decisions to determine how they impact their own strategic goals. If America is weak, adversaries are emboldened to challenge the international system that we have principally shaped since the last great war. If we continue to allow the reduction in our attack submarines, potential adversaries may see this decline as a strategic inflection point and opportunity to attempt to change the international balance.

I support the alternative path. Consistent with the Navy's 30 year shipbuilding plan, we need to increase our attack submarine build rate and include additional submarines in fiscal years 2022 and 2023. Additionally, we need to rapidly extend the service life of available Los Angeles attack submarines. If we choose this alternative path, we will demonstrate the resolve of our nation and affirm our support to maintaining credible maritime deterrence to potential aggressors.

I also want to briefly discuss the Columbia class. The Columbia class is projected to carry almost 70 percent of our nation's strategic deterrence. This is a program that we cannot get wrong. The first boat is expected to deliver in 2031 and we are well on the development path that will allow us to authorize the first boat in 2021. The program includes a myriad of technical innovations and, when delivered, will offer an unrivaled strategic capability. While I am satisfied that PEO Subs is on the right path to deliver Columbia class, we must continue to commit our nation's best resources to this challenge. We must devote the right science and technologies to this effort. And we must develop a capable workforce to ensure the timely delivery of the Columbia-class and appropriately manage the expanding undersea industrial base. Our nation is ready for this challenge.

I am reminded of one of our nation's greatest admirals, Chester Nimitz who reflected on the value of our submarines at the beginning of World War II. Admiral Nimitz indicated "we shall never forget that it was our submarines that held the lines against our enemies while our fleets replaced losses and repaired wounds." I choose not to forget the lessons from our greatest generation. I choose the alternative path that puts us on a track for a strong submarine force. I choose a strong America that emboldens allies and deters future aggression.

Ladies and Gentlemen, I hope you choose the same.

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



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THE HOUSE ARMED SERVICES COMMITTEE  
SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES

STATEMENT OF

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BEFORE THE

SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

SUBMARINE FORCE STRUCTURE LIMITATIONS AND EXPANSION OPTIONS

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SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES

Chairman Wittman, Ranking Member Courtney, and distinguished members, thank you for the opportunity to appear before you today to address the submarine force structure limitations and expansion options. We would like to take this opportunity to thank the Congress for your support of the Bipartisan Budget Act of 2018. Enactment of this legislation will help provide the predictability and stability in funding that is critical to our success and will support our efforts to affordably procure ships, reduce risk across programs, and maintain a viable industrial base.

The U.S. Navy's submarine force is experiencing a significant growth in demand and must expand to support the 2018 National Defense Strategy. The maritime dimension of the National Defense Strategy is to increase American naval power by building the Navy the Nation Needs. To do so, we must deliver the Undersea Warfare component by ensuring the submarine force has the submarines and capabilities necessary in this rapidly changing, technology-driven world, where adversaries' challenges are felt in every operating domain.

Today's battle force consists of 14 OHIO Class ballistic missile submarines, four OHIO Class guided missile submarines, three SEAWOLF Class attack submarines, 33 LOS ANGELES Class attack submarines, and 15 VIRGINIA Class attack submarines, for a total of 51 attack submarines as of 1 March 2018. The Navy's Force Structure Assessment (FSA), released in December 2016, defined a requirement of 66 attack submarines and 12 ballistic missile submarines as part of the 355-ship Navy. The *Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2019* is the roadmap that will grow the fleet through steady, sustainable growth, including the sustainment of the industrial base, with select aggressive growth options, and service life extensions. In doing so, it charts a course to reach 66 attack submarines by Fiscal Year (FY) 2048, with the potential to achieve the requirement sooner with increased investment.

The COLUMBIA Class ballistic missile submarine program, the replacement for the OHIO Class, is the Navy's top shipbuilding priority. It is imperative that the lead COLUMBIA Class be on patrol in FY 2031 to meet the U.S. Strategic Command requirements. The program is executing detail design efforts in preparation for ordering long lead time material starting in Fiscal Year (FY) 2019. To ensure COLUMBIA remains on track for start of lead ship construction in October 2020, the program requires its full FY 2019 funding requirement on October 1, 2018, to place contracts to procure long lead time material. Cost, schedule, and

technical performance are being very tightly managed to ensure this critical, strategic capability will be delivered on time at an affordable price to meet national strategic deterrent requirements. The Navy's management attention is focused on four main areas: stable operational and technical requirements, high design maturity at construction start, detailed plans to ensure manufacturing readiness including robust prototyping efforts and aggressive cost reduction actions.

#### **Requirements/ Tactical Submarine Evolution Plan**

Undersea forces provide the United States with unique military advantages essential to our international influence, our alliance partnerships, and our national security. These advantages include the ability to independently forward operate for long periods of time without logistics support, providing insight into adversary activities in contested environments, with the ability to immediately deliver offensive effects as part of an integrated force package or as a “lone wolf” operating under general commander’s guidance, degrading adversary capability, to enable all domain access, and by creating ambiguity and uncertainty in the minds of our adversaries. Underlying and enabling these capabilities is our most significant advantage, the best trained, most experienced submariners in the world; officer and crews capable of taking the fight to wherever it is needed, whenever it is needed, and for as long as it is needed. Combatant commanders leverage these advantages to achieve a spectrum of objectives, such as deterrence, intelligence collection, non-provocative force positioning and monitoring in support of diplomacy, immediate kinetic options if diplomacy fails, assured access, adversary disruption, cost-imposition, and shaping adversary strategic choices – all with a single, invisible, cross-domain platform.

The two fundamental warfighting imperatives that align our highest priority investments are Strategic Deterrence and Theater Undersea Warfare, both of which have clear applicability in peace and war.

For the Strategic Deterrence mission, our primary charge is to provide a survivable, effective sea-based strategic deterrent against the only existential threat to the United States – Strategic Attack. 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 Navy’s top warfighting investment priority is Strategic Deterrence which includes delivering 12 COLUMBIA Class

ballistic missile submarines on-time, sustaining OHIO Class ballistic missile submarines through their end of life, and sustaining the D5 Strategic Weapons Systems.

For Theater Undersea Warfare, our top investment priorities are sustaining an adaptable and agile force which includes delivering at least two VIRGINIA Class SSNs per year, investing in asymmetric advantages, and developing diverse payloads including torpedoes, missiles, and unmanned undersea vehicles. We execute efficient development and acquisition processes through our Tactical Submarine Evolution Plan (TSEP). The TSEP aligns futures analysis, adversary trends, platform-focused long-term science and technology efforts, research and development, conceptual work, detailed design, concept of operations development, requirements setting, and programmatic planning into a rational, explainable plan that seeks to ensure cost-efficient delivery of capability on a schedule that is connected to operational military needs.

The VIRGINIA Class Attack Submarine (SSN) program is continuing to deliver submarines within budget and with increased capability in each block. The Navy will build on past success by awarding a Block V Multiyear Procurement contract for 10 ships in FY 2019, continuing the two-per-year build rate from the FY 2018 budget request while also introducing the VIRGINIA Payload Module and Acoustic Superiority changes.

#### **Authorities & Authorizations**

We appreciate the support Congress has provided to facilitate submarine construction. The enhanced authorities made available via the National Sea-Based Deterrence Fund for COLUMBIA have provided the opportunity to reduce risk to COLUMBIA construction and realize efficiencies. Most importantly, the authority for Advance Construction will allow us to reduce the risk for COLUMBIA lead ship construction timeline, and the authority for Continuous Production of missile tubes benefits both COLUMBIA and VIRGINIA Class programs with the coordinated procurement of large diameter tubes. Advance Construction has an ancillary benefit of enabling early exercise of shipbuilder and supplier manufacturing and material ordering, thereby strengthening select areas of the supplier industrial base. As an example, in FY 2018, the COLUMBIA Class Program initiated procurement of numerous long lead time components in support of the Lead Ship manufacturing and assembly plan. These component orders will not only de-risk the build schedule but will also allow critical suppliers

to begin their increase in material ordering and manufacturing capacity earlier than otherwise would be possible.

The COLUMBIA Class program is on track to start construction in October 2020 and deliver to pace the retirement of our current ballistic missile submarines with the first patrol scheduled for October 2030 (FY 2031). The Navy will continue to review additional opportunities to reduce cost, schedule, and performance risk to all our programs and we will continue to work closely with the congressional defense committees.

Although the FY 2018 National Defense Authorization Act (NDAA) authorized up to 13 SSNs in the VIRGINIA Block V Multiyear Procurement contract (covering FY 2019 through 2023), the Navy requests 10 SSNs over this period. The Navy's FY 2019 President's Budget is based on a balanced warfighting investment strategy across the six pillars of the Navy the Nation Needs – Readiness, Capacity, Capability, Manning, Networks and Operating Concepts.

#### **Reaching 66 SSNs**

The *Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2019* is the roadmap to attain a 355-ship fleet, prioritizing three elements that the Navy is pursuing to grow the force: (1) Steady, sustainable growth and an establishment of minimum baseline acquisition profiles that grow the force at a stable, affordable rate; (2) Aggressive growth that more rapidly attains the same warfighting requirements as increased resources and industrial capacity permit; and (3) Service life extensions that account for the potential additional service life that can be gained through restoration and modernization based on capability improvement costs versus unit replacement criteria.

The Navy's 2016 FSA defined the requirement of 66 SSNs as part of the 355-ship Navy. The *Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2019* proposes to achieve this requirement by building two SSNs per year. This will result in the Force Structure increasing to 66 SSNs in FY 2048, with planned continued construction beyond FY 2048 of two per year to maintain that level. The Navy has evaluated options to extend the service lives of in-service ships, including LOS ANGELES Class SSNs. A complete summary of this review will be included in a report that will be submitted to Congress in June 2018 as directed by the FY 2018 NDAA. Service life extensions provide near-term opportunities to sustain inventory and achieve the Navy the Nation Needs requirements more rapidly, however, they are

relatively short-term solutions and must be carefully balanced with the steady long-term growth profiles to ensure overall higher numbers when the extended service lives expire. Based on the delivery profile and retirement plan laid out in the *Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2019*, the inventory of attack submarines will reach its lowest point, 42 SSNs in FY 2028.

To mitigate this shortfall the Navy has carefully monitored fuel consumption and material conditions of the LOS ANGELES Class SSNs to take advantage of any possible service life extensions. This analysis has identified five LOS ANGELES Class SSNs that could be refueled, extending their service lives by as much as 10 years, the first of which has been programmed in the FY 2019 President's Budget Future Years Defense Program.

#### **Supplier/Industrial Base**

The ramp up of the nuclear shipbuilding industrial base represents one of the more significant challenges to building the Navy the Nation Needs and to support the concurrent production of the COLUMBIA Class, VIRGINIA Class, and FORD Class carriers. In addition to the prime nuclear shipbuilders, the capability and capacity of key vendors to provide quality material on-time is crucial for meeting submarine and carrier enterprise construction goals. The industrial base can support this challenge with improvements at the prime shipbuilders and suppliers in the areas of workload stability, facilities, and recruitment and retention of skilled resources.

To meet this challenge and ensure the readiness of the industrial base, the Navy and General Dynamics Electric Boat (GDEB) and Huntington Ingalls Industries Newport News Shipbuilding (HII-NNS) have established the Integrated Enterprise Plan (IEP). As part of the IEP, the shipbuilders have conducted an assessment of the material and supplier base and identified 329 suppliers as being the most critical to meeting COLUMBIA, VIRGINIA, and FORD Class requirements. Of these suppliers, 277 can meet current and future demand, however, 44 will be challenged to meet future requirements, and eight have been found to be challenged to meet even current demand. This indicates that approximately 15 percent of the critical suppliers supporting nuclear shipbuilding construction require improvement plans to meet future requirements.

The Navy and shipbuilders have jointly established action plans with each of the critical suppliers in need of improvement. In many cases, those plans require that the shipyards invest in new facilities and increase their workforce. The Navy will work closely with the shipbuilders and suppliers to reduce this risk.

#### **Maintenance Industrial Base**

The Navy's four public shipyards accomplish the majority of the depot level maintenance required to ensure the Navy's submarines are available to meet the nation's needs. The current naval shipyard nuclear maintenance capacity is still recovering from years of workforce and workload imbalance. The public shipyards have taken significant steps to hire additional workers and improve training and workforce performance over the past five years, as witnessed by the reduced lost days on submarine availabilities in 2017. In addition, the Navy has competitively outsourced four submarine maintenance availabilities to the private shipbuilders (GDEB and HII-NNS) in the past three years. By the end of 2018, the public shipyards will have hired sufficient personnel to execute the currently planned work. The Navy will continue to factor in the health of the private sector nuclear submarine industrial base in evaluating future workload to provide the potential for smoothing workload peaks and valleys in the private yards and help to facilitate the recruitment and retention of the skilled workforce needed to support the concurrent production of submarines and aircraft carriers.

The naval shipyards have had no major recapitalization efforts since the early 20th century and the facilities and supported functions are not arranged or configured to best support nuclear submarine depot maintenance throughput. In response to the FY 2018 NDAA, the Secretary of the Navy provided a report to Congress on the Shipyard Infrastructure Optimization Plan in February 2018. The report provides the optimal placement of facilities and major equipment at each public shipyard, including a 20 year investment plan for infrastructure investments needed to improve shipyard performance. The plan focuses on dry dock recapitalization, facility layout and optimization, and capital equipment modernization.

The FY 2019 President's Budget requests a dry dock project at Portsmouth Naval Shipyard to support the VIRGINA Class. Projects like this begin to arrest the capacity deficit which may be further aggravated by unplanned emergent U.S. Navy Fleet repairs and

unanticipated national security contingencies. Your support of this project will help maintain major maintenance period (availabilities) schedules and mitigate dry dock obsolescence.

Most naval shipyard capital equipment infrastructure is well beyond effective service life, obsolete, unsupported by original equipment manufacturers, and at operational risk. Continued reliance on this aged equipment infrastructure increases submarine depot maintenance availability costs and places schedules at risk. Equipment investments, such as the FY 2019 President's Budget requested Ships Maintenance Facility in Portsmouth and the Drydock Waterfront Facility at Pearl Harbor, are needed to support new mission requirements, including LOS ANGELES Class refueling evolutions at Portsmouth Naval Shipyard, concurrent VIRGINIA Class availabilities at Portsmouth Naval Shipyard and Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility, and VIRGINIA Class introduction at Norfolk Naval Shipyard.

#### **Conclusion**

We would like to thank the Committee for the opportunity to be here today to speak with you on the submarine force structure and our plan to help achieve the Navy the Nation Needs. The Navy's submarine force continues to operate forward, fully prepared to support the full range of military operations while managing steady, sustainable growth in the force that is flexible to increased resources and industrial capacity, and working to stabilize the new construction and maintenance industrial base - setting the foundation for growing the force towards its warfighting requirement.



**James F. Geurts**  
**Assistant Secretary of the Navy**  
**(Research, Development and Acquisition)**  
**12/5/2017 - Present**

On Dec. 5, 2017, Mr. James F. Geurts was sworn in as Assistant Secretary of the Navy for Research, Development & Acquisition (ASN (RD&A)), following his confirmation by the Senate November 2017. As the Navy's acquisition executive, Mr. Geurts has oversight of an annual budget in excess of \$60 billion and is responsible for equipping and supporting the finest Sailors and Marines in the world with the best platforms, systems and technology as they operate around the globe in defense of the Nation.

Mr. Geurts previously served as the Acquisition Executive, U.S.. Special Operations Command (USSOCOM), at MacDill Air Force Base (AFB), Florida, where he was responsible for all special operations forces acquisition, technology and logistics. In this position his innovative leadership and technological ingenuity provided rapid and affordable acquisition that positively impacted the USSOCOM acquisition work force and the special operations forces capability on the battlefield. These contributions were recognized by both private and public institutions during his tenure to include earning the Presidential Rank Award, USSOCOM Medal, William Perry Award and Federal Times Vanguard Award for Executive of the Year.

Prior to Senior Executive Service, Mr. Geurts began his career as an Air Force officer where he served as an acquisition program manager with engineering and program management leadership positions in numerous weapon systems including intercontinental ballistic missiles, surveillance platforms, tactical fighter aircraft, advanced avionics systems, stealth cruise missiles, training systems and manned and unmanned special operations aircraft.

He has over 30 years of extensive joint acquisition experience and served in all levels of acquisition leadership positions including Acquisition Executive, Program Executive Officer and Program Manager of Major Defense Acquisition Programs.

Mr. Geurts is a distinguished 1987 ROTC graduate from Lehigh University where he received a Bachelor of Science in Electrical Engineering. He holds a Master of Science in Electrical Engineering from Air Force Institute of Technology, Wright-Patterson AFB and in National Security Resourcing from Industrial College of the Armed Forces, National Defense University, Washington, D.C. Mr. Geurts also attended executive leadership and international studies programs at Harvard Kennedy School and George Washington Elliot School.

Updated: 19 December 2017

**Rear Admiral Michael E. Jabaley**  
**Program Executive Officer for Submarines**

A native of Jackson, Mississippi, Rear Adm. Michael Jabaley graduated with high honors from Vanderbilt University in 1984 with Bachelor of Science in Mathematics and Computer Science, and was commissioned via Officer Candidate School in Newport, Rhode Island.

Jabaley holds a master's degree in engineering administration from Virginia Tech, a master's degree in business administration from the Naval Postgraduate School, and is a graduate of the Command and Staff Course of the Naval War College and of the Joint and Command Staff Officer School of the Armed Forces Staff College (National Defense University). Jabaley's sea tours include assignments aboard USS Drum (SSN 677), USS Ohio (SSBN 726), USS City of Corpus Christi (SSN 705) and command of USS Louisville (SSN 724) from May 2002 to August 2004.

On shore, Jabaley has served on the staff of commander, Submarine Group 8 in Naples, Italy; as a technical assistant to the director, Naval Nuclear Propulsion; on the staff of the Joint Chiefs of Staff as an operations officer in nuclear operations; as senior inspector of the Tactical Readiness Evaluation Team and Force Navigator on the staff of commander, Submarine Force, U.S. Pacific Fleet; and as deputy commander, Submarine Squadron (SUBRON) 1 in Pearl Harbor. Jabaley served in the Virginia Class Submarine Program Office from 2006 to 2012, the last four years as program manager, delivering four of the Navy's newest fast attack submarines.

Jabaley was selected for flag rank in 2011. His flag assignments include Naval Sea Systems Command (NAVSEA) vice commander, command of Naval Undersea Warfare Center and NAVSEA deputy commander for Undersea Warfare. Jabaley was selected for his second star in March 2015 and relieved as program executive officer (PEO) Submarines in October 2015. His portfolio includes the Ohio Replacement SSBN and Virginia SSN programs, which are the 2nd and 3rd largest programs in the Department of Defense.

His awards and decorations include the Legion of Merit and the Bronze Star. He is the first recipient of the Naval Submarine League's Vice Admiral J. Guy Reynolds Award for Excellence in Submarine Acquisition. He is proudest of the accomplishments of his crew in earning the SUBRON-3 Battle Efficiency Award, awarded to USS Louisville in January 2004, and the accomplishments of his staff in earning the David Packard Excellence in Acquisition Award, awarded to the Virginia Program Office in October 2008.

**Rear Admiral John W. Tammen, Jr.**  
**Director, Undersea Warfare Division**  
**Office of the Chief of Naval Operations, N97**

Rear Adm. John Tammen is a native of Washington Township, New Jersey. He graduated from Rensselaer Polytechnic Institute with a Bachelor of Science in Mechanical Engineering and earned his master's degree in engineering management from Old Dominion University.

His career as a nuclear submarine warfare officer includes assignments aboard USS Plunger (SSN 595) as a division officer, USS Nevada (SSBN 733) as the engineer officer and then USS Providence (SSN 719) as the executive officer. Subsequent command assignments include commanding officer of USS Georgia (SSBN/SSGN 729) and commodore of Submarine Squadron (SUBRON) 19.

Ashore, he has served as officer in charge of the Combat Systems Training Team on the staff of Commander, Submarine Group 5; squadron engineer on the staff of Commander SUBRON-17; Force Nuclear Power officer for the Atlantic Submarine Force; executive assistant to the director, Submarine Warfare Division, Office of the Chief of Naval Operations (OPNAV N77); deputy division chief for Joint Capabilities Division (Joint Staff J8); section head for Platforms, Payloads and Budget in Undersea Warfare (OPNAV N97); military assistant and chief of staff for the Assistant Secretary of Defense for Operational Energy Plans and Programs (OEPP), the Honorable Sharon Burke; and deputy director for Undersea Warfare (OPNAV N97).

As a flag officer, he served as the deputy director for Plans and Policy (J5) at U.S. Strategic Command and as commander of Submarine Group 9.

Tammen is currently the director, Undersea Warfare Division (OPNAV N97) in Washington, D.C., and is responsible for the planning, programming and budgeting for acquisition, operational readiness and modernization of undersea forces.

His personal decorations include Defense Superior Service Medal (two awards), Legion of Merit (four awards), Defense Meritorious Service Medal, Meritorious Service Medal (two awards), Navy Commendation Medal (five awards), Navy Achievement Medal (two awards) and various unit awards.

