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FOR FISCAL YEAR 2018
AND
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FIRST SESSION
SUBCOMMITTEE ON SEAPOWER AND
PROJECTION FORCES HEARING
ON
**LITTORAL COMBAT SHIPS AND THE
TRANSITION TO FRIGATE CLASS**

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LITTORAL COMBAT SHIPS AND THE TRANSITION TO FRIGATE CLASS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES,
Washington, DC, Wednesday, May 3, 2017.

The subcommittee met, pursuant to call, at 3:31 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. The meeting will come to order. And we welcome the witnesses today. We are on an interesting time constraint today, so, Admiral Boxall, Admiral Neagley, thank you so much for joining us. I am going to jump right in, and I appreciate our witnesses here today.

As we know, we are here to discuss littoral combat ship and the transition to frigate. Appearing before us to discuss this important topic are two esteemed Navy witnesses, Admirals Boxall and Neagley.

Gentlemen, I want to thank you for your service and, just as important, thank you for appearing before this subcommittee on this most important issue.

The Navy has developed a broad fleet architecture that presumes a high-low mix of surface combatants. At the high end in terms of capabilities and cost, the Navy continues serial production of the *Arleigh Burke*-class destroyers. But at \$1.8 billion for each destroyer, the overall shipbuilding plan cannot afford a fleet of destroyers and drives development of a small surface combatant. In response to cost-efficiency, Navy developed a littoral combat ship at a price point of \$550 million that is less than a third of their more robust destroyer counterpart.

The challenge before this committee is to ensure the correct high-low balance of surface combatants that best responds to fleet requirements in the most efficient manner.

My friends, this subcommittee is at a crossroads with the littoral combat ship program. The eventual transition from a littoral combat ship to frigate may be the most difficult issue that our subcommittee needs to assess.

The littoral combat ship initially had a requirements foundation that was built on unstable ground. While cost had steadily improved with serial production, the issues of requirements stability, technology insertion, and anticipated employment of the littoral

combat ship still confound the Navy. For example, certain critical components of the mission modules associated with the littoral combat ship continue to elude introduction to the fleet.

While there are many challenges with this program, there are also many bright areas. For example, the shipbuilders at both Austal and Marinette Marine are constructing the littoral combat ship at a reduced cost and an ever-increasing quality. When I visited the construction yards in Mobile and Marinette this year, the pride of construction and efficiency of effort was evident. These shipbuilders are regional job engines and serve as great examples of American innovation.

But great shipbuilders can only construct ships that have a solid requirements foundation. Moving forward, requirements for the littoral combat ship and the frigate will likely pose the greatest challenge. And I find it imperative that the Navy clearly articulates its desires for each platform to industry.

I read the witnesses' opening statements and was pleased to note that the Navy intends to review the requirements associated with the littoral combat ship program and the eventual transition to frigate. I am particularly pleased to note that significant support for the fleet is being provided during this requirements review.

From my assessment of the program, I believe that additional survivability, increased cruising range, and additional development margin for future expansion are needed improvements. I also believe a decrement in speed could be provided to best optimize these increased capabilities. I look forward to assessing Navy proposed requirements associated with the new frigate program.

As to the current littoral combat ship acquisition, I continue to be concerned about the Navy's intended strategy. Ship construction is rife with examples of an immature design being used before it is ready. Invariably, an immature design leads to cost growth.

Navy appeared to be set toward repeating this hard-learned lesson with the frigate's construction earlier this year but has since decided to review the frigate requirements, allowing the ship construction yards valuable time to better develop complete designs. In my opinion, this was a wise decision.

Another problem with the acquisition strategy is the construction rate proposed by the last administration of only one ship in each of the fiscal years 2018, 2019, and 2020. This construction rate simply does not support both yards. I am committed to keeping both yards operational until the downselect to frigate occurs.

I think that we can all agree that we need to improve the littoral combat ship acquisition strategy and better support the requirements for the transition to the frigate.

To best review this issue, I am pleased that we have our two distinguished panel experts with us today, and I would like to thank them for joining us. We have Rear Admiral Ronald A. Boxall, Director, Surface Navy, N96, and Rear Admiral John P. Neagley, Program Executive Officer, Littoral Combat Ships.

Thank you both again for testifying today, and we look forward to your thoughts and insights as to how to best improve the littoral combat ship and the eventual transition of frigate.

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

[The prepared statement of Mr. Wittman can be found in the Appendix on page 25.]

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

Mr. COURTNEY. Thank you, Chairman Wittman.

And thank you to both admirals for joining us here today for this very timely and important hearing on the future of the Navy's future frigates.

There has been much debate during the history of the littoral combat ship and the debate of its successor, a new class of frigate, and, again, we are back at it. But our debate today is not simply about a name; it is about capacity and capability.

Ten years ago, the second hearing I ever attended as a freshman member of this panel was on the topic of LCS [littoral combat ship]. Since then, I have seen this program twist and turn again and again as we have struggled to understand the Navy's shifting plans and requirements. We are not here to rehash the turbulent history of the LCS program, but I do hope that we can take some of the hard lessons learned from the history of this program to help better inform the decisions ahead.

As we have heard from combatant commanders, our fleet requires a mix of both high- and low-end ships. We cannot afford nor does it make sense to simply build highly advanced yet very expensive destroyers.

The LCS has come a long way from where it began from both a cost and capability standpoint. If the follow-on frigate can expand on the lethality and survivability further, I believe it will be exactly in line with the distributed fleet concept that our Navy leaders continue to say that we need.

The frigate, which was the result of the in-depth review conducted by the Navy's Small Surface Combatant Task Force in 2014, provided a framework through which the existing hull designs could be utilized to provide increased capabilities that the fleet desired.

Based on previous testimony, the Navy has said that the new frigate will move away from the modular concept of the LCS to a multimission-capable ship that can operate independently or as part of a larger strike group or even surface action group.

There may be additional changes to the frigate's requirements that may be warranted, and certainly there are many valid questions about the way forward that need to be addressed as we begin deliberations in the 2018 defense authorization bill. However, I am very concerned that the Navy and some in Congress could be considering yet another change and approach that could further complicate this program and set back our efforts to meet the force structure needs of the Navy.

However flawed the LCS acquisition plan has been over the years, there is little doubt that the shipyards have made tremendous strides. With investment in their production lines and workforce and a relatively stable production rate, the cost of the LCS has come down considerably. And while there is still more work to

be done, major disruptions in the acquisition plans and production rates at this point would be a tremendous setback to that progress.

This is a panel that understands that shipbuilding is a long game. Affordability and success in shipbuilding requires stability in design and requirements and, above all, certainty in production rates in the short and long term. Constantly changing directions and strategies does a disservice to our industrial base and, ultimately, to meeting the needs of our naval forces. At some point, we need to decide on a plan and stick to it.

We are at a pivotal point both in the future of our Navy and the effort to transition the LCS to a frigate. How we move ahead will have significant consequences for the fleet and the industrial base. I look forward to hearing from our witnesses about their plans to move forward in a way that meets the Navy's force structure requirement, gets the fleet the capabilities it is asking for, and provides the certainty that our industrial base needs.

With that, I yield back, Mr. Chairman.

Mr. WITTMAN. Thank you, Mr. Courtney.

Admiral Boxall, we will go to you now for your testimony.

**STATEMENT OF RADM RONALD A. BOXALL, USN, DIRECTOR,
SURFACE WARFARE (N96)**

Admiral BOXALL. Thank you, Chairman Wittman, Ranking Member Courtney, members of the Seapower and Projection Forces Subcommittee. Good afternoon, and thank you for the opportunity to be with you today to talk about the small surface combatant class of ships, namely the littoral combat ship and follow-on frigate.

My testimony today reflects the impact of the concept of distributed maritime operations, featuring a dispersed and connected architecture of more lethal and resilient ships operating independently or in small formations.

In thinking about the concept of a network and distributed force, we conducted a series of war games and analytics that have revealed the set of capabilities our small surface combatants need to deter and fight in a complex, contested environment. These efforts contributed directly to the 2016 Force Structure Assessment released last fall and revalidated the requirement for 52 small surface combatants and focused on increasing the capability of the class.

Additionally, three separate, independent, and congressionally mandated alternative future fleet architecture studies conducted in 2016 concluded that the nature of the threats we face required that the small surface combatant class needed to evolve.

These disparate but related intellectual pursuits have come together to create a more refined and appropriate set of capability requirements to meet the fleet challenges of tomorrow.

We are currently working through the requirements process, taking into account cost and capability trades to optimize the value that the frigate of the future brings to the warfighter. The bottom line, however, is the future small surface combatants must be an even more survivable and lethal contributor in the distributed environment.

It would be incorrect to assume that because we are moving to a more capable frigate design that we value LCS any less. Quite

the contrary. We need LCS in the fleet as quickly as we can get it to fulfill the mission requirements the ship was designed to meet—missions that include anti-surface warfare, anti-submarine warfare, and mine countermeasures. The flexibility and modularity of these ships also ensure decades of capability upgrades, as they serve their estimated service lives of 25 years.

LCS will carry out its missions, and the frigate will carry out others, but both of these members of the small surface combatant family will relieve pressure on the large surface combatant force, which is currently stretched thin.

I look forward to your questions today, questions that I will answer as completely as I can, considering the impending submittal of the 2018 DOD [Department of Defense] budget.

Thank you, sir.

Mr. WITTMAN. Thank you, Admiral Boxall. We will now go to Admiral Neagley.

**STATEMENT OF RADM JOHN P. NEAGLEY, USN, PROGRAM
EXECUTIVE OFFICER, LITTORAL COMBAT SHIPS**

Admiral NEAGLEY. Mr. Chairman, Ranking Member Courtney, and distinguished members of the Seapower and Projection Forces Committee, good afternoon. I welcome the opportunity to testify today on the littoral combat ship and the future frigate program.

Before I begin, I would like to ask the full text of our written statement be submitted for the record.

Mr. WITTMAN. Without objection.

[The joint prepared statement of Admiral Boxall and Admiral Neagley can be found in the Appendix on page 27.]

Admiral NEAGLEY. As the program executive officer for the littoral combat ships, I have cradle-to-grave responsibility for the acquisition and life cycle of LCS and the associated mission packages. As we deliver more and more of these ships to the fleet, I work in close contact with our fleet partners, and their demand for these platforms continues to be strong.

Today, we have eight ships in the fleet, with four more delivering this year. Initial operational testing and full ship shock trials are complete for both variants, and the LCS design is stable and mature. Three littoral combat ships have deployed to East Asia, and others have participated in a wide range of fleet operations.

As we gain operational experience with LCS, the Navy continues to improve the effectiveness of these ships. Lessons learned from construction, post-delivery test and trials, fleet operations, have informed changes that have rolled into the production and the ship design/manufacturing process to improve reliability and operational availability.

But as the maritime threat evolves, the Navy is placing greater emphasis on distributed operations, highlighting the need for the full complement of small surface combatants and increasing the need for frigate design with improved lethality and survivability. The Navy is working to ensure frigate requirements deliver the right mix of capability, flexibility, and affordability.

We understand the potential implications to future acquisition strategies, their shipyards, and their workforces, and these are considerations we do not take lightly. We are committed to delivering

increased capability to our sailors for the best value for the American taxpayer, and that includes maintaining a competitive, healthy industry base.

We welcome your input and oversight as we work through the transition of the LCS to the frigate. Thank you again for the opportunity to testify, and I look forward to your questions.

Mr. WITTMAN. Admiral Neagley, thank you, and, Admiral Boxall, thanks so much for your opening statements.

I am now going to go to our ranking member, Mr. Courtney, to begin the questions.

Mr. COURTNEY. Thank you, Mr. Chairman.

Rear Admiral Boxall, recent reporting has suggested that the Navy is taking another look at existing and even foreign designs as alternatives to the current seaframes.

In 2014, the Small Surface Combatant Task Force, which testified before our committee a number of times in the last Congress, concluded definitively that both current existing U.S. designs and foreign designs did not meet even current LCS survivability requirements and would require major structural improvements to bring them to those minimal requirements. This was deemed to have even a greater cost impact than a new design.

What has changed, and why is the Navy again questioning the exhaustive process of the Small Surface Combatant Task Force?

Admiral BOXALL. Thank you, sir.

The Small Surface Combatant Task Force, the environment when they created that task force was, I will call it, reactive in nature. We were responding to, you know, criticisms and to get to a more capable, survivable ship and LCS as quickly as possible. And there was also fiscal guidance that was given at that time, but it was direction, kind of, to them.

And I don't want to speak for that force; I was not on it. But as we go through our own analysis, we are making assumptions about the different capabilities, what we think we need. We look at the, you know, space, weight, power requirements that we think we need, with the capabilities that we have already looked at from the task force and as we continue to refine that.

And as we look at it, we see indications that say, you know, every capability option you look at and every provider potentially of an offer of the future has to make some changes. And so the question really becomes, how big are the changes, and are they going to be cost-effective?

From our view, we have less data on the foreign designs than we do most of the other designs in the U.S. But having said that, what we also learned from the Small Surface Combatant Task Force was that we have—we made some assumptions then that weren't exactly right even with regard to the LCS variants.

And so, if you take that same thinking and you extrapolate that to what we are doing now, you say, well, we don't know if they can or can't do that with a foreign design or a U.S. builder with a foreign partner, and so we believe it is in the interest of the Navy to look at the requirements and to be able to include anyone who could provide full and open competition to get us the best capability at the best price.

Having said that, there are challenges, like I said, with any option that, you know, they will have to get through to make it happen. We still have a timeline we want to get to, because time is of the essence, and we also have capability that we want to get. And, you know, the ones that are out there with designs that exist and we don't have a lot of information on it, we don't know if they will or will not be able to meet what we need.

Mr. COURTNEY. Great. Well, again, I think in some ways this is sort of the question of the day for our subcommittee. Again, I am sure there will be followup with staff and other members.

Again, I know time is a constraint, so I am going to stop there and let the chairman call on folks from his side.

Mr. WITTMAN. Thank you. Thank you. And we can always come back for additional questions. I know we have a vote here, but we do plan on coming back after the vote.

So Mr. Conaway.

Mr. CONAWAY. Well, thank you.

And let me—for the uninitiated, I mean, I have watched—I have been here as long as Mr. Courtney has and watched the LCS go through its various iterations.

Can you help me understand what the frigate will actually do? Is it a gunship? Is it a missile? What is it that it will provide in terms of capability that you keep talking about? Can you describe that for me? And can you work that into the cost? Is it comparable to what the LCS is currently running at?

Admiral BOXALL. Yes, sir. Certainly we don't have any final solutions yet, but I will kind of give you the thinking.

Certainly, if you looked at the frigate design as we had that was based on the work of the task force that was originally done, they had taken what was a single-mission ship, a modular design, where you could put anti-submarine warfare and anti-surface or a mine countermeasures mission package into that ship. And so, as we went forward with the Small Surface Combatant Task Force, the output there was to say let's combine and add anti-submarine warfare and anti-surface warfare, put some more survivability in.

From a lethality standpoint, we added an over-the-horizon missile to all mission package combinations. You know, that was a hull seaframe addition. And that is kind of where we stopped, because, again, the guidance on that was the costs—that was about where the knee in the curve was for the cost guidance that was given.

The difference this time, I think—and we have taken an in-house look from the Navy standpoint. This was us deciding that we said, you know, we have heard a lot of, you know, the design requirements and the GAO [Government Accountability Office] report that has talked about, you know, going too quickly to a design without adequately giving it time to think through, and we have kind of a running start based on the work that we have done.

But we do believe that there is an opportunity to get more survivability into the ship to allow it to conceptually, in this distributed maritime operations environment that we believe the ship will be operating in for its lifetime—

Mr. CONAWAY. So help me understand what—in that fleet operations, where will this—

Admiral BOXALL. Yes, sir.

Mr. CONAWAY. Will this be the outer edge of whatever it is you are doing?

Admiral BOXALL. So we are still working—

Mr. CONAWAY. I am trying to figure out where this ship goes in the fight.

Admiral BOXALL. Yes. So, right now, the ship is going to be—it remains a forward-deployed asset that will kind of be in theater. So it will be for combatant commanders to combine with carrier strike groups either operating independently or they could work with them.

One of the things that we are also looking at now that probably was not looked at as closely with the Small Surface Combatant Task Force was the commonality with other existing systems. So the idea that we could plug and play with the fleet as we needed, whether it be with weapons, sensors, the networks, and those types of things so that—

Mr. CONAWAY. The networking between, say, a carrier strike group would be as robust as you need?

Admiral BOXALL. So one of the things we are looking at to try to do in the requirements is to ensure that this ship can be a provider of information and also a receiver. So it can be a node, if you will, though I hesitate to use that term, but the idea that it can plug and play and be used as an asset for the fleet commander to decide in a distributed environment how we can properly use that.

So it really is a combination to operate disaggregated or, if we have to aggregate with other ships, that we would envision it to be able to do that.

Mr. CONAWAY. All right. Well, a lot of convincing to do.

Admiral BOXALL. Yes, sir.

Mr. CONAWAY. And I will yield back at this point.

Mr. WITTMAN. Thank you, Mr. Conaway.

We will now go to Mr. Norcross.

Mr. NORCROSS. Thank you, Chairman.

And thank you for your service.

My colleagues are going to get into much of the detail we are speaking of. I am going to talk about capacity, in looking down the road with our ever-expanding fleet, and the numbers remain to be homed in on.

When we look at what we are producing today, the two shipyards that are going at it, and we are trying to look down the road, we only have X amount of shipyards available to us. There are only so many people who are skilled trades.

How much does that factor into some of the decisions you are trying to make today? Or does that say, well, we are going to be over capacity, this one is going to fall off the edge?

Because you have to consider, we have great plans, but if we can't build it, it means nothing.

Admiral NEAGLEY. Yes, sir. Great question.

Part of our assessment and part of the design review that we will execute as we look at potential frigate designs, a part of that will be, can that particular offeror produce that design? Do they have the production capacity to produce the design that they are offering? So part of our assessment of the design is also an assessment of their capacity to build that particular design.

We certainly have two shipyards that have invested a great deal in the littoral combat ship. That investment, as we have talked about, has driven down costs and provided stability. So we want to leverage as much of that work as possible. But part of our assessment of the frigate design will be assessment of the offeror to provide the production and capacity to build that design.

Mr. NORCROSS. But let me drill down a little bit on that. So you are only looking at that one capacity to build that one ship. But, overall, there are going to be many more requirements. Obviously, we don't have enough shipyards to put them out at the speed that we are going to need them.

How do you determine, or is it above you that makes the determination, you know, we want this shipyard to produce this model instead of your model? How does that factor into that final selection?

Admiral NEAGLEY. So, again, when we look at—as we come through the design process and then we evaluate the ability of the contractor to produce that design, we look at things like workload curves. What is the current workload in that particular shipyard that is proposing to kind of build that ship? Do they have the capacity to take on that additional work to meet the numbers that we have asked for as part of the proposal?

So we look at that capacity piece based on what the individual offerors are offering, to evaluate whether they can meet that capacity given their current workloads, their current manning, their current infrastructure in the yard. Do they have the capacity in the yard from a materials standpoint to produce those ships? And do they have the skilled workforce that can produce those ships on the schedule that we need them on?

Mr. NORCROSS. So what I am hearing is you are not anticipating any conflicts of capacity?

Admiral NEAGLEY. Well, we would understand what other work—when we are evaluating those proposals, we would understand what other work is going on in those yards. So we wouldn't do it in a vacuum. If we—

Mr. NORCROSS. But if you had made that decision last year, it would be a much different scenario than you are looking at at, say, 6 months from now, right? Because a year ago, nobody was talking about the expansion of our fleet the way we are today.

Admiral NEAGLEY. Yes, sir. Yes, sir. Exactly.

Mr. NORCROSS. So those demands that are going to come upon us—

Admiral NEAGLEY. Yes. Yes.

Mr. NORCROSS [continuing]. Weren't even part of that evaluation.

Admiral NEAGLEY. Correct.

Mr. NORCROSS. They will be in 6 months from now.

Admiral NEAGLEY. Correct. Right. We will look across the entire shipbuilding plan to see where we are going to build those ships across the fleet architecture and then where LCS and the frigate fit to make sure we have capacity and those shipyards are going to produce those ships to deliver on the schedules that we are required to do.

Mr. NORCROSS. But from what you are seeing now, you don't anticipate any capacity issues from the requirements that you are putting out?

Admiral NEAGLEY. We have to come through the requirements, but no.

Mr. NORCROSS. Thank you.

I yield back.

Mr. WITTMAN. Thank you, Mr. Norcross.

We are going to break to go vote, and we will be back at 4:35. So I would ask all of our members to come back. We have, I think, some important questions to offer, so we will do that.

And, Admiral Boxall, Admiral Neagley, if you will indulge us, we will be back at 4:35.

Admiral NEAGLEY. Thank you, sir.

Mr. WITTMAN. And we are in recess.

[Recess.]

Mr. WITTMAN. I will reconvene the Subcommittee on Seapower and Projection Forces.

And our next questioner will be Mr. Byrne from the great State of Alabama.

Mr. Byrne.

Mr. BYRNE. Thank you, Mr. Chairman.

Good afternoon, Admiral Boxall, and good afternoon, Admiral Neagley. Thank you for your patience, by the way. We have had this vote, and we appreciate you sticking around.

What we just voted in there, an appropriation bill for fiscal year 2017 that includes funding appropriations for three littoral combat ships. Three ships a year maintains an equilibrium with the industrial base and the skilled and experienced workforce of the shipbuilders while driving down the individual cost of each ship, as you have already said.

Admiral Neagley, to get to the frigate in FY20 [fiscal year 2020], as you have stated, it seems clear to me that the Navy needs three LCSes in fiscal year 2018 and fiscal year 2019 in order to preserve the industrial base and cost efficiencies. Do you agree with that?

Admiral NEAGLEY. So I agree that three ships a year from an efficiency standpoint in the shipyard is the right level. That gets us efficient schedules, efficient costs.

The number of ships in those years will be discussed as part of the POM [program objective memorandum] process for the requirements for the Navy. But, certainly, from a cost-efficiency standpoint, leveraging the investments we have already made in those shipyards to produce ships efficiently, three ships a year is the correct number.

Mr. BYRNE. Thank you.

Admiral Boxall, are there plans to backfit the existing LCS with some of the requirements we can assume will be part of the frigate, like adding an over-the-horizon missile to the *Coronado*, for example?

Admiral BOXALL. Yes, sir. Actually, even as we speak, we have, as you may know, LCS 4 [USS *Coronado*] is deployed out of Singapore, and she is carrying an over-the-horizon missile right now.

It is our intention to continue to put an OTH [over-the-horizon] missile on to backfit the LCS. Again, making those ships have of-

fensive capability, to the extent we can afford to do so, is in line with the idea that we want to be very offensive with our ships as well.

We have already approved, internal to the Navy, our—we have changed the key systems attribute, which is the way we inform the joint process of our intentions to make that a capability on that ship. And so that is our—we are full on our way.

Obviously, as Admiral Neagley will tell you, we are still waiting for a July response for the request for proposal on the over-the-horizon missile, as you know.

Mr. BYRNE. Well, Mr. Courtney and I had the pleasure of being on the *Coronado* back in July at sea, and they were very pleased with the operation of the missile. And we heard later from Admiral Harris that he really likes the idea of having those things with missiles out there, because you can move them around and have some distributed lethality that we have talked so much about.

Do you intend to leverage the money you have already spent on both LCS hulls in the frigate development path to incrementally increase the lethality of these ships as a phased approach to the frigate, especially for the hulls procured between now and the frigate in 2020?

Admiral NEAGLEY. So, yes, sir, there are specific lethality and survivability changes that we have already incorporated in the current contract that we intend to install on the follow-on ships based on funding available, so things like OTH, lightweight tow, additional magazine protection, protection around the chilled water systems that protect the SeaRAM system. So we have those already as options in the contract to go execute as part of the ships as we go forward.

Mr. BYRNE. So that is a certain amount of progress towards the frigate before we even get to the frigate, because you are incorporating some of those concepts into the LCS until we get to fiscal year 2020.

Admiral NEAGLEY. Yes, sir. Some of those attributes would be the same as we would pursue in the frigate design.

Mr. BYRNE. Let me ask you one final question. With regard to the two shipyards, obviously, we have several years—more than several years of experience there. We have trained workforces. They have done the things they need to do to make the shipyards themselves a more efficient way to produce their ships.

Is it reasonable to expect that they could continue over the next couple years without having that same level of production, three LCSes a year?

Admiral NEAGLEY. Sir, I would say those shipyards invested and optimized those shipyards for producing two ships a year on a 4-month build cycle, to deliver two ships a year on 6-month centers. So I think if the profile is lower than that, we would be less efficient. There would have to be other work coming into the yards.

Mr. BYRNE. All right. Thank you.

Thank you, Mr. Chairman. I yield back.

Mr. WITTMAN. Thank you, Mr. Byrne.

We will now go to Mr. Garamendi.

Mr. GARAMENDI. Needless to say, this is a very troubled water in which we are working here. What is the total number of LCSes that are scheduled to be built?

Admiral BOXALL. Well, right now, I mean, the plan we have through 2017 would give us—we hit 28 through 2017. I don't know the exact right now.

Admiral NEAGLEY. So it would be—so we have 30 LCSes in the plan right now.

Mr. GARAMENDI. I am sorry. I couldn't hear you, sir.

Admiral NEAGLEY. Thirty in the plan, counting the LCS.

Mr. GARAMENDI. And we have 12 that are on—8 are in water and 4 more that are about to be in the water?

Admiral BOXALL. We have nine delivered right now, but we have—obviously, you know, when we say “delivered,” that, you know, completes delivery. And then we are on a short schedule this year to finish up to the number—what do you have right now?

Mr. GARAMENDI. So let me just short it there, because time will go by.

Admiral BOXALL. Yeah.

Mr. GARAMENDI. So we basically have 9, 10, maybe 12 that are out there, and we are going to go to 30, and we don't think they work.

Admiral BOXALL. Well, we actually—I think they do work. We—

Mr. GARAMENDI. If modified and if there is money to modify them. Is that what I heard you say, with regard to magazines and water systems and drive systems and so on and so forth? Do you have any idea what the cost of all of that is so that they actually have some survivability?

Admiral NEAGLEY. So let me clarify my statement. So the ship meets the survivability requirements as validated by DOT&E [Director, Operational Test and Evaluation]. So the additional capability or additional attributes we are talking about are above and beyond the requirement.

Mr. GARAMENDI. I guess I missed this whole thing. I was here from the beginning, and all the talk was about survivability not being sufficient.

Admiral BOXALL. We want to get more survivability to improve its ability to do other missions to take some of that off of the higher-end ships, so to get it into the level where—right now, the mission of the ship is single-mission. It is an anti-submarine warfare/anti-surface warfare/mine countermeasures. So if it is doing those missions in an area that is a higher-threat area, then they would need to have a ship with higher survivability with it to protect it.

Mr. GARAMENDI. So, in order to do what they are supposed to do, they have to be higher survivability than they presently have.

Admiral BOXALL. We think, in the future, by making them more survivable, it makes them more flexible, and it will take some pressure off the wider force. So we certainly would like to get—I mean, any ship we want to make as survivable as we can for the mission it has been needed to do.

Mr. GARAMENDI. So we should go ahead and build another 20 of these ships even though they are not survivable in what they are supposed to do unless we increase their survivability?

Admiral BOXALL. Sir, as of today, we have only nine of those ships out there, and they are still in kind of the post-shakedown availability. We only have—one of the three mission packages is operational, but two will be coming on in the next—in 2018 and 2019.

The ASUW, anti-surface, mission package is going to be the most capable we have on any ship in the Navy right now. The anti-submarine warfare package that delivers IOC [initial operating capability] in 2019 is the exact same system we have on our best destroyers out there to find submarines and also has a variable-depth sonar and the same helicopter and torpedoes that we have on our very best platforms.

So they are clamoring for that capability in theater, both in the Mediterranean and whether you are in the Gulf or whether you are in——

Mr. GARAMENDI. So, assuming all of that, we are now going to go build frigates, which is different than this, but yet we are going build another 20 of these. It doesn't quite——

Admiral BOXALL. Yes, sir. We have a requirement right now for 52 small surface combatants and 104 large surface combatants. As of today, we have—I think the number is 87 large and we have 20 small, of which 11 of those are mine sweepers. So you can see we are noticeably short on what we need.

So we want to get as many of those out there to assist and ensure the force has more capable anti-submarine warfare, the ability to protect themselves against small boats that are out there. We are seeing these threats today in the Bab-el-Mandeb, in an area that has a lot of small-boat activity. So these ships will be very welcome in those environments.

Mr. GARAMENDI. Final question. Downsizing or downselecting. The frigate already is more expensive, and detail design has not been even thought about. So what is the cost of the frigate that is the follow-on to the LCS which needs to be upgraded in order to survive?

Admiral NEAGLEY. Yes, sir. So as we come to the requirements process and come through what the requirements, what capability needs to be on that frigate, we will go through a design process where we will mature that design. We will do a service cost—or a cost estimate of what that design costs, and then we will do an independent cost estimate to assess what that cost is for the set of requirements that are required for the frigate design.

So that is work in front of us to do.

Mr. GARAMENDI. Thank you. Right on time. Thank you very much.

I yield back.

Mr. WITTMAN. Thank you, Mr. Garamendi.

We will now go to Mr. Gallagher.

Mr. GALLAGHER. Thank you, Mr. Chairman.

Thank you, Admiral Boxall, Admiral Neagley.

Admiral Neagley, I think the last time I saw you was at Marinette, so it is good to see you. It is a somewhat warmer climate than it was that time.

I would like to follow up on what my colleague Mr. Byrne said and just make sure that we are all clear on what would happen pending some decisions we are about to make.

In a recent LCS hearing before this committee, Secretary Stackley described what he called a very skilled set of labor in the shipbuilding industry. Shipbuilding, he testified, requires unique skills in terms of shipfitters, pipefitters, and production control in the shipyard. What we can't afford to have happen is a sawtooth effect in terms of hiring and firing at our shipyards.

He went on to describe this sawtooth effect, saying, "We will be continually dealing with learning in terms of the labor themselves, and we will lose the skilled labor. They will go to other areas where there is a more stable employment environment, and that will come back to us in terms of cost and quality. So we have to maintain those two key elements in our industrial base. And it is particularly fragile at a time when your shipbuilding rates are below where you believe they need to be."

So, as I understand it, based on what you have said, what Secretary Stackley has said, anything less than three ships in fiscal year 2018 will indeed lead to this sawtooth effect, which, according to Secretary Stackley, will come back to the taxpayers in terms of cost and quality.

Should the plan to fund one or two ships this year move forward and we fail to maintain a steady rate of three ships entering the shipyard pipelines, layoffs will occur at both yards.

Admiral Neagley, do you agree with Secretary Stackley's assessment that these sawtooth layoffs would result in significant costs to taxpayers in terms of cost, quality, and schedule?

Admiral NEAGLEY. Yes, sir, I agree with that, his assessment. Stability and predictability, particularly in the shipyard, is a key to driving cost and have a predictable schedule.

Mr. GALLAGHER. Admiral Neagley, I would also like to follow up by talking a bit about the learning curve associated with the initial development and production of first-in-class ships. And, certainly, there has been a lot made about what is working, what isn't working.

What extra risks do these ships typically run in terms of schedule delays, cost overruns, or quality issues compared to subsequent iterations? How long does it typically take for these first-of-class issues to sort themselves out?

Admiral NEAGLEY. Yes, sir. So, in terms of learning curve, if you look at the first two ships we delivered—so LCS 1—I can talk in hours—so we delivered it in about 4.8 million hours. LCS 9, which is going to deliver this year, is down to about 2.9 million hours.

So we have seen across both shipyards direct production labor come down about 40 to 60 percent in learning. So that is cost and schedule that is real.

Mr. GALLAGHER. And it would be fair to say is real anytime you are deploying a first-of-class ship.

Admiral NEAGLEY. Certainly, there is a steep learning curve to start a new design and a new shipyard. You know, that initial cost would be much higher than a ship that has been in production for a while and captured the lessons learned and captured the changes in line.

Mr. GALLAGHER. And those lessons learned, would it be fair to say, are being captured every day by the men and women who are working on the ship? And just talk to me a little bit about how having that experienced labor force contributes to greater efficiencies in cost that you are realizing every single day in both shipyards.

Admiral NEAGLEY. Yes, sir. So having both a shipyard that is facilitized to produce the ships that the Navy requires and to have a skilled workforce that can produce those ships on the timelines that we talk about is critical.

In LCS, we are particularly advantaged. You know, we operated those ships early, so we have a lot of lessons learned from operational experience, and we are able to fold those into the production lines now, so the learning rate is quicker.

With our ability to kind of capture lessons learned from underway deployments, fold those into pretty mature production lines, it is a way to kind of improve the capability quickly over time.

Mr. GALLAGHER. And, Admiral Boxall, if the Navy's frigate program were to experience delays following the expected award in fiscal year 2020, how would that impact the Navy's overall ability to meet its small surface combatant requirements?

Admiral BOXALL. Well, sir, obviously, we would like to get ships out there to the numbers that we—you know, so the faster we get to 52 to meet the requirement, the less load we place on our forces out there. So, obviously, that would be an impact.

If the delay goes, we want to make sure that we still—we produce the capability that we need out there in the ships. It would require either working those ships a little more or having the large surface combatants kind of pick up the slack, those types of mitigations.

Mr. GALLAGHER. But, I mean, obviously, the large surface combatants are far more expensive, a different set of requirements. So can we get to 355 if we don't fully meet the small surface requirement?

Admiral BOXALL. So 355, I mean, one of the challenges we have in the shipbuilding program writ large with regard to the entire force is that—I would liken this to a bathtub that is draining faster than you are filling it.

Mr. GALLAGHER. Uh-huh.

Admiral BOXALL. So we have the same problem with—you know, there are a lot of ships we have built—about the time they are starting to decommission, we will start seeing those ships retire at a faster rate than we are producing them, whether it be large or small surface combatants. So that trend is obviously something that is concerning to us.

Mr. GALLAGHER. All right. Thank you both for your time.

Admiral BOXALL. Yes, sir.

Mr. WITTMAN. Thank you, Mr. Gallagher.

We will now go to Ms. Bordallo.

Ms. BORDALLO. Thank you very much, Mr. Chairman.

Admirals, thank you for your time today.

You have testified a Frigate Requirement Evaluation Team is redefining the frigate requirements to improve its ability to operate in a more contested environment than LCS and to enhance its role in distributed maritime operations.

Now, as I understand it, there is a current effort underway to outfit the LCS and the frigate with an over-the-horizon weapons system, for which there is a wide spectrum of anticipated options that could be chosen, each with different capabilities. These range from inexpensive anti-ship solutions with limited utility in contested environments to highly advanced anti-ship solutions that could hold peer-nation surface vessels at risk in GPS [Global Positioning System]-denied environments, which may be the environment in the Pacific area, where these vessels would certainly operate.

If the Navy is redefining the role of the frigate, either it is envisioning over-the-horizon weapons as LCS-only solutions or it is reevaluating the correct capability for an anti-ship missile for the new frigate.

Can we expect to see the Frigate Requirement Evaluation Team reevaluate the anti-ship capability needed for a frigate the Navy now says will operate in contested environments?

And the second question to it: How will this impact the scope of the competition, which did not envision such operating conditions and appears to be disconnected with the work of the Frigate Requirement Evaluation Team?

Admiral BOXALL. Thank you, ma'am.

We are still working, as I said, through—most of the efforts that we are looking at right now are focused on the survivability aspect of that, so you could say in improving the air defense capability, so protecting that ship. When you think about survivability of a ship, we look at the susceptibility, which is what we call the ability of it to keep from getting hit or taking out a threat as it comes at it.

So the over-the-horizon missile, from an offensive capability, we already have a request for proposal out there right now on the requirement that has been validated for both the LCS and for the frigate in the CDD [capability development document] that we have submitted.

So, as far as any additional capability, if we put flexibility—for example, if we choose to go with a vertically launched system that could take any other longer-range missile of the future, that would be a bonus, if you will. It increases the flexibility for it to adapt to future weapons.

But from an anti-surface standpoint, that is not one of the focuses of this team this time, although we continue to evaluate across the spectrum of capability.

Ms. BORDALLO. Thank you very much, Admiral.

And I yield back.

Mr. WITTMAN. Thank you, Ms. Bordallo. I appreciate your questions.

Admiral Boxall, Admiral Neagley, again, thank you so much for joining us today. This is important testimony.

Before I begin the questions, I do want to give a shout-out to Commander Crossman, who is extraordinary. He was given a mission set when we were traveling to the yards down in the Gulf, and he performed extraordinarily. He even stayed with me late into the evening to have a special shipman meet us back at the airport.

So, Commander Crossman, extraordinary performance. I have to thank you explicitly for that. So I want to make sure both Admiral Boxall and Admiral Neagley realize how valued we are as a Navy to have you there serving our Nation. So thank you.

I want to begin, Admiral Boxall, by talking a little more in depth about the capabilities for our upcoming frigate class. So a lot of discussion about what should be in that requirement set, talking about area air defense capability, enhanced survivability, expanded range, an additional margin for future weapons systems. I think all those things are very critical.

I want to get your perspective on what you believe—just generally. I understand you will be coming at it with requirements, but, just generally, what do you think are the most important mission capabilities on that small surface combatant frigate class? And what do you think the scope of cost range is that that ship should fall within? And I understand that that is going to be something that you are putting out there, but just give us a general sense.

Admiral BOXALL. Yes, sir.

First, with regard to Commander Crossman, as a former *Carney* CO [commanding officer], I was also the commanding officer of *Carney*, and he has been a great one. I have known him for a long time. So thank you for that.

Mr. WITTMAN. Extraordinary.

Admiral BOXALL. With regard to the capability of—we are focusing this effort in, kind of, the main area of survivability, which—air defense piece.

And when we say “area air defense,” I think, as a former Aegis [U.S. Navy phased array radar-based combat system] commanding officer, that we think about protecting large areas, you know, against cruise missiles and long-range missiles and things like that. We are not looking at that level. We are looking at something greater than the self-defense capability that we have, which is pretty robust when you include the systems. And I will keep it at the unclassified level here, but, certainly, we have a combination of systems that we think work in concert to protect itself in a reasonable environment.

And then, if you look towards, you know, a more complex, contested environment, then we look at, you know—you have to look at the quality of the radar. So that is something that we are focusing on. So the quality of the radar right now—we have had a rotating radar. We are having a dialogue on whether a fixed radar or a rotating radar that is solid state is going to be the best choice.

And, again, when you look at that radar, you look at the combat system and the commonality with the other one. So its ability to operate with other ships, the destroyers and cruisers out there, as part of a network force out there is very important. So we look at communications. Does it have the right COMs [communications] gear? Are there electronic warfare systems on there that are compatible and allow for a give-and-take between ships?

So when you look at all those things and we look at—you know, we don’t know exactly what cost is going to be. Obviously, we had estimates when we were looking at what the frigate would be. Obviously, if we do get more capability, we have a choice of either taking some more things off of there and keeping the price about the

same or increasing slightly. Those are the types of discussions we will have with OSD [Office of the Secretary of Defense] and with the Hill to ensure that we all think, going forward, we can depend on this level of support for this much capability.

We also want to make sure this remains a low part of the high-low mix. So we have constrained ourselves to ensure that we are getting the most bang for the buck, to ensure that we are not making this so big that it will become cost-prohibitive to having the capacity that we need out there.

So I hope that gives you about the things you were looking for, sir.

Mr. WITTMAN. It certainly does. And I appreciate your willingness to make sure you have discussions with us on the Hill. Because we are going to have to make sure there is a coordination there about what the requirement set ultimately ends up with—where that ends up on the affordability range.

And as I have talked earlier, for this subcommittee and for the full committee going forward, as we look at growing the fleet, the two elements that I think are extraordinarily important are time and resources. And that means, as we are going through this, we have to make sure we use time to our advantage, and that is get from concept to operation as quickly as we can, making sure that we have mature designs so we know how to work that, we know how to save money, and then making sure, as you said, to make sure in the high-/low-end mix the low end has the right capability in the right price range and that we deliver that on time.

So scale, as you heard a lot of other members talk about too, scale of production is another important element. Because you are going to pay more if you are building a smaller number than you are if you are building a large number. So we want to make sure that we have that scaled properly.

Let me ask this. Going to the LCS as we see it today and with the mine countermeasure package not being available until 2021, give me your perspective on what we are going to do to have that mine countermeasure capability going forward until we get that system delivered and operationally proficient on the LCS. Are we going to keep *Avenger* class going? What are we going to do with Sea Dragon? Can we do that in the Asia-Pacific and make sure we have that capability? Because, as you know, that is the area, as Admiral Harris talked about, where there is a real demand signal from the COCOMs [combatant commands].

So give me your perspective on how we make sure, you know, we have that right capability now. Because we planned on having it sooner than where we will ultimately end up with it.

Admiral BOXALL. Yes, sir.

So, with the mine warfare capability, obviously, we are—we keep hearing from, you know, both the Pacific and the European theater that mine capability is incredibly important. And so we are looking at different ways to mitigate now both with and without LCS.

But I will say I am not the requirements sponsor for mine warfare. That is obviously Major General Owens.

Mr. WITTMAN. Right.

Admiral BOXALL. But to your question of keeping the *Avenger* class around, obviously, that class is getting tired, those ships. And

so we are at a critical point of making those decisions of do we take the risk or add the cost to keep those at a much higher rate of readiness. And the return on investment, the operational availability of those ships, is getting harder and harder to keep up.

So I won't answer the question for him, but I will say that I think we know that we have to get that plan right, or else the *Avenger* class is going to—you know, it will cease being useful, and we will be caught with a gap.

So, in the meantime, I know we are working interim mitigating measures, and we are actually finding some innovative ways to adjust to that, both with and without LCS until that comes on line.

Mr. WITTMAN. Very good. Thank you.

Admiral Neagley, I want to go back to get you to elaborate a little bit on questions that were asked earlier, and that is: The Navy's LCS request for proposals had in it LCS projections from 2018 through 2020 at one ship per year. And you heard many other members talking about the challenges that that faces or provides for the industry, the cost associated with that.

Give me your perspective on where you see us finishing out this current LCS design and construction, what the build-out there would be, and when you would envision us moving to construction of frigate class as that decision is made. So if you can give me those numbers each year, what you project we need, obviously keeping in mind the industry, and then transitioning to frigate.

Admiral NEAGLEY. Yes, sir.

So, for the frigate, we intend to award the frigate by fiscal year 2020, is our target to get to frigate. So we will have a series of design activities to mature that design, to get to a design award, a detailed design and contract award, in fiscal year 2020.

We talked about the industrial base and what the industrial base is required to build ships efficiently between now and then. The numbers of ships for each one of those years will be based on—the Navy's requirements will be articulated in the budget. So that will be informed by, you know, not all of Navy priorities.

So I really can't speak to specific numbers in those years, but, certainly, from an efficiency standpoint for the shipyards, we have articulated that we think about 3 ships a year or 1.5 per shipyard a year is the right number to maintain the workforce and to leverage the efficiencies from the investment in those yards.

Mr. WITTMAN. So it will be logical, then, to assume that going forward the request would be to keep it at that level at least through 2019, which is when you would transition in 2020 to the new frigate class. Am I safe in assuming that? And I understand that it comes from decision makers above you, but just to be able to get your perspective on it.

Admiral NEAGLEY. So I think there is a desire that we get to frigate as soon as possible. And, again, the specific numbers in those years will be based on not only considerations for the industrial base and the shipyard but the competing Navy priorities to budget for those ships. So it is hard for me to predict what that budget—that shipbuilding profile will look like.

Mr. WITTMAN. Okay. Very good. Thanks, Admiral Neagley.

I know we have, I think, a desire for some more questions, so I will go to Mr. Garamendi, who has indicated an interest for additional questions.

Mr. GARAMENDI. I don't have any more. Thank you, Mr. Chairman.

Mr. WITTMAN. All right. Very good.

Do any other members have additional questions?

Hearing none, I want to thank our witnesses, thank our members for being here today.

And our subcommittee is adjourned.

[Whereupon, at 5:12 p.m., the subcommittee was adjourned.]

A P P E N D I X

MAY 3, 2017

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MAY 3, 2017

**Opening Remarks of the Honorable Robert J. Wittman
for the hearing
Littoral Combat Ships and the Transition to Frigate Class
May 3, 2017**

Today, we meet to discuss the Littoral Combat Ship and the transition to Frigate. Appearing before us to discuss this important topic are two esteemed Navy witnesses, Admirals Boxall and Neagley. Gentlemen, I want to thank you for your service and just as important, thank you for appearing before this subcommittee on this most important issue.

The Navy has developed a broad fleet architecture that presumes a high/low mix of surface combatants. At the high end in terms of capabilities and costs, the Navy continues serial production of the Arleigh Burke class destroyers. But at \$1.8 billion for each destroyer, the overall shipbuilding plan cannot afford a fleet of destroyers and drives development of a small surface combatant. In response to cost efficiency, Navy developed a Littoral Combat Ship at a price point of \$550 million that is less than a third of their more robust destroyer counterpart. The challenge before this committee is to ensure the correct high/low balance of surface combatants that best responds to fleet requirements in the most efficient manner.

My friends, this subcommittee is at a cross roads with the Littoral Combat Ship program. The eventual transition from the Littoral Combat Ship to Frigate may be the most difficult issue that our subcommittee needs to assess. The Littoral Combat Ship initially had a requirements foundation that was built on unstable ground. While costs have steadily improved with serial production, the issues of requirements stability, technology insertion, and anticipated employment of the Littoral Combat Ship still confound the Navy. For example, certain critical components of the mission modules associated with the Littoral Combat Ship continue to elude introduction to the fleet.

While there are many challenges with this program, there are also many bright areas. For example, the shipbuilders at both Austal and Marinette Marine are constructing the Littoral Combat Ship at a reduced cost and an ever increasing quality. When I visited the construction yards in Mobile and Marinette this year, the pride of construction and efficiency of effort was evident. These shipbuilders are regional job engines and serve as great examples of American innovation. But great shipbuilders can only construct ships that have a solid requirements foundation. Moving forward, requirements for the Littoral Combat Ship and the Frigate will likely pose the greatest challenge, and I find it imperative that the Navy clearly articulate its desires for each platform to industry.

I read the witnesses' opening statement and was pleased to note that Navy intends to review the requirements associated with the Littoral Combat Ship program and the eventual transition to Frigate. I am particularly pleased to note that significant support for the Fleet is being provided during this

requirements review. From my assessment of the program, I believe that additional survivability, increased cruising range, and additional development margin for future expansion are needed improvements. I also believe a decrement in speed could be provided to best optimize these increased capabilities. I look forward to assessing Navy proposed requirements associated with the new Frigate program.

As to the current Littoral Combat Ship acquisition, I continue to be concerned about the Navy's intended strategy. Ship construction is rife with examples of an immature design being used before it is ready. Invariably, an immature design leads to cost growth. Navy appeared to be set toward repeating this hard learned lesson with the Frigate construction earlier this year but has since decided to review the Frigate requirements, allowing the ship construction yards valuable time to better develop complete designs. In my opinion, this was a wise decision.

Another problem with the acquisition strategy is the construction rate proposed by the last administration of only one ship in each of fiscal years 2018, 2019 and 2020. This construction rate simply does not support both yards. I am committed to keeping both yards operational until the down select to the Frigate occurs.

I think that we all can agree that we need to improve the Littoral Combat Ship acquisition strategy and better support the requirement for the transition to the Frigate.

To best review this issue, I am pleased to have two distinguished panel experts today. This afternoon we have with us:

Rear Admiral Ronald A. Boxall
Director, Surface Warfare (N96)

and

Rear Admiral John P. Neagley, USN
Program Executive Officer, Littoral Combat Ships

Thank you both for testifying today and we look forward to your thoughts and insights on how to best improve the Littoral Combat Ship and the eventual transition to Frigate.

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

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THE HOUSE COMMITTEE ON ARMED SERVICES

STATEMENT

OF

RADM RON BOXALL, USN
DEPUTY CHIEF OF NAVAL OPERATIONS
DIRECTOR, SURFACE WARFARE DIVISION

AND

RADM JOHN P. NEAGLEY, USN
PROGRAM EXECUTIVE OFFICER, LITTORAL COMBAT SHIPS

BEFORE THE

HOUSE COMMITTEE ON ARMED SERVICES
SUBCOMMITTEE ON SEAPOWER AND PROJECTION FORCES

ON

LITTORAL COMBAT SHIPS AND THE TRANSITION TO FRIGATE CLASS

May 3, 2017

NOT FOR PUBLICATION UNTIL RELEASED
BY THE HOUSE COMMITTEE ON ARMED SERVICES

Chairman Wittman, Ranking Member Courtney, and distinguished members of the Committee, thank you for the opportunity to appear before you and discuss the current status of the Littoral Combat Ship (LCS) and Frigate programs.

As you know, the Navy's 2016 Force Structure Assessment revalidated the warfighting requirement for a total of 52 small surface combatants (SSCs). These ships fill critical warfighting gaps for our Navy in Surface Warfare (SUW), Anti-Submarine Warfare (ASW), and Mine Countermeasures (MCM) – littoral anti-access missions that are key elements of Sea Control.

Fleet demand for these platforms is strong. To meet this demand, the LCS shipyards have upgraded their yard facilities and have a qualified work force and industry team in place for full serial production, delivering two ships per year at an affordable cost that is well below the congressionally mandated cost cap. The LCS program is delivering combat capability to our sailors today, and is on track to deliver in support of future deployments.

As we gain operational experience with LCS, the Navy continues to improve the effectiveness of these ships. Lessons learned from construction, post-delivery test and trials, and fleet operations have informed changes that have been incorporated into the ship design and manufacturing process to improve reliability and operational availability. The Navy also continues to refine LCS crewing models, training, and maintenance concept of operations for greater stability, simplicity, and ownership, further contributing to improved reliability and combat capability being delivered to the Fleet.

As maritime threats have evolved, the Navy is placing greater emphasis on distributed operations, highlighting the need for a full complement of SSCs and increasing the need for a Frigate with improved lethality and survivability. The Navy is defining the requirements for the Frigate to improve its ability to operate in a more contested environment than LCS, enhancing its role in distributed maritime operations. In this role, both LCS and Frigate will free up our large surface combatants to focus on their primary missions including area air defense, land strike, and ballistic missile defense. The Navy is also seeking to leverage Fleet-wide commonality of combat system elements wherever possible to deliver capability and flexibility in the most cost effective manner.

To accomplish this, the Navy has established a Frigate Requirement Evaluation Team to update the previous Frigate analysis performed in 2014 and investigate the feasibility of

incorporating additional capabilities and enhanced survivability features into the current Frigate designs, as well as explore other hull forms. The results of this analysis will inform the top level Frigate requirements based on cost and capability trades involved. The Navy's revised acquisition strategy is under development and will ensure designs are mature prior to entering into a detail design and construction (DD&C) contract. The Navy will engage with industry in order to support an aggressive conceptual design effort, leading to a Request for Proposals to award the DD&C contract in FY 2020.

As we work through the requirements and acquisition processes for the Frigate, we will endeavor to transition from LCS to Frigate in a manner that maximizes the competitive field for our shipbuilding industrial base. We understand the potential implications of future acquisition strategies to our shipyards and their workforces, and these are considerations we do not take lightly. We are committed to delivering increased capability to our sailors at the best value for the American taxpayer, and that includes maintaining a competitive and healthy industrial base.

The Navy's role in providing for our national security includes ensuring freedom of navigation for all maritime traffic, providing reassurance to our partner nations, and deterring maritime rivals. As more LCS – and the Frigates that follow them – arrive in the fleets, they will deliver the combat capability our nation's security demands and the persistent presence our allies and partners desire.

We appreciate the opportunity to discuss these critically important shipbuilding programs. We thank you for your past support and urge your continued support. We welcome your oversight, and we look forward to answering your questions.

Rear Admiral Ronald A. Boxall
Director, Surface Warfare (N96)

Rear Adm. Ronald A. Boxall is a native of Holland Patent, New York. He attended The Pennsylvania State University, earning a Bachelor of Science in Science and was commissioned in 1984. He also attended the Naval Postgraduate School in Monterey, California, where he earned a Master of Science in Information Systems in 1991 and later attended the Naval War College in Newport, Rhode Island, earning a Master of Arts in National Security and Strategic Studies in 1997.

At sea, Boxall has commanded two Aegis ships—the cruiser USS Lake Erie (CG 70) in Pearl Harbor, Hawaii; and destroyer USS Carney (DDG 64), homeported in Mayport, Florida. During his seagoing career, he has made numerous deployments around the world from the Western Pacific, Atlantic and Indian Oceans to the Baltic, Mediterranean and Caribbean Seas as well as combat operations in the Arabian Gulf and counter-narcotics operations off South America. He has also served as executive officer of USS Hue City (CG 66); combat systems officer on USS Simpson (FFG 56) and USS Ramage (DDG 61); and as a division officer on USS Merrill (DD 976) and USS Kinkaid (DD 965). He has been a former Pacific Fleet Shiphandler of the Year, and also fortunate to have been associated with outstanding crews who have earned four Battle “E” Awards.

Boxall has been assigned to several staff positions ashore. In 1999, he was assigned to the Naval Personnel Command as a placement officer and later deputy, Surface Officer Distribution Division (PERS-41B). In 2004, Boxall was assigned to The Joint Staff (J-8), where he served as the deputy and chief of the Joint Staff Quadrennial Defense Review (QDR) Office, where he was selected as Action Officer of the Year. In 2007, he was the executive assistant to the director of Navy Warfare Integration (N8F). From June 2010 until May 2012, he was the executive assistant to the deputy chief of naval operations for Integration of Capabilities and Resources (N8). From May 2012 to July 2013, Boxall served as the deputy director for Surface Warfare (N96B) on the Office of the Chief of Naval Operations (OPNAV) staff. From July 2013 to October 2014, he served as the deputy director for Joint Strategic Planning in the Joint Staff (J-5). From October 2014 to July 2016 he served as commander, Carrier Strike Group 3.

He is currently serving as the director, Surface Warfare, OPNAV N96.

Boxall's awards include the Defense Superior Service Medal, Legion of Merit, Defense Meritorious Service Medal, Meritorious Service Medal, Joint Service Commendation Medal, Navy and Marine Corps Commendation Medal and the Navy and Marine Corps Achievement Medal, as well as various campaign and unit awards.

Updated: 23 August 2016

Rear Admiral John P. Neagley
Program Executive Officer, Littoral Combat Ships

A native of Edison, New Jersey, Rear Adm. John Neagley graduated from the University of New Hampshire in 1982 and received his commission from Officer Candidate School in 1984. He holds a master's degree in environmental management from Duke University, a Master of Science in Financial Management from the Naval Post Graduate School and a Master of Arts in National Security and Strategic Studies from the Naval Command and Staff College.

Neagley has served at sea aboard USS Whipple (FF 1062), USS Coral Sea (CV 43), USS John Paul Jones (DDG 53) and as executive officer on USS Antietam (CG 54), where he deployed to the Arabian Gulf and participated in Operation Desert Fox with the Carl Vinson Battle group. He subsequently served as chief staff officer, Destroyer Squadron (DESRON) 21 and deployed with the Sea Combat Commander to the Arabian Gulf with the John C. Stennis Battle Group. He assumed command of USS Fitzgerald (DDG 62) in 2001 and led her deployment to the Arabian Gulf in support of Operations Iraqi Freedom and Enduring Freedom in 2003.

Ashore, Neagley was assigned as Research and Development, Test and Evaluation (RDTEN) and Weapons Procurement (WPN) appropriations manager, Surface Warfare Directorate Office of the Chief of Naval Operations (OPNAV N86) from 1996 until 1997. He reported to Future Ships Branch (OPNAV N763) in 2003 and served as the lead requirements officer for the Littoral Combat Ship (LCS) program. In 2005, Neagley reported to the LCS Program Office as the principal assistant program manager and director of sustainment. From 2009 to 2011, Neagley served as the program manager of (PMS 408 EOD/CREW), where he fielded explosive ordnance disposal (EOD) and counter improvised explosive device (IED) systems to Iraq and Afghanistan. He was selected as the executive assistant to Naval Sea Systems Command in June 2011 and reported as the LCS program manager in March 2012. From September 2012 until March 2016, Neagley served as Space and Naval Warfare Systems Command deputy commander, Fleet Readiness.

In May 2016 he assumed the duties as the program executive officer for Littoral Combat Ships.

Updated: 4 November 2016

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

MAY 3, 2017

QUESTIONS SUBMITTED BY MR. LANGEVIN

Mr. LANGEVIN. You have spoken publicly about the Navy's concept for a network of armed nodes that require the adversary to deal with the entire system, not just a single ship or surface action group, not just one carrier strike group, or not just one submarine. I am curious about the role of the LCS in this concept, and how we might be able to refine the mission set of the LCS going forward.

Can you speak to how LCS's modularity interfaces may allow for the inclusion of the latest technology and how this modularity may differ on other classes of ships?

What might this mean to the warfighter in terms of ability to deploy unmanned surface, subsurface, and aviation assets in a distributed but netted fashion?

Additionally, what might this mean in terms of future weapon systems, such as directed energy systems, or railgun?

Admiral BOXALL. LCS was specifically designed with modular, open-systems architecture inherent in the ship and its combat system allow for rapid integration of technological solutions that increase capability at reduced cost. The ship possesses common Navy systems across the Command, Control, Communications, Computers and Intelligence (C4I) suite, which can be leveraged by the fleet commander to increase battlespace awareness. LCS includes designated weapons and mission spaces that provide defined support functions via common interfaces, codified in an Interface Control Document (ICD)—to include limitations of Space, Weight, Power, and Cooling (SWaP-C) which apply to both ship variants. SWaP-C is a critical factor in determining the feasibility of incorporating future weapon systems such as directed energy or railgun. The open-systems architecture of the LCS enables integration of these changes with less intrusive installation effort on the ship. Unlike traditional ship designs where installation of new systems may require significant alterations (such as structural modifications to provide space and foundations, cable runs to accommodate power requirements, changes to piping, etc.), LCS can support installation of new systems with minimal ship impact and cost. The Navy is investigating upgrades and backfits to LCS to improve the lethality and survivability, including upgrades that enable LCS to increase its contribution to the Fleet's netted tactical picture. For example, LCS has already successfully demonstrated its ability to deploy an unmanned aerial vehicle ("Firescout") in the 7th Fleet Area of Responsibility. LCS modularity and ICD specifications provide a streamlined path for insertion of new technology and weapons systems such as over-the-horizon missiles and directed energy systems. These attributes provide the Combatant Commanders greater flexibility to deploy a more lethal LCS combined with the warfighter's ability to employ multiple unmanned systems as a netted force multiplier.

Mr. LANGEVIN. As it pertains to both current LCS and future frigate variant acquisition strategies, I am concerned about throwing the industrial base into flux as design requirements change and procurement levels are drastically altered. What are your concerns regarding the industrial base, and how can we help mitigate any potential unintended consequences?

Admiral BOXALL. The industrial base for the Small Surface Combatants including LCS and FFG are extremely important to achieving our force structure goals in an affordable manner. The FFG(X) award delay until FY20 to mature the design and pursue full and open competition is supported by the continued procurement of LCS in FY18 and FY19 to deliver much needed capability and keep the industrial base stable. The Navy's most recent (2016) Force Structure Assessment (FSA) validates the warfighting requirement for 52 Small Surface Combatants (SSCs). As maritime threats continue to evolve and as the operating environment becomes increasingly complex, the Navy is placing greater emphasis on distributed operations, highlighting the need for a FFG(X) with improved lethality and survivability as a part of the full complement of 52 SSCs.

Mr. LANGEVIN. As it pertains to both current LCS and future frigate variant acquisition strategies, I am concerned about throwing the industrial base into flux as design requirements change and procurement levels are drastically altered. What are your concerns regarding the industrial base, and how can we help mitigate any potential unintended consequences?

Admiral NEAGLEY. The Navy recognizes the critical nature of maintaining the shipbuilding industrial base while transitioning from LCS to Frigate. PB18 defers procurement of the Frigate until FY2020, with additional LCS being procured in FY2018 and FY2019. This plan allows the Navy to mature the Frigate design and better understand the cost drivers across the various design options while preserving viability of the current small surface combatant industrial base and allowing them to remain competitive ahead of the pending Frigate award in FY2020.

QUESTION SUBMITTED BY MR. BYRNE

Mr. BYRNE. The Navy should be commended for utilizing expertise and relevant and developed technologies from allied navies with significant experience in the littorals. I'm aware that the LCS program has brought engineering and manufacturing of these technologies to the U.S., creating U.S. jobs. I believe we can bring more of these jobs to U.S. shores. I think we can provide the best ships, with the best technologies for our sailors, leveraging our allies' investment to create U.S. jobs.

How will the Navy continue to leverage this foreign investment moving forward with the frigate program?

Admiral NEAGLEY. To promote and provide for full and open competition, the Navy will consider any hull form—foreign and domestic—that meets the requirements. Having multiple offerors compete for the FFG(X) design will ensure competitive pricing and enable the Navy to select the best value design. Any future competitive solicitation for the Detail Design and Construction of FFG(X) shall include the requirements of U.S.C. 7309, which mandates that no major component of the hull or superstructure of any vessel constructed for the armed forces may be constructed in a foreign shipyard. Surface Vessels of War and Technical Data are included in the U.S. Munitions List and therefore subject to International Traffic in Arms Regulations (ITAR) restrictions. Therefore, any interested parties must comply with all U.S. export control laws and regulations.

