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THE NAVY LITTORAL COMBAT SHIP PROGRAM

HEARING

BEFORE THE

SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

HEARING HELD
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[There were no Questions submitted post hearing.]	

THE NAVY LITTORAL COMBAT SHIP PROGRAM

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE,
Washington, DC, Tuesday, March 10, 2009.

The subcommittee met, pursuant to call, at 10:04 a.m., in room 2118, Rayburn House Office Building, Hon. Gene Taylor (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. GENE TAYLOR, A REPRESENTATIVE FROM MISSISSIPPI, CHAIRMAN, SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE

Mr. TAYLOR. The hearing will come to order. Good morning and welcome.

Today the subcommittee meets in open session to receive testimony on the Littoral Combat Ship (LCS) program.

Our witnesses today are Rear Admiral Vic Guillory, director of surface ship programs for the chief of naval operations; Rear Admiral Bill Landay, the program executive officer for the surface ship structure; and Ms. Anne Sandel, program executive officer for Littoral and mine warfare.

I want to thank our witnesses for being with us.

To call the LCS program troubled would be an understatement. The fact of the matter is that this program has so far delivered one ship—one ship.

But a look at the plan from just two years ago, we should by now have at least four ships delivered, three more nearing completion from a fiscal year 2008 authorization, six more under contract from a fiscal year 2009 authorization, and today we should be discussing the authorization of six more ships for fiscal year 2010. That would be a total of 19 ships.

So instead of having 13 delivered or under contract, with another 6 in this year's budget, we have 1 ship delivered that will likely tip the scales well above two-and-a-half times the original estimate, and 1 ship that might finish this summer with similar, if not higher, cost growth.

The Navy canceled two previously authorized ships. No ships were placed under contract for fiscal year 2008, and no contract award has been made for the two ships authorized for fiscal year 2009—all of this from the program that was hailed as a poster child for its transformational and affordable acquisition strategy.

It seems all the program has accomplished is transforming a realistic goal of achieving a 313-ship fleet into a very real disappointment in which neither competitor shows remorse for being a year late and hundreds of millions of dollars over budget.

And from what I can see, neither competitor has a plan or even a desire to do any better, because they can count on the Navy throwing more money at their problems.

This program is not just a lesson of over optimism, poor management and lack of poor oversight, even though all those things occurred in spades.

The fundamental lesson is flawed strategic planning, flawed in the belief that the government can pass on to industry decisions that are inherently governmental, flawed in the belief that untested, unproven concepts, such as reconfigurable mission modules, can be incorporated into an acquisition program without testing and verifying the concept of surrogate platforms, and finally flawed to the absence of a Plan B for needed capability in the fleet.

I believe it is a lack of Plan B which has tethered the Navy so completely to this program. Particularly in the area of mine warfare, the LCS is the only future they see. Dropping the LCS program to develop another mine warfare platform is viewed as unacceptable on the schedule. And they might be correct.

However, because the Navy is at this moment stuck with continuing the LCS program, it does not mean its current strategy for buying these ships has to continue.

I have nothing against either of the lead contractors, but I know this. They both contracted to build a ship for $220 million, and they did not even come close.

I understand the Navy was guilty of changing the design specifications with the implementation of the Naval Vessel Rules, but I fail to see how that resulted in more than doubling the price and slipping 18 months of schedule.

I am also concerned that the Navy has not been able to come to terms with the contractors for the ships authorized last year. It appears to me the solution is simple. We need to bring true competition to this program, not the pseudo competition we currently have between the two poor performers, but true competition based on price, schedule and quality.

I have been asking for over two years if our nation owns the rights to the design drawings of the ships so they can bid them out directly to any shipyard with the capability of constructing the vessels. The answer seems to be yes and no.

I have got to believe at this point we should know every inch of bar, angle iron and plate in those ships, every piece of pipe. And every inch of weld ought to be on someone's CAD. And if it isn't by now, I would like to hear why.

I understand the prepared witness testimony will address this question. However, I would like the witnesses today, on the record, to explain that position and answer in layman's terms, not in the language of professional acquisition executive, the exact claim the government has on the technical design rights to both the sea frame and the combat system.

Then I would like our witnesses to explain how long it would take, what organization would be responsible—in particular who would be responsible—and how much it would cost to develop the technical data package described in the prepared statement that is required to bid ships directly to other shipyards or to current shipyards divorced of their lead contractors.

Ranges of cost and time are acceptable. What is not acceptable is taking this question for the record.

So far I have discussed just one ship, just what the Navy refers to as the sea frame. Today's hearing for the first time brings in an official responsible for the mission packages that are purported to give this vessel a multi-mission capability.

Although at least one of each type of mission modules has been developed, I am very concerned that major components of the overall mission package are still under development and have not been thoroughly tested. Therefore, I would request that Ms. Sandel update the subcommittee on the remaining development and testing for all the mission packages.

I would also like to know if anything in existing Navy platforms can operate with an LCS mission module as a stopgap capability filler until sufficient LCS ships are constructed.

Everyone should understand that the current situation of these vessels, costing in excess of a half a billion dollars, cannot continue. There are too many other needs and too little resources to pour money into a program that was designed to be affordable.

I would also like to remind all of the parties involved, particularly right now, that you do not want to be the program that is breaking the bank. From what I read in the newspapers, there are no protected programs in the ongoing debate on affordability.

Of course, none of the witnesses sitting in front of us today was responsible for the program when it began. They inherited a mess, and they are doing their best to fix it. I appreciate that.

Now is the time for frank talk on what needs to be done. We need the best price and the best quality we can get for these vessels, whether with the current lead contractors, after they finally get the message, or changing course and bidding directly with other shipyards.

Before I ask the ranking member for his remarks, I would like to remind the subcommittee that competition sensitive information, such as current estimates of prices, are protected by statute.

However, the Navy has agreed to answer these types of questions directly to individual members in an appropriate forum and under the conditions agreed to by the Navy, general counsel at our committee.

I now call my friend from Missouri for any remarks he may wish to make.

[The prepared statement of Mr. Taylor can be found in the Appendix on page 47.]

STATEMENT OF HON. W. TODD AKIN, A REPRESENTATIVE FROM MISSOURI, RANKING MEMBER, SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE

Mr. AKIN. Thank you, Mr. Chairman.

And welcome to the hearing. Thank you all for visiting us on what is a rather substantial topic.

Today is my first opportunity to join the subcommittee in overseeing the Navy's shipbuilding program. I have already begun to grasp the many complexities unique to the acquisition of battle force ships.

I recently had the opportunity to join Congressman Taylor at Austal USA in Mobile, Alabama, where the LCS–2 is under construction, and it is certainly an innovative ship. But even a newcomer to shipbuilding can see that much remains to be done.

I understand this program has faced many challenges, but a simple principle seems to have gotten lost. The principle isn't exclusive to shipbuilding: in sum, the importance of transparency and accountability in acquisitions programs grounded in sound strategy. And that cannot be overstated.

Sadly, in its early days the LCS program appears to have lacked accountability. Many important steps have been taken to rectify the situation, but the program still lacks a well-conceived strategy.

At various times in the last two years, the Navy has proposed a fly-off and down-select between these two flight zero ships, to be followed by a redesign for a flight one ship, investing in a class design services effort to convert the selected design to build to print and recompeting the class, redesigning the ships to include a common combat system in both, and last, an apparent desire to procure both ships from the existing teams with minimal changes.

We cannot reasonably expect the industry teams to make the investments in facilities and designs for affordability we demand, if we cannot articulate what we want to buy.

Further, we cannot reasonably expect the taxpayers to continue to fund ships that we cannot definitively say what we want. Even Obama's sweeping comments about cutting defense spending and weapons programs, do any of us believe we can defend a program for which we have no acquisition strategy and for which we have long since surpassed the acquisition cost target identified in the programs key requirements document?

Just last week, the president stated far too often that spending is plagued by massive cost overruns and an absence of oversight and accountability. We need more competition for contracts, more oversight when they are carried out.

His goal is to save $40 billion a year, and many observers have cautioned that this won't be possible unless he starts to kill major Pentagon weapons systems.

Now, I am in no way advocating that the LCS program fall victim to such a cut. I have every reason to believe that this program represents a critical capability for our warfighters. Despite the cost overruns, it can still become the most affordable ship in the Navy's fleet.

But there remain many questions which have not been answered to my satisfaction. I am going to list five of those.

First, is the LCS program still affordable within the context of the overall shipbuilding program? That is, what would we have to give up in order to afford 55 of these ships at a cost of approximately half a billion dollars?

Second, although the Navy has pushed for buying the LCS in substantial numbers prior to an operation evaluation of the first ships, given that the operational valuation of these ships will now be conducted within the next 18 months, would it be prudent to wait to procure additional vessels until the evaluation is complete?

Third, the high cost of shipbuilding frequently has its roots in decisions we make to protect the industrial base. These decisions have merit.

We want to ensure that this nation has surge capability and doesn't lose the national treasure that is the shipyard worker, but we need to be very cautious about increasing capacity for which the Navy lacks the volume to support.

And the fourth question: When the Navy has canceled two ships, failed to award the fiscal year 2008 ship before the appropriations rescinded the funds, and has yet to reach agreement on the 2009 ships, it has elected to incrementally fund construction on follow-on vessels.

Again, these decisions may be expedient in the near term to avoid layoffs, but will we lack here in two years discussing root causes of cost growth for the follow-on vessels and citing incremental funding?

Fifth, I want to applaud Secretary Stackley's determination to control costs. He has wisely chosen not to award follow-on contracts if the industry teams can't demonstrate they are on the glide slope to $460 million.

He has also forced behavior changes on LCS–2 to prioritize completion of construction. Yet if we accept delivery of ships or award ships that do not have all systems fully integrated, what bill are we leaving for a future Congress?

Lastly, the mission packages are really what make LCS a valuable tool for the warfighter. The Navy has not taken aggressive steps to integrate and test these mission systems or train crews on the systems on other platforms.

I echo the chairman's strong concern that we cannot continue to wait for LCS to be available in sufficient numbers to develop and deploy these capabilities.

Mr. Chairman, thank you for holding the hearing today.

Admiral Guillory, Admiral Leahy and Ms. Sandel, I look forward to your testimony and thank you for being with us.

Mr. TAYLOR. I thank the ranking member. We have been joined by Mr. Stupak, who represents the Marinette area, so with unanimous consent I would ask that he be allowed to join the subcommittee for the day.

The chair now recognizes the gentleman from Michigan for five minutes.

Mr. STUPAK. Well, thank you, Mr. Chairman. And it has been 15 years since I sat on this committee. It is good to be back on this side of the dais. And thank you for your interest in the LCS program.

You know when you take a look at this program here from concept to design to a functional ship—we built one up in Marinette Marine, the first one, Freedom, which was actually commissioned in Milwaukee, Wisconsin, on November 8, 2008, and will be stationed at San Diego naval base—this is a whole new ship, like I said, a new design, new concept.

Since 9/11 we have new adversaries. We have different types of missions. So the Navy needed a new ship, and your target started from scratch on a concept to a full ship that was built and presented to the Navy, built up in Marinette Marine.

Lockheed Martin had to partner with Marinette Marine to build the first LCS because of the strong advantage of constructing a ship in a mid-tier shipyard. Mid-tier shipyard shipbuilders facilitate competitiveness and establish affordable approach to a program.

The chairman is right. We should have 19 more ships, and we are happy to build the next 18 up in Marinette Marine.

But there has been some—because it was a new design, a new concept, constantly changing it, there were delays, but in the meantime as we built the first ship, since then we have had to lay off 150 employees at Marinette Marine.

This week they were going to lay off another 200, but because of a partial award of the LCS contract to Lockheed Martin on February 27th, those layoffs have been—they are not going to do the layoffs.

The full award of the contract and successful continuation of the program would stabilize the employment in this region.

But the LCS is not only vital to the economy of northern Michigan, it is also immensely—production prospects for the U.S. and abroad—all of our allies are very excited about this new ship, this new class of warfare ship.

We could bring in many, many more ships, more than just what the Navy needs and being built and cruised here in the United States. You know with the Navy there is also—besides warfare, we see anti-piracy operations. We see humanitarian aid operations, what this ship is suited for.

The recent award of the LCS contract, the one I just spoke about that was partially awarded here on February 27th, has taken some time to get these complex negotiations done between the Navy and the shipbuilders.

There were many production standards that are shifting to try to get these contract details without changing so we can get the ship that can be built at the cost of chairman spoke of, but not the first few.

The lead ships are always—a lead program on anything is always more expensive than originally thought of, but as you put more ships out, that price will go down.

As the Navy continues to fix the contract awards for ships authorized and funded in fiscal year 2009, I encourage the Navy, Lockheed Martin and General Dynamics to expediently address the contract details so that construction can proceed without further delays.

We are willing, ready and able and can produce the type of ship that the Navy needs.

So with an experienced team in place and production facilities on line, the program is ready for an early transition to full rate production. Doing so will reduce the costs and minimize the learning curves.

The LCS program is not only important to my Menominee Marinette area, but also the future capabilities of the Navy and to the defense of this nation.

So I urge the committee to consider not only the local impact of the award and the shipbuilding technology that we brought with this brand-new type of ship, but also to continue its discussions re-

garding the future of the current contracts and of the LCS program with the Navy, because this ship, which is needed with our new adversaries and the new demands on our country, the LCS is a ship that is appropriate to meet the needs of the Navy.

And we are proud to be playing a part in building such a ship for the Navy and for this nation.

Thank you, Mr. Chairman. With that, I yield back.

Mr. TAYLOR. The chair thanks the gentleman from Michigan.

Our witnesses today are Rear Admiral Victor Guillory, Director of Surface Warfare Division, United States Navy; Rear Admiral William Landay, Program Executive Officer for Ships, the United States Navy; and Ms. Anne Sandel, Program Executive Officer of Littoral and Mine Warfare.

The chair recognizes Admiral Guillory.

STATEMENT OF REAR ADM. VICTOR G. GUILLORY, USN, DIRECTOR, SURFACE WARFARE DIVISION, N86, U.S. NAVY

Admiral GUILLORY. Excuse me. Chairman Taylor, Ranking Member Akin, distinguished members of the subcommittee, thank you for the opportunity to appear before you today to address the Navy's Littoral Combat Ship program.

Along with Rear Admiral Bill Landay and Ms. Anne Sandel, we thank the committee for its continued support and active interest in the Navy shipbuilding programs.

We have prepared a written statement and asked that it be entered into the record.

Mr. TAYLOR. Without objection.

Admiral GUILLORY. I would like to begin my remarks, Mr. Chairman, by stating the Navy remains committed to the LCS program. LCS fills warfighting gaps in support of maritime dominance in the Littorals in its strategic chokepoints around the world.

The LCS expands the battle space by complementing our inherent blue water capability. The LCS program will deliver capabilities to close validated warfighting gaps in mine countermeasures, surface warfare and anti-submarine warfare.

In addition to LCS' inherent speed, agility, shallow draft, payload capacity and reconfigurable mission spaces, the ship is an ideal platform for conducting additional missions in support of the maritime strategy to include irregular warfare and maritime security operations, such as counterpiracy operations.

The strength of LCS lies in its innovative design approach, applying modularity for operational flexibility. LCS has over 40 percent internal volume, giving reconfiguration capabilities for up to 200 tons of equipment.

This ability to modify the LCS' physical configuration with different mission packages give the operational commander credible options for responding to changing warfighting requirements.

The Navy also remains committed to procuring 55 LCSs. We are systematically pursuing cost reduction measures to ensure delivery of future ships on a schedule that affordably paces evolving threats.

Affordability will be realized through a regular review of warfighting requirements and applying lessons learned from the construction and that test and evaluation of sea frames admission packages.

The Navy, as part of its annual review of its shipbuilding program, expect there will be sufficient force structure with our existing frigates and mine warfare ships until LCS delivers in quantity to meet deployment requirements.

Legacy mine warfare ships and frigates are planned to be phased out gradually. These decommissioning to be balanced with LCS mission package and sea frame deliveries to mitigate warfare risk.

In summary, Mr. Chairman, the Navy remains committed to the LCS program. A 55-ship LCS class will give our Navy the advantage it needs to maintain dominance in the Littorals.

In the near term, the Navy continues to work diligently to find efficiencies in construction and test and evaluation phases so that the Littoral Combat Ships are delivered as deployable assets in as timely a manner as practical.

We appreciate your strong support and the opportunity today to testify before the subcommittee regarding the LCS program. I will be pleased to answer your questions following the opening remarks by Admiral Landay and Ms. Sandel.

Thank you, Mr. Chairman.

[The joint prepared statement of Admiral Guillory, Admiral Landay, and Ms. E. Anne Sandel can be found in the Appendix on page 54.]

Mr. TAYLOR. Thank you, sir.

Admiral Landay.

STATEMENT OF REAR ADM. WILLIAM E. LANDAY, USN, PROGRAM EXECUTIVE OFFICER, SHIPS, U.S. NAVY

Admiral LANDAY. Chairman Taylor, Congressman Akin, distinguished members of the committee, I would also like to thank you for the opportunity to appear here today and discuss the Navy's Littoral Combat Ship program.

I appreciate your personal attention to LCS, including recent visits by members of the committee to some of our shipbuilders.

When the LCS program was initiated, it had two overarching goals: to address, identify and validate the warfighter in requirements in the Littoral battle space and to challenge many of the existing processes, procedures and conventions in naval shipbuilding that many believed had become too slow, risk adverse, and focused on a narrow set of solutions sets.

There was a belief held by some in both the Department of Defense (DOD) and the shipbuilding industry that we needed a different approach, one that allowed less conventional designs, greater use of commercial standards, and be focused on adapting existing systems available from throughout the world instead of along the R&D development effort.

LCS was seen as a class of ship that would benefit greatly from such an approach. Today we are 6 years into this effort, and as we look back, the results are mixed.

In some areas we have been successful. We have the first ship delivered 6 years after the program started, and based on initial inspections and evaluation, it is performing as required.

And we are close to delivering our second ship of a significantly different design later this year, two ships delivered in the time we traditionally would be completing initial design studies.

These are ships with unique capabilities to support mission packages, unmanned vehicle launch and recovery, open architectures, and a number of proven Hull, Mechanical and Electrical (HM&E) and combat systems from outside our traditional sources.

The reduced crew size of this vessel and its reliance on many practices from the commercial maritime industry drove us to more aggressive use of electronic navigation, unmanned and automated engineering spaces, improved focus on human interface to reduce workload, and automated damage control systems practices, which will have a great applicability to other ships throughout the fleet.

These parts of the program we have executed well.

Unfortunately, there are other aspects of the program where we have not had similar success. While we wanted to challenge our practices and processes, in a number of cases we overlooked hard learned, fundamental lessons of shipbuilding.

You must have a solid, mature design before you start construction. You cannot be negotiating standards and adding new technical requirements while you are building a ship. And if you have to make major changes, you need to stop and get them right, because rework kills productivity.

And you must have sufficient experience to management dedicated to the program to be able to identify and deal with rapidly emerging issues.

We have addressed these issues and LCS today in the following ways.

The design for both ships is mature, and we are incorporating revisions to specific areas based on lessons learned from the construction of the initial ship, proposed production improvements, acceptance inspections and early stages of the post-delivery testing period.

These revisions will be in place by the start of construction on the 2009 ships.

The Navy has increased the staff assigned to the program office and at the shipyards to monitor performance. The program staff has grown from eight to 20 personnel, with additional 12 billets assigned as the two lead ships complete delivery and post-delivery milestones this year, and more ships are placed under contract.

Similar increases have been made in the waterfront oversight area.

The fiscal year 2009 and fiscal year 2010 options will be fixed price contracts to ensure that costs and schedule adherence remain a primary focus both to industry and the government program teams.

There are no new technical or warfighting requirements added to the fiscal year 2009 ships.

We have two shipbuilding teams, who have the experience of building their initial ship, and we have worked to incorporate the lessons learned from the first ship into their follow-on production. Learning curve benefits should be evident on the fiscal year 2009 and 2010 ships.

In closing, LCS brings a critical capability to our nation. The Navy is committed to controlling costs and has taken actions to correct issues in the program. These corrections are in place, and we

continue to work on improving our performance and that of our industry teams.

There are challenges that still remain in this program as we work to get to steady-state production, but we believe that we are prepared to handle them as they emerge.

Again, thank you for this opportunity to appear before the committee, and I look forward to your questions.

Mr. TAYLOR. Thank you, Admiral.

The chair now recognizes Ms. Sandel.

STATEMENT OF E. ANNE SANDEL, PROGRAM EXECUTIVE OFFICER, LITTORAL AND MINE WARFARE, U.S. NAVY

Ms. SANDEL. Chairman Taylor, Ranking Member Akin, distinguished members of the subcommittee, good morning. My name is Anne Sandel.

Mr. TAYLOR. Ms. Sandel, you going to either have to turn on your mic or get closer to it.

Ms. SANDEL. Good morning. Chairman Taylor, Ranking Member Akin, distinguished members, I am Anne Sandel, the program executive officer for Littoral mine warfare.

I welcomed the opportunity to be here today to testify before the committee and to talk about the Littoral and Mine Warfare (LMW) programs, which have made significant contributions in developing and acquiring and maintaining operationally superior and affordable systems, providing assured access for U.S. and coalition forces to Littoral.

Our efforts are sharply focused to meet the joint warfighting forces requirements for dominance and for system access.

Today I am here specifically to discuss the LCS mission modules program and share with you the progress we have made in designing, developing, procuring, integrating and testing the mission modules for the Littoral Combat Ship.

The Navy has completed the rollout for the first of each type of mission package, has installed the mission package computing environment within LCS–1, and has initiated American Customer Satisfaction Index (ACSI) integration testing for the anti-submarine warfare mission package.

Each package provides warfighting capabilities for the one of three focused mission areas: mine countermeasures, which are detection and neutralization of mine threats; surface warfare for maritime security missions and defeating small boat attacks; and anti-submarine warfare, countering the shallow water diesel submarine threat.

These mission packages can be changed out over a 96-hour in port period so the ship is reconfigured and optimized for a different mission.

Mission package reconfiguration in LCS affords the combatant commander of flexible response to changing warfighting environments and is one of the signature design elements of the LCS class.

The quantity of each mission package type differs, based on analysis of projected operational requirements. Therefore, mission packages are developed and procured separately from the sea frame, a revolutionary concept to shipbuilding.

Employing an open business model facilitates upgrades to the LCS to warfighting capabilities as the threats evolve, and the open concept also helps us to reduce the total ownership cost of LCS over the years to come.

Again, we appreciate the sport of the House Armed Services Subcommittee, and I personally thank you for the opportunity to talk to today, and I look forward to answering your questions.

Mr. TAYLOR. The chair thanks all of our witnesses.

Admirals, again, I very much appreciate your many, many years of service to our nation and the hardships of your time you spent away from your families, and the hardships you have endured.

My frustration is not with your service records. My frustration is with your program.

If 60 Minutes were to walk through your door, put a microphone in front of you and say, "Admiral, you got something that was supposed to be a simple ship, mass-produced for about $220 million apiece. They are 18 months behind schedule, $300 million over schedule. Apparently every inch of the second vessel was welded by hand rather than by machine, and I don't see any plans that any future vessels are going to be produced any cheaper or any faster. And by the way, the competition that was supposed to be winner take all is now you have basically said, 'No, we are going to build some of each,' so you got two D-minus students, who are being graded on a curve, and so they have automatically got a C now, because they are only competing against each other."

Tell me how you would answer that question.

Admiral GUILLORY. Well, sir, I would like to start.

If, as you laid out, they walk through the door with a microphone and asked me about LCS, I think I would start out by reassuring them that the requirements for the ship was based upon a lot of study and a lot of analysis.

It clearly focused on the capability gaps in three major areas, as Ms. Sandel has laid out.

Mr. TAYLOR. Admiral, it is not about the need for the vessel. It is about the delivery and the cost of the vessel. No one is doubting the need. What we are doubting is whether or not these vessels at the present time are affordable, whether the next series is going to be any more affordable, that they will be built on time, because these weren't built on time.

So what has changed between vessels one and two that gives you, or more importantly, this Congress, which has to look the American taxpayer in the eye, any confidence that any follow-on vessels are going to be any closer to being on time and anywhere near the original projected cost?

I ought to also remind you that the price of aluminum is one-half of what it was two years ago, the price of copper is down just as dramatically, that there are machine shops and shipyards all over this country that are desperate for work.

And so the question would be, what makes you feel you owe these two shipyards anything, as far as the future, and what steps are you taking to broaden your base of suppliers and turn some of these opportunities into savings for the taxpayer and a fleet in the Navy saying sooner rather than later?

Admiral LANDAY. Mr. Chairman, let me take that part of the question, since it is directed more at the acquisitions side.

I would tell you today we have far more confidence in our ability to understand and have in fact mitigated the risk of these ships, because we have in fact built one and are about 85 percent complete on the other second one.

Initially, as we have discussed before, we started a design, and we started construction before our design was complete. Our designs now are very complete.

We have learned a lot of lessons in the course of the construction of the first two ships, from the imposition of Naval Vessel Rules to changes to rework that. In some cases the government required of them and in some cases the contractors had themselves.

We have learned those lessons, and we have incorporated those into the follow-on ships starting with the fiscal year 2009 ships.

We have implemented or seen the yards implement infrastructure improvement, going to the modular manufacturing facilities. We have seen infrastructure improvements being put in place that will start to come online this year that will continue to improve their processes.

We have spent a fair amount of time over the last year with both of the companies, going back and looking at specifications that we put in place that may have driven costs and having a discussion with them on whether we would still leave those in place or whether we could remove those.

We worked very hard with both companies to ensure that the design package that will be in place for the second ship is far more complete and incorporates many of the lessons learned that we made during the course of the first ship.

So we have done a lot to ensure that what happened on the first ship is not in place to happen on the second ship. And we also know that across our history, shipbuilders, good shipbuilders—and we believe both of these are good shipbuilders—get better as they get to go to the second and third ships in the series.

And so we do believe that the learning curve that we would expect to see from any good shipbuilders we are going to see in these two ships as they go down to the next set of ships.

Having said that, there is a very strong focus with us with those shipbuilders to ensure they are focused on costs and they are focused on price.

And one of the reasons why we have not yet awarded our fiscal year 2009 ships is because we continue to have very strong discussions with both shipbuilders in areas where we believe there can be some cost savings or where they believe we are driving costs into their program.

So I would tell you today we believe we are much more confident that we understand these ships. The shipbuilder you know, will get better over the next set of ships.

Mr. TAYLOR. Well, Admiral, since you said that, this subcommittee has about $14 billion a year to build 10 or 12 ships, and that is what we have to do, assuming that those ships are going to last for 30 years in order to get to a 300-ship Navy.

We have to deal in hard numbers. So having said, you did not mention the price of aluminum being down. You did mention that you think the shipyards would do better next time.

So what do you anticipate the cost of LCS–3 and LCS–4 to be? What should this subcommittee budget?

Admiral LANDAY. Well, sir, again, I am reluctant to talk costs to you in this——

Mr. TAYLOR. Sir, we have to talk costs.

Admiral LANDAY. But I am in the middle of the contract negotiations.

Mr. TAYLOR. You may be reluctant all day long, because at the moment I have got to tell you, Admiral, I don't think this ship is a bargain. I think these suppliers are taking advantage of our nation, and I am very reluctant to allocate a dime.

Now, we are going to work with the will of the subcommittee, but I think we need some reassurances that you have prices under control, and that translates into hard and fast numbers.

Admiral LANDAY. Well, yes, sir, and again, I would be happy in a closed session to tell you what we think those numbers are, based on the ongoing contract discussions.

What I can tell you is we understand that there is a cost cap. And as Secretary Stackley talked to you, we are working to ensure that we are driving both of these ships toward that cost cap for fiscal year 2010.

Now, what we are going to—the cost of the ship is going to be in fiscal year 2009 will be a function of what the end results of the contract discussions are. But I will tell you they are on a path to get toward the cost cap.

Mr. TAYLOR. The chair recognizes Mr. Akin.

Mr. AKIN. Thank you, Mr. Chairman.

I have a couple of bites and quick questions, and then maybe some little longer. The first thing is in terms of this program, is it really clear that there is one person in charge of this program?

Admiral LANDAY. Yes, the program manager and then the Program Executive Officer (PEO), the job that I have, are responsible for executing the acquisition part of it.

The Chief of Naval Operations (CNO), Admiral Guillory, as part of N86 (Surface Warfare Division), is responsible for setting the requirements consistent with the way that we do most ship classes.

And then Ms. Sandel has the mission packages under the broad auspice of my responsibility as PEO ships and the program manager.

Mr. AKIN. One of the things that I learned early on—I used to work for IBM—is if you have something that is really an important project, you need to have one person, who has got the responsibility for it, held accountable for it.

And so when I am looking at something, which is more than 100 percent over budget and 18 months late, it says to me somewhere along the line something went wrong.

I guess maybe backing up a little bit, was the $250 million ship—was that something that was just a pipedream to begin with?

Were these things low bid by both builders, knowing that the thing would go up, and they just basically said, "Hey, the way the

game is played, quote a low number, get the contract, and then jack it up."

Is that the way we do it? Or is there anything that we have to prevent bidders from doing that?

Admiral GUILLORY. Sir, I will start with that question. The 220 number that was initially estimated for the cost of the Littoral Combat Ship, the sea frame, the ship itself, was based upon a number of factors.

Those factors included the fact that it was being built on commercial standards. The strategy was to look at what would be commercially available, propulsion, hull mechanical and electrical systems, and take advantage of the attributes that have been demonstrated in the commercial sector and deliver to the ship the high-speed, shallow draft warship that we——

Mr. AKIN. So stop just a minute. So what you are saying is that 220 was based on a commercial hull design, not the Navy higher requirements type of hull design. Is that right?

Admiral GUILLORY. Yes, sir. That is correct.

Mr. AKIN. Okay. Then we made the decision to go from a commercial type hull to a hull that had all kinds of additional capabilities, take shock and everything like that, so it is much different and heavier than a commercial hull would be. Is that correct?

Admiral GUILLORY. Yes, sir. Naval Vessel Rules——

Mr. AKIN. And who made—so as soon as you do that, you make the hull much more expensive, right?

Admiral GUILLORY. There is cost associated with strengthening the ship.

Mr. AKIN. So who made that decision to go from the commercial to a Navy standard hull, then?

Admiral GUILLORY. Well, that was a Navy decision, and it was a decision made based upon the recommendations from the technical community. It was based upon the survivability needs for a warship that is going to go in harm's way and survivability requirements for a ship to do that, which commercial standards could not meet.

Mr. AKIN. Okay. Okay. So what you have already—what you are telling me is is we started with one idea, which was a commercial type hull. Then we threw that strategy aside and went to a more robust kind of hull.

I am not questioning whether which one is better or not. I don't know. But I know one thing, and that is you are changing your mind as you are going along, right? You start with a commercial hull. Now you say we are going to go to a more robust kind of hull that will cost more money.

Were there other major kinds of changes in the design, which also resulted in this more than doubling of its cost? Well, if you had to pick the three things that kept us from the $200 million to the $400-something million, what are the three biggest contributors to those costs increasing?

Admiral LANDAY. Well, I would say the change to Naval Vessel Rules——

Mr. AKIN. The hull design, basically?

Admiral LANDAY. The hull design. Yes, sir.

Mr. AKIN. Okay. The second thing would be what?

Admiral LANDAY. We did that while we were getting ready, or had already awarded the contract and were in fact in the early stages of construction, so it required us to do a lot of concurrent design change as we were going, which ends up driving you into a lot of rework into the program.

Mr. AKIN. Which is still the same point, which is we changed the hull design.

Admiral LANDAY. Yes, sir.

Mr. AKIN. Okay. So that is the biggest single one. What is the second biggest single one?

Admiral LANDAY. Again, the rework, as I mentioned, kind of related to that.

I would say that the third key piece of this is in any new program, the cost growth, the unknown unknowns were more significant than we expected. We always expect that there are going to be some. I think we found there to be more than we had expected in both of these yards—again, not unique to those yards——

Mr. AKIN. What were those unknown unknowns connected with? What were the main ones?

Admiral LANDAY. I would say that, again, the design, the use of American Bureau of Shipping standards, which is a new process that we had in place, and some confusion initially as we build our business rules on how we would look with American Bureau of Standards, which drove a fair amount of re-look and multiple looks at the design, which then slowed the design down.

On LCS–1 we had a problem with the reduction gear initially. It turned out to be much longer than we thought, which again caused us to do some concurrent redesign. You know so that I would say would be the second key piece that we found in it. And then——

Mr. AKIN. That was LCS–1. You had something in the reduction gear.

Admiral LANDAY. Yes, sir. In the initial design——

Mr. AKIN. How big is that compared to just this completely redesigning the hull?

Admiral LANDAY. It ended up being about a 26-week implication and a fair amount of rework.

Mr. AKIN. So timewise, it hurt us.

Admiral LANDAY. Yes, sir. And then——

Mr. AKIN. Cost?

Admiral LANDAY. And then as a result of that, what we did at the time—again, not understanding how long I think that total delay was going to be—we tried to continue concurrent construction around that and then got ourselves in a situation where we had to come back and do a fair amount of rework as that period stretched out.

Mr. AKIN. It seems to me that what I am seeing, and I don't want to overdo my time here, Mr. Chairman, but what it seems like to me, there is a pattern from the start, and that was that we have been changing our mind as we go along. And that, as you know, is deadly to a project.

Admiral LANDAY. Yes, sir.

Mr. AKIN. You start with the concept we are going to go with a more commercial, cheaper hull, and then just when you get that started building, then you go and change it to a more robust

warfighting kind of, which is a different design, and it is going to raise the cost of whole lot.

And now we have gotten to the point where we have built two different trial ships, and we are talking about building some more of them. And the Navy is even saying now, "Oh, we kind of like both of them." You know we are going to have every single ship. The Navy is going to be a custom ship, if we don't have discipline to say, "You have got to make a decision. You are going to have to stick with it."

If we keep changing the requirements, we haven't even had a chance to test either one of them. We are going to start to buy more of them. It seems like from just a couple of weeks since I took the trip, it seems like it is a little hazy as to exactly what is our acquisition strategy.

We are going to get—you know we have got this one started, the other one partly started. We have got to buy some of it. We are going to buy four, and then we are going to test them. We are going to partly test them. And we are going to get both of them. Do the Marines like—what—one better than the other?

It seems like there are a lot of questions, where there is not a clear-cut this is where we are starting, this is what it is going to look like, and it is clearly defined. It doesn't seem like we are nailing things down.

And the indecisiveness seems like it is costing us a whole lot of money. Do you want to respond?

Admiral LANDAY. Yes, sir. Well, I would certainly tell you in the 2009 and the fiscal year 2010 ships, what we have told both of the shipbuilders, and what we have put in our request for proposal, is we are going to build exactly the same ship we built for LCS–1 and LCS–2, that we are not changing requirements in that either—technical requirements or warfighting requirements—and that there are some, you know, things we learned in shipbuilding that would tweak the design.

So to your question of a lot of change which drove it, we clearly recognize that. That is not going to be the case in fiscal year 2009, 2010——

Mr. AKIN. But we are not getting much of a bargain on the third and fourth ships, are we? They are about the same cost as the first two, aren't they?

Admiral LANDAY. Well, again, there is, we believe—I mean we are working with the companies to drive that cost again toward the goal of $460 million in the cost cap——

Mr. AKIN. Are they going to——

Admiral LANDAY. I think we are going to——

Mr. AKIN. Before they are going to give you a real good price, they are going to want to know how many they are going to build of these.

Admiral LANDAY. Absolutely. Yes, sir.

Mr. AKIN. And it seems like to me I am not quite sure why we are going to build the third and the fourth till we know which one of the two we are going to choose.

And I am a little reluctant to say you know when you say, "Well, we want to buy both of them." Now again, you—what you are

doing, you are making decisions, which just drives the cost of ships up.

And somewhere along the line, we got to—I don't want to overdo the questions, but you can see why we have some concerns about what is going on, I think.

Admiral LANDAY. Yes, sir.

Mr. AKIN. Thank you, Mr. Chairman.

Mr. TAYLOR. The gentlewoman from Maine is recognized now for five minutes.

The gentleman from Maryland, Mr. Bartlett, for five minutes.

Mr. BARTLETT. Thank you very much.

Clearly, these ships were very much over cost and behind schedule. And the reasons for that are both the industry and us here in Congress. We have already talked about the Naval Vessel Rules increasing the cost and probably stretching out the schedule.

But a second thing that we in this committee were really complicit in was agreeing to the original schedule on how soon we put the ship in the water that enormously increased cost and stretched out the schedule, because a lot of things that that should have been upside down were now done in the water, which is very much more expensive and stretches the thing out.

So mistakes are made on both sides, and it is a little unfair to lay all of this increase in costs and stretch out of the schedule to the industry, because we were complicit in some of that.

Well, we now have the first Freedom class Littoral Combat Ship delivered, and I am told that the crew is pretty happy with its performance.

But clearly, affordability, as our chairman so aptly pointed out, remains a critical objective for this program. No matter how desirable it is, there comes the cost at which it is too expensive to afford, and we are going to put the money somewhere else.

I understand you have continued to work with the industry teams to refine the design and drive down the cost. Other successful surface combatant programs, such as the Arleigh Burke-class, achieved a significant savings by streamlining the production process.

Understand that the acquisition of specific long lead-time items could reduce the ship construction schedule by as much as 20 percent, which would be about 10 months.

What are your thoughts regarding an advance procurement that would acquire long lead materials to expedite this much-needed ship?

Admiral LANDAY. Yes, sir. We believe advance procurement is a vital tool to continue to drive the cost of this program and any program down, the ability to buy long lead material or specialty material certainly an example.

Had we used a long lead or an advance procurement (AP) strategy on the reduction gear on LCS–1, we would have run into the same problem, but we would have seen it much earlier in the process, or even before we started. So we certainly agree that an AP strategy is one that will help us as we go forward.

Mr. BARTLETT. Multi-year procurements have proven to be a sound investment strategy. They permit industry to accomplish long-term planning and result in significant savings to the govern-

ment and the taxpayers. Most importantly, they introduce the stability that many of our acquisition programs need.

Have you evaluated the savings that could be achieved on the Littoral Combat Ship program by implementing multi-year procurement? What would the Navy want—when would the Navy want to begin implementing such an approach?

Admiral LANDAY. Well, yes, sir. We definitely have looked at multi-year procurements, block buy procurements, the economic order quantity (EOQ) savings that you potentially get out of such a strategy. And one of our goals is to get to those kinds of strategies as quickly as possible.

One of the key things we want to make sure we do in our fiscal year 2009 ships is ensure that we do in fact have the design issues resolved as we had proposed.

And so our current strategy right now is to tie our fiscal year 2009 and fiscal year 2010 ships together in a common buy to start getting some pressure and quantity savings through those ships.

And so it would be in the fiscal year 2011 time period that I think we would be looking to go to a block, multi-year, or somewhere in that timeframe is where we would see that from an acquisition strategy perspective.

Still having some of the discussions within the Navy on exactly where you want to go, but that would be the timeframe that I would see us looking at it.

Mr. BARTLETT. Thank you. When the Littoral Combat Ship was first pitched to the Congress, it was a revolutionary idea, where you would have a ship that was capable of multi missions and that its mission could be changed during the fight. You wouldn't have to leave the fight and steam to port somewhere to put on the new mission packages.

Now that is an impossibility, because we do not have a medium lift helicopter that is large enough to change these mission packages during the fight.

And so the utility, the capabilities of the Littoral Combat Ship I think have been enormously diminished, because we now have to leave the fight, steam to port to change the mission packages, and then come back to the fight.

I know the argument is made that, gee, a larger medium lift helicopter wouldn't fit on the deck, and it is just because we designed it. We could easily change that. It now fits the 60. We could easily change that so that it would fit a medium lift helicopter.

Don't you think that the absence of this ability to change the packages during the fight seriously degrades the overall capabilities of the Littoral Combat Ship?

Admiral GUILLORY. Yes, sir. I would like to answer that question. The requirements for the LCS to change mission packages in response to an operational commander's tasking is to do it in a 96-hour period, and then the Concept of Operations (CONOPS) is designed to do it in port.

That includes changing out the mission packages and also doing the required testing in that period, to then return the ship to sea and to the fight.

The 60 Romeo and 60 Sierra series aircraft are designed to support that mission area, and those aircraft meet the requirements for the ships, sir.

Mr. BARTLETT. That maybe your program now, sir, but that is not what was pitched to the Congress when the Littoral Combat Ship was first sold to us. They were going to change the mission packages during the fight. You now cannot do that, and so you have to steam away and come back.

It wasn't 96 hours before. It was just a few hours, very few hours, when this thing was pitched to us.

Thank you very much, Mr. Chairman.

Mr. TAYLOR. The chair thanks the gentleman.

The chair now recognizes the gentleman from Washington, Mr. Larsen.

Mr. LARSEN. Thank you, Mr. Chairman.

First, for Ms. Sandel. On page eight of the testimony, it is noted that contract options for mission modules to be exercised annually.

My understanding one of the themes of the LCS, one of the themes of this hearing, as well as themes of the several previous hearings on LCS, has been the whole idea of controlling the requirements or understanding the requirements.

So what can you tell us about the mission module acquisition strategy that gives us some comfort that there will be some control on the requirements, especially as—if we are going to be going on a year-to-year annual contract, that the next contract after year one won't add, you know, the next five things to the contract that things will be really neat and really cool to have as part of the mission module package, and then year two to year three, and year three to year four?

Ms. SANDEL. That is an excellent insight, and I am going to——

Mr. LARSEN. Can you like just get right into that microphone?

Ms. SANDEL. Yes, sir.

Two pieces to that I believe that we have identified in the way that this acquisition is structured for the procurement of the mission systems and then for the mission packages.

The mission systems, which comprise the mission packages, each have their own independent industry partner or warfare center procuring agent that we have identified, so there are at least about 22 different mission systems comprising the three separate mission areas that ultimately end up being a package.

So that is one level of indenture that we have the ability to drive down and to cost and schedule and award these on separate contracts for each mission system. And that is another level of detail we could certainly be due either to walk you through.

So that is one particular area of control with regard to requirements creep and scope growth that those particular mission systems, without the—often have sponsors you know—or the fleet encouragement and direction, we would not drive cost or schedule or scope increase.

The second piece to that is the annual award or the re-award with the addressing the mission package integration production and award of the integrator that produces the package itself.

So you have the system that comprises it with the support equipment, all the infrastructure, all the things that happen that have to become a mission package.

That is the production and assembly contract that has been awarded in 2006. And that then becomes an annual event that we re-look and determine have they met the cost and schedule.

Mr. LARSEN. Is there a cost cap on that contract?

Ms. SANDEL. Yes, sir. Currently, it is a $159 million value, and that 10-year period of performance is predicated on past performance. So if they don't meet their warranty requirements and term requirements for that year, they will not be continuing into the future.

Mr. LARSEN. $159 million per year? $159 million per year?

Ms. SANDEL. A $159 million ceiling complete.

Mr. LARSEN. Per year.

Ms. SANDEL. No, sir.

Mr. LARSEN. Okay. Overall?

Ms. SANDEL. Yes.

Mr. LARSEN. Okay. Okay. Over 10 years.

Ms. SANDEL. Yes.

Mr. LARSEN. All right.

And just remind me. Is that then going to be run much like the—so is a contract awardee a system integrator?

Ms. SANDEL. He is not a system integrator in the sense that we have typically grown up with. It is a package production and assembly, so it is a greater role, taking multiple disparate mission systems, putting them together within the container, the computing environment, all the handling equipment.

So it is a level of detail and experience required that we are working closely together with the individual and the organization.

Mr. LARSEN. Okay.

Mr. Chairman, the reason I asked those questions, and I know that in the grand scope of a $460 million, $500 million ship, this might not be the greatest cost driver, or potentially greatest cost driver, but it would remind us that we are going to use the ship without mission packages that are—you know, that were and are affordable. So I think we are going to have to watch that aspect of it as well.

Admiral Landay, are you responsible for the assessment of the frigate and minesweeper availability and capabilities to fill in the gap left from the lack of LCS deployment?

Admiral LANDAY. No, sir, not me. That is really an Office of the Chief of Naval Operations (OPNAV) function.

Mr. LARSEN. Then could you talk to that plan?

Admiral GUILLORY. Yes, sir. The frigates will—of which we have 30 in inventory right now, active ships—begin leaving the inventory in our 30-year shipbuilding plan beginning in 2010, and throughout the next decade, they are decommissioned.

The mine countermeasures ships reach their service lives near the end of the decade, approximately 2016, 2017 timeframe, and then they begin to exit the inventory or are decommissioned.

LCS, as it comes aboard, is not a replacement for the frigates, but will do many of the missions that frigates do today. It will execute those missions with a 40-man crew, as opposed to a nearly

200-man crew that the Oliver Hazard Perry-class guided missile frigates (FFGs) currently have when they go to sea.

Of course, the mine countermeasure ships that we have today responding to combatant command (COCOM) combatant commander demand signals around the world, the Littoral Combat Ship with the mine countermeasure mission packages would essentially take up the watch in those areas.

And so we are closely examining the 30-year shipbuilding plan and the decommissioning plan to ensure that it's balanced and that we ramp up the capacity of LCS mission packages sure as the decommissioning of frigates and mine countermeasure ships occur.

Mr. LARSEN. And I understand that. We are not talking about a one-to-one replacement, but we are certainly talking about capabilities replacing capabilities.

And so what are you thinking in terms of frigate decommissioning and the capabilities that frigates have compared to the LCS capability that would, let us call it, supplement or complement it?

Are we going to be delaying frigate decommissioning in order to accommodate the delays in the LCS capabilities?

Admiral GUILLORY. I believe that we will continue to examine the decommissioning plan and the ramp-up plan of LCS. I mean, as we have all recognized, we have had delivery challenges with Littoral Combat Ship.

And we will have to continue to monitor that as we go forward to ensure as LCS is delivered and are deployable ready, that is matched up with what the frigates—as frigates are leaving the inventory, because many of the missions that the frigates do today, LCS will also do.

And so at this point we believe we have it right, that the decommissioning plan is balanced with the Littoral Combat Ship delivery and the mission package delivery. But that is under constant review, continual review.

Mr. LARSEN. Oh, it is still under review.

Admiral GUILLORY. Yes, sir.

Mr. LARSEN. Yes. Okay. Thank you. Yes, sure.

Admiral Landay, in your testimony you kept talking about the package of ships over 2009 and 2010 is the exact term you used, but over 2009 and 2010 we will do this, or over 2009 and 2010 we will do this, but then when you talk about warfighting capability, you actually didn't mention 2010 ships.

You said there would be no new warfighting capabilities on the 2009 ships, but then you neglected to talk about ships in 2010. Are you telling us that you are going to be adding different, new capabilities on the 2010 ships?

Admiral LANDAY. No, sir. Right now our strategy about, again, the 2009 ships or the key contract ones, but our strategy is basically to get the shipbuilders into serial production, where we can drive the efficiencies in production and cost, the recurring cost out of those programs as fast as we can.

There is right now and nothing on the horizon that would cause us, that we see, to put either warfighting or additional technical requirements into those packages.

And in our request for proposal that is out on the street, we ask them to bid us the fiscal year 2009 baseline and the same baseline

as options for the fiscal year 2010 ships. So right now we do not see any additional requirements that will come into either of those two ships.

Mr. LARSEN. Okay. A broader question is we noted in our separation memo for the securing, and I haven't heard it being interesting questions were being addressed in testimony, the vessels currently are too expensive to build at a rate necessary to fulfill the goal of 55 vessels without forcing other trade-offs.

There is an interesting headline in one of the dailies here on Capitol Hill about the Air Force budget, the debate about tankers and long-range bombers, which I have a direct somewhat of an interest in.

But the question, though, remains is what kind of trade-offs are you making? I mean if we are going to get to 55 LCS by a certain date to get to a 313, 319-ship Navy, what are the trade-offs that are being made? And the most obvious one within the Navy shipbuilding is the Arleigh Burke-class guided missile destroyer (DDG–51) versus the Zumwalt-class guided missile destroyer (DDG–1000).

I just would be interested to understand what the Navy's position is today on that trade-off.

Admiral GUILLORY. Sir, I think I would say it is not a trade-off as more as it is a all hands effort to continuing to look at the requirements, to look at the cost versus capabilities, and to review that in a transparent way to take every opportunity to weigh those requirements and perhaps reduce requirements, if it makes a ship more affordable and still not compromise the warfighting requirements for the ship.

That process, just in my domain as director of surface warfare, is one that I spend a lot of my time involved with, preparing assessments, preparing recommendations to review the requirements, the individual key performance parameters and key attributes for the ship, to ensure that we have it right to meet the warfighting requirements, but perhaps if it is reducing those requirements are changing those requirements would make the ship more affordable in the near term or lifecycle costs, to also make sure the leadership has that to make a determination and try to continue to drive down the cost.

You know it is not a destination so much as it is a something that it is part of will we do now all the time with LCS. And again, it is a commitment I think for the long-term, sir.

Mr. LARSEN. Well, I will just end here. I think that we are going to continue to provide guidance to help the Navy with some decisions, and I will also note that we don't sometimes do a very good job of providing that guidance on what I would yet call trade-offs.

If we are going to have a $14 billion shipbuilding budget, then in our world I think there are—we do look at it as trade-offs, because it is a limited amount of dollars, and what the Navy builds over a certain period of time to get to a certain number of ships is going to require some tough decisions not just by you, but by us on this side of the microphone as well.

Thank you.

Admiral LANDAY. Sir, and if I could just add in to what Admiral Guillory said, you know the other piece of it from the acquisition

side is, as we have talked about, for us to continue to drive the cost of those ships down.

Now, as Mr. Bartlett mentioned, certainly when they get to multi-year procurements, Economic Order Quantity purchases (EOQs), there are acquisition opportunities that drive some of those costs now. We, equally and very closely with the N86 folks, are looking at cost trade-offs, the cost of requirements, what we may be doing to impact those.

So I would tell you there is a very ongoing and rigorous and vigorous affordability initiative that is in place that I think will continue to key up as we go.

And we have been successful on many programs when we start doing that—Virginia, DDG–51 is a good example of as you get into serial production, there are more opportunities to continue to go after some of those affordabilities, and we are doing that as well.

Mr. LARSEN. Thank you.

Thank you, Mr. Chairman.

Mr. TAYLOR. The chair recognizes the gentleman from Virginia, Mr. Wittman, for five minutes.

Mr. WITTMAN. Thank you, Mr. Chairman.

Admiral Landay, in looking at the specifications on the second Littoral Combat Ship, I see that it is outfitted with a foreign manufactured main propulsion diesel engine, and I was wondering have these engines been certified by the American Bureau of Shipping, and do they meet the Navy's specifications as outlined in the contract.

And if not, can you tell us when these engines would be brought into compliance with the Navy's specifications and when they would be certified by the American Bureau of Shipping.

Admiral LANDAY. Yes, sir. They are required under Naval Vessel Rules in our contract with the prime General Dynamics to Meet American Bureau of Shipping Naval Vessel Rule requirements.

So the engines will in fact be classed and certified under that. The engines have been through just about all of those certifications. There is one additional test that is ongoing right now, but the company is required to meet that test, and the prime contractor will ensure that they do meet that test.

So they will comply with Naval Vessel Rules as outlined by American Bureau of Shipping and concurred with by the Navy technical authorities.

Mr. WITTMAN. So that is going to be taking place. He said they are in the process of doing that. Do you have a hard stop time when that is to be achieved?

Admiral LANDAY. Well, sir, the remaining test is what they call a 1,500-hour run test. You know basically it is about a 60-day test by the time you do it.

Obviously, as sometimes happens in those tests, something will come up. They will have to stop the test, kick something, look at it, and then start the test up again.

But we anticipate that they should have that test completed at or close to delivery of the ship. They have already passed through 500-hour tests, a number of other tests on there. This is the long-term endurance test, but they are required to meet that.

And if they don't meet that, it will be under—you know by the time we take delivery, it would be a warranty item to the manufacturer and the prime contractor.

Mr. WITTMAN. Thank you.

I am also concerned about the suggestions for moving this LCS program to other shipyards. And this process in the past has cost more than $100 million when executed on previous surface combatant programs. And as you know, it has resulted in significant schedule delays.

And I was wondering what is your estimate of the additional cost and further delays that would result on the program, if the acquisition strategy were significantly changed?

Admiral LANDAY. Obviously, any time, as we have talked before, that you change your acquisition strategy or your process in midstream, there are some implications to that.

We, as we have looked at bringing a second source in as a possibility, we have looked at what we did back in previous days with you know some of our other destroyers.

I would tell you a very broad, raw estimate of this would be on the order of about $60 million per ship, and probably about 18 months to 2 years per sea frame in order to have in place a package that we think we could compete very effectively.

Then obviously, the next issue is it becomes another the yard in a—or lead ship in a new yard. It will be a function of how well that yard is able to ramp up.

The advantages at this point we wouldn't anticipate bringing new design, new package to that yard. It would be a pretty solid design.

But obviously, as with anybody, there is a ramp up when you start the first shipping go to the second one.

Mr. WITTMAN. I want to go back and talk a little bit more about acquisition strategy. In looking at the acquisition strategy, it appears that there is not a clear or approved acquisitions strategy for LCS.

And I know that the Navy has proposed several different strategies over the last three years from a fly-off between two ships followed by a down-select, to a fly-off and possible down-select, to converting the selected design, to build a print and recompeting the class, to buying both vessels from the existing teams.

And I was wondering with the increasing emphasis on acquisition reform, and we just had a meeting this morning talking about how we perform that process, why should the Navy continue to procure vessels for which there is no acquisition strategy?

And again, we have been back and forth on this. I know there is a lot of consternation about those portions of the program where we have had some problems.

But it seems like to me if we are ever going to get to a point to clearly move forward this program, there has to be a clearly defined acquisition strategy.

And I am just wondering where are we going with that, and when will that acquisition strategy be defined?

Admiral LANDAY. Well, obviously, as I mentioned, we have a strategy for the fiscal year 2009 and 2010 ships, as I talk to you.

One of the discussions that we will have as we go forward in our acquisition strategy is are we in fact going to go and down-select to a single ship, or are we going to stay with the two-ship design?

Each design brings—because of the way that we did that—brings capabilities that we think have real value to us. When you talk a 55-ship class, and you potentially talk 25, 27, depending on how split that up, potentially of each one of those, there is still a pretty sizable class and enough opportunity in there to get learning and to get benefit out of that.

So I would tell you right now it is not a specific time where we would look at a down-select or going to a single one. It is really getting the ships out to the fleet and to getting input from the fleet, from the operators, balanced always, of course, to the cost of the ships.

You know if we find out one ship turns out to be significantly more expensive than another, then that becomes part of the discussion in our acquisition strategy.

But as we have always said before, one of the key inputs we want to make sure we get is get both designs out there operating so that we can get a good assessment of the pros and cons of each one of the designs.

Admiral GUILLORY. Sir, if I may just add one additional factor, that while the first two ships do give us a learning opportunity, and not only for the sea frames themselves, but for the mission package development and the launch and recovery systems, we appreciate the committee's support for the 2009 and 2010 ships, because those ships address the capacity issue, the fact that we need the ships today for missions that we have today.

And if those ships were here today and deployable ready today, I would have little doubt that they would not find themselves perhaps off the coast of Somalia or other places in the world where econo-piracy threatens our ships and our commercial traffic.

So there is prudence in learning from the two ships, and there is a plan to do that. However, there is also a compelling need I believe, certainly from my perspective, to address the capacity and capability gap that we have today.

And the ships in 2009 and 2010 will go a long way to addressing that, sir.

Mr. WITTMAN. Thank you, Mr. Chairman.

Mr. TAYLOR. The gentleman from Michigan, Mr. Stupak, for five minutes.

Mr. STUPAK. Thank you, Mr. Chairman. And thank you again for your courtesy in allowing me to do this, sitting in on this hearing today.

Admiral Landay, you spoke in your testimony about solid and mature design. Do you believe you have that solid and mature design now for the LCS?

Admiral LANDAY. Yes, sir, we do, certainly for LCS–1, which we are taken through the initial acceptance testing. We believe we have a solid design there. Now, there are pieces of the design package that we are continuing to work through.

We believe we have a solid design for LCS–2, and we will assess that when we get that ship delivered and go through testing as well.

Mr. STUPAK. LCS–1 Freedom was just built up in my neck of the woods there—Menominee Marinette area.

When you look back at that design, now that you have been through the first one, is it realistic to expect that the ship can be purchased at $220 million or $250 million?

Or now that you have a design down, when you have gone from commercial to your Navy standards for the hull and propulsion issue, is it realistic with hindsight not to say that the ships are going to cost only $220 million or $250 million?

Admiral LANDAY. Well, no, sir. I think as we look at the ship as we currently have it designed today, we would not be able to build that ship for $220 million. That is a true statement.

We believe we can build it for less than the first ship cost, as we get in those production efficiencies and affordability. But yes, sir, I do not think we would be able to build that for $220 million.

Mr. STUPAK. When you talk about your production efficiencies and long leads, so ship number 20 should be significantly less than ship number one. Ship number 40 should be less than ship number 20, on down the line, correct?

Admiral LANDAY. Yes, sir.

Mr. STUPAK. Freedom LCS–1, which is already—it is in San Diego right now—any problem with the workmanship, the quality of that ship?

Admiral LANDAY. No, sir. Actually, she is in Norfolk right now doing a post-delivery. She will be going to San Diego later on. We still have additional testing to do with her here on the East Coast before we send her over—and testing, I mean things we were unable to do in the Great Lakes do because of requirements and restrictions of there.

You know all the ships have issues that pop up. That is why we do a pretty thorough shakedown and testing, but we have not heard anything from the crew or our process with it.

Mr. STUPAK. So as far as the craftsmanship, there is no problem there. The problem with the first one was design changes, different standards that the Navy had put in on the ship, then. This is not a problem with the yard.

Admiral LANDAY. Well, yes, sir. I mean obviously then there is also production efficiencies, and you know I think in some cases both yards assumed they could build the ship more efficiently than it turned out that they could in a lead ship.

I think they have learned from that, and we certainly expect that the next ship—they would produce it more efficiently.

Mr. STUPAK. Okay.

Let me ask you this question. Both shipyards have planned to improve their production capabilities. And hopefully, this will lower the cost of the ships.

What other benefits does the Navy realized by using the same yards to build the ships? Could you just in layman's terms? What other benefits are there besides repeat in production? Do we see a taxpayer savings?

Admiral LANDAY. Well, obviously, as you mentioned, the repeat and the learning curve, as we call it, as the yards get more efficient, as the production process is improved, as the workforce see opportunities to streamline the process is one of the key issues, ob-

viously, as you get more production in a yard, there is a tendency in that yard to put more infrastructure in place themselves to support the continued moving down the production line.

Obviously, if there is additional Navy work that goes into a yard as they perform well in one program and maybe have an opportunity to compete for other, there is a sharing of overheads and other things across those yards.

Mr. STUPAK. In your testimony or answer to a question, you indicated—or maybe it was the other admiral—with the frigate, you have 200 people on, and LCS you are going to 40 people.

Is that cost savings figured in over 30 years, the life of the ship, as to the value to the Navy? And is that part of what cost factor you look at?

Admiral GUILLORY. Yes, sir. That was part of our calculus, considering the lifecycle cost of the ship. From my experience, manpower continues to be the most expensive single element of a program over the life of that program.

And it is just amazing to think that the missions and the capability this ship will be able to deliver with essentially a 40-person crew—and many of the missions we have today are done by frigates—is a huge step forward, and I think it will be reflected in the overall lifecycle cost of that ship.

Mr. STUPAK. Do you have any estimation what is the cost of going from 200 to 400 sailors on a ship?

Admiral GUILLORY. No, sir, but we can provide that information to you, sir.

Mr. STUPAK. Then may I ask one more question, if I may, Mr. Chairman?

You indicate there is much interest in the LCS by other countries, our allies. Have any of the allies placed an order for any of the ships, or appear to be working with you to place such an order?

Admiral LANDAY. No, sir. There are no orders currently placed by any other country. There has been significant interest from a number of countries.

So there have been discussions, answering questions with them, you know through the typical process, but so far there has not necessarily been an order. I think they are waiting to you know see the performance of the ship as we go through our post-delivery test and trials.

But I can tell you there is significant interest. We have had riders on the ship, and there continues to be great interest in it.

Mr. STUPAK. Thank you. I have no further questions.

Mr. Chairman, again, thank you for your courtesies.

Mr. TAYLOR. The chair thanks the gentleman from Michigan.

Admiral, on my visits to the yards, I have seen Captain Murdock there, and I would presume Captain Murdock's job is to make sure that the ribs, the frames, the scantlings are all there, that he has got some sort of a set of specs that he is checking, that he has an original set of plans that he is checking against what is being done to make sure that what the shipyard is doing is matching what you have on paper. Is that correct?

Admiral LANDAY. Yes, sir. And the design is actually the shipyard's design. The design is endorsed by the American Bureau of Ships (ABS) under the Naval Vessel Rules, and then both ABS and

the Navy supervisor shipbuilding ensure that the ship is built to the design that we certified.

Mr. TAYLOR. Does he use computer-assisted drafting in order to generate those specs that he uses to ensure that the shipyard is following?

Admiral LANDAY. Yes, sir. They use commercial computer-aided design (CAD) programs that are available.

Mr. TAYLOR. Okay. So I would think using that, he ought to know every pound of aluminum that goes into one and every pound of steel that goes into the other. Is that correct?

Admiral LANDAY. Yes, sir.

Mr. TAYLOR. So what percentage of the cost of those vessels is materials—raw materials—not engines, just steel and aluminum to get the hulls?

Admiral LANDAY. I don't know that off the top of my head, sir. I could get that for you. I just——

Mr. TAYLOR. Well, Admiral, the point that I hopefully am making is anyone who can read the commodities section of the paper knows what the price was and the price of aluminum is one-half of what it was two years ago.

We have a nation that is $11 trillion in debt mostly because we are not doing a good enough job in trying to find some bargains for the taxpayers. So who in your organization is responsible for putting a pencil to how much actually goes into those vessels and how much we ought to be saving now over 2 years ago?

Admiral LANDAY. Well, part of that is the ongoing contract discussions with both——

Mr. TAYLOR. No, sir. Who in your organization? I would like a name, Admiral.

Admiral LANDAY. Well, the program manager and then myself as the final source selection authority for the next contracts. That is one of the things that we have in there.

One of the discussions we have had with both companies in the original bids that they gave us for the fiscal year 2009 ships, you know they were based on a certain timeframe in which we would have got the prices.

We asked both companies to go back and see what they could get, reductions in those prices based on new prices of the material.

At the same time, there are affordability initiatives that we work with both of the companies to try to drive the neighbor, manpower and even material out of it.

Mr. TAYLOR. One thing at a time.

Admiral LANDAY. Sir?

Mr. TAYLOR. So if I called your program manager and said, "What did you pay for this deal a couple of years ago, and if you had to buy it again today," he could give me an answer this afternoon?

Admiral LANDAY. Sir, he should be able to.

Mr. TAYLOR. Okay.

What percentage of LCS–1 was welded by hand, as opposed to on a panel line?

Admiral LANDAY. I could get that for you. I don't know.

Mr. TAYLOR. Who in your organization would know that?

Admiral LANDAY. The program manager and his team would know that.

Mr. TAYLOR. Could Captain Murdock give you an off-the-top-of-his-head estimate?

Admiral LANDAY. We could get it for you, sir. We can get it. We can get it for you. He doesn't necessarily——

Mr. TAYLOR. Well, would you say 100 percent was done by hand?

Admiral LANDAY. No.

Mr. TAYLOR. Okay. Would you say 90 percent was done by hand?

Admiral LANDAY. I think about half.

Mr. TAYLOR. Okay.

On the Austal ship, which is LCS–2, what percentage of that ship was welded by hand?

Admiral LANDAY. Certainly higher than that. I think it is closer to about 70 percent.

Mr. TAYLOR. Okay. You are now speaking with the shipyards about building 3 and 4. Marinette would get 3. Austal would get 4.

What percentage of LCS–3 do you expect to be welded by hand, and what percentage on a panel line?

Admiral LANDAY. Certainly, we would expect LCS–3 to be less. Again, I would have to go back into the contract discussions in your bids.

Mr. TAYLOR. Well, how much? Admiral, what is your goal?

Admiral LANDAY. Pardon?

Mr. TAYLOR. If we can see things like panel lines save money over hand welding——

Admiral LANDAY. Right.

Mr. TAYLOR [continuing]. Speed the process——

Admiral LANDAY. Right.

Mr. TAYLOR [continuing]. Wouldn't it be reasonable that the Navy is telling the contractor this is how much I expect to be done by machine next time?

Admiral LANDAY. No, sir. What we tend to tell the contractor is that we want to see the ship built at the cheapest cost consistent with your processes and infrastructure at the time.

Mr. TAYLOR. Admiral, with all due respect, we have opposite challenges. Their goal is to make as much money as they can for the shareholders. Our goal should be to deliver a first-class ship to the Navy at a reasonable cost to the taxpayers. Those are different goals.

Admiral LANDAY. But both of us have the same goals, because they will deliver a good cost to their shareholders, and be able to deliver a good product to our ships, if in fact they continue to drive the cost of their ships down, we get ourselves into serial production.

In fiscal year 2010, they have an opportunity competitively to potentially win some more ships, so it is definitely in their interest to drive the target price of their ships down consistent with——

Mr. TAYLOR. Admiral, with all due respect for your many years of service, I respectfully disagree. I really have seen no effort on the part of either contractor to try to improve their process, because right now all they got to do is compete with that other guy, who is also not doing much to improve his process.

And if the Navy isn't going to step in and say you have to do a better job, who is?

Admiral LANDAY. Well, we have told them that they have to do a better job. We have not stepped in and told them specifically how to build their ship and their process. In Austal, as an example——

Mr. TAYLOR. But, well, Admiral, wait. Admiral, if I may, because the subcommittee also funds the David Taylor Research Center. And we spent a lot of money out there, and there are a lot of very smart people out there.

Admiral LANDAY. Right.

Mr. TAYLOR. And I thought the purpose of their research center, one of the many purposes, was to find more affordable ways to build more ships.

Admiral LANDAY. Right.

Mr. TAYLOR. So why isn't the expertise of David Taylor being turned loose to find a more affordable way to build what was supposed to be an affordable warship that is now 18 months late and 100 percent over budget?

Admiral LANDAY. Specifically on David Taylor, again I think there are processes as we develop them through our ManTech program or our research and development (R&D) program through the National Shipbuilding Research Program (NSRP) and those organizations that moved those R&D concepts out into their shipbuilders, now there is an avenue to do that.

Mr. TAYLOR. When I walked through Austal shipyard a couple of weeks ago, I saw absolutely no effort being made to save the taxpayers a dime.

Admiral LANDAY. Well, I——

Mr. TAYLOR. Like Orange County choppers when we ought to be kicking out Hondas.

Admiral LANDAY. You are talking about down in Austal, sir?

Mr. TAYLOR. Yes, sir.

Admiral LANDAY. I can tell you in Austal there is over a $100 million investment going on in there to get them to a modular manufacturing facility. That facility will be online in the May timeframe. It is about halfway done.

If you remember coming into the yard, off to the left you saw a big building that was being built. Many of the processes that we expect them to be able to do in that modular manufacturing facility, which we think will have a significant improvement in their productivity, we are testing out right now, and some of that work that you saw in the back part of that shop.

There is a major investment going on in that yard, and there is a significant investment planned for the other yard to work many of those specific areas.

Mr. TAYLOR. And Admiral, did Austal make that investment, or did the taxpayers make that investment?

Admiral LANDAY. I believe it was the state made the investment.

Mr. TAYLOR. State taxpayers.

Admiral LANDAY. Yes, sir.

Mr. TAYLOR. And if I am not mistaken, some of that was also Katrina money.

Admiral LANDAY. Yes, sir.

Mr. TAYLOR. Okay.

Admiral, I asked in my opening statement how long would it take and what organization would be responsible and how much would it cost to develop the technical data package that is required to build the ships directly in a free and open competition.

Admiral LANDAY. Yes, sir. And our estimate at this point, as we have looked through that, is on the order of about $60 million per ship, probably 18 months in order to have that package ready to go, from when we snap the baseline.

And one of the key issues, when you want to get to a build to print concept, where basically we are going to contract with a shipyard, and we are going to evaluate the shipyard not on the performance of the ship, but on the performance of the specific work package that I gave him under the contract, is to ensure that we have incorporated all of that change.

So under a build to print concept, for example, we would not want to go into build to print contract until we had been through our post-shakedown availability through all of our testing, all of our evaluation, to ensure that the ship that we would put under that contract has got a very solid baseline, and we understand what it is.

Now, having said that, there are a lot of things that you got to do in preparation for that.

One is to clean up the drawing. So in a new ship—you know first of a class, you have a drawing. The shipyard came up with the drawing. We start to build that ship. We find issues, interferences, changes, whatever it is. We annotate. The shipyard does those drawings.

When you get done, what you want to go back in is clean up all those drawings, make sure all those changes, revisions, modifications are fully incorporated into the drawing.

We are doing that right now with the fiscal year 2009 in both of the shipyards, so we are taking those first steps. But what we would really want to do before we would get to a build to print concept is to define what that baseline is, because any change I make after that baseline is all going to be change on me, and it is going to be change to the target, not change on the share lines.

Mr. TAYLOR. Okay. So just for clarification, if this committee wanted to reserve all of our options as far as a free and open competition on follow-on ships, we would have to allocate approximately $60 million per design.

Admiral LANDAY. Yes, sir. That would be our estimate at this point.

Mr. TAYLOR. To be expended at David Taylor, or where?

Admiral LANDAY. We haven't necessarily decided where it would be. Well, there are a couple of ways that we could do it. One of them would be to go out. Some of that is this. Some of that would be to the individual shipyards to clean up, as I said, the work packages they have in place.

And then we would have either a subsequent design agent that could be Naval Sea Systems Command (NAVSEA) or that could be a contractor like Gibbs & Cox or somebody like that, who builds then that design package for us out of the designs that we get.

So when you think build to print, you have got to remember that it is going to be more than just the hull of the ship and the distrib-

uted systems. It is really the entire integrated ship that you want to look at, so it is the combat systems implications, the cables, the testing.

You know how do you test that ship? How are you going to put all that in? That all becomes part of an integrated data package, if we are going to go to build to print for the entire ship.

But it would be a third-party source in our mind, who would—you would take that design responsibility, and whether that would be the Navy under NAVSEA or whether that would be you know one of the other design houses, we haven't decided that yet.

Mr. TAYLOR. Admiral, given that, what are the chances that the mission modules will be ready prior to LCS–2 going to sea?

Admiral LANDAY. The mission modules? Well, there are some mission modules that are currently ready right now.

Ms. SANDEL. Yes, sir. If you would allow me, we delivered, as you are aware, initial mission modules in each system with Anti-Submarine Warfare (ASW) and mine countermeasures and the Surface Warfare (SUW).

We are in varying levels of technical maturity and testing in every one of those areas, so we have timed ourselves to be in sequence to the sea frame.

We have intentionally slowed down in some areas of design and development and testing in order to pay this sea frames so that we are not delivering ahead of need, but having them available for the testing required to be able to support the requirements.

We have intentionally taken the same steps back to go ahead and pace ourselves to not buy things in advance and having them sitting on the dock awaiting a sea frame. So we are in lockstep as far as alignment of schedules.

Mr. TAYLOR. Has any thought been given to putting those modules on other platforms?

Ms. SANDEL. Sir, we have been asked by your organization to take a look at alternative platform studies, and that is in process right now, and Admiral Guillory may want to speak to that little bit more.

But we have analysis ongoing, as well as experimentation to design the desire. How will we do this, and if it is feasible, and how would you go about it.

Mr. TAYLOR. And when should we expect an answer on that?

Ms. SANDEL. The language requested it be submitted with the submission of the fiscal year 2010 budget.

Mr. TAYLOR. So we should already have it?

Ms. SANDEL. It is in process to be submitted. Yes, sir.

Mr. TAYLOR. The chair recognizes the gentleman from Pennsylvania, Admiral Sestak.

Mr. SESTAK. Thank you, Mr. Chairman. I apologize. I was at another committee on healthcare, which is kind of why I initially got into this line of work.

I wanted to ask—and if these have been asked, I would apologize. I jotted down a few notes while I was in the other hearing—at the end of January, you had said you were going to award a contract for the two fiscal year 2009 ships, and they were going to be bundled into the three that will be the fiscal year 2010.

Does a delay on that have to do it all with that they are having problems meeting that cap, the $460 million cap, for the fiscal year 2010 ships?

Admiral LANDAY. Well, I will say that the real focus on the fiscal year 2009 ships and the way we had proposed that was we wanted the fiscal year 2010 ships to be options when they provided us their bids for the fiscal year 2009 ships.

And the intent is to try to get both more pricing pressure and more economic or the quantity opportunities for the shipbuilders buy them potentially being able to look at four—you know, four, three, two or one, depending on how that worked.

So right now the delay—and again, our goal had been in the January timeframe. It was really going to be function of when both sides could come to agreement. The delay has been as much in trying to continue to work through affordability and cost reduction efforts on both sides on the 2009 ship——

Mr. SESTAK. Does the delay have anything to do with their having problems meeting that cost cap fiscal year 2010 ships?

Admiral LANDAY. Well, we will see when we get their final work. But, yes, sir, that is one of the key drivers that we are working very hard, is that we are on a path to do that, and everybody understands that is one of the requirements.

Mr. SESTAK. I guess is LCS–2—has the price—have you had any budget growth on that since what was in the fiscal year 2009, what was presented in the fiscal year 2009 budget?

Admiral LANDAY. We will be able to deliver the ship for the money that we had in the budget. Yes, sir. I mean there have certainly been some cost growth that eating into the program manager's reserves into the program.

Mr. SESTAK. About how much?

Admiral LANDAY. I can get it to you, sir, separately.

Mr. SESTAK. Do you think it would—in a GAO study that was done and other times, they have talked about the aircraft carrier being funded at a confidence level of less than 40 percent and ships being funded—and I understand perhaps the LCS initially—at less than 50 percent confidence factors for the prices that you provide Congress in the budget.

Do you think at this stage of the game with the issues that have been attendant to the LCS in costing, confidence, as you come forward again, that we should cost it now to at least 80 percent costing factor?

What is the downside of telling us we have got an 80 percent confidence factors, that that is what the real price is?

Admiral LANDAY. Yes, sir. I think at an individual program level—you know if you just looked at LCS stand-alone, certainly you would like to do that. When you look across all of the shipbuilding programs and the balance, obviously, that the department needs to do in terms of risk versus capability, I think that is really the trade that we have to make.

Mr. SESTAK. So is the $460 million—is that at 80 percent confidence factor in your pricing right now?

Admiral LANDAY. No.

Mr. SESTAK. What is it?

Admiral LANDAY. I would say it is probably 50 percent.

Mr. SESTAK. So there is a 50 percent chance at best that we might hit the $460 million.

Admiral LANDAY. As we currently, yes, sir, as we currently have the ship designed, absent any affordability—now, again, you get into multi-years and EOQs, and that helps to drive that cost down.

Mr. SESTAK. I will ask you a question. I guess that my overarching question is the Navy has been able to afford $12 billion to $14 billion per year for Navy shipbuilding, but you came forward last year and said we now need $20 billion, which is I guess about an 80 percent or so increase.

With 50 percent confidence factors coming forward and less on other types of vessels, what kind of confidence do you have that if we almost double your procurement budget, that is going to get us—I mean how are you going to afford all this?

I mean what is the confidence of having come forward last year and told us that your procurement budget has to leap from $12 billion, $20 billion or $22 billion, and yet we are kind of getting confidence factors of 50 percent or less when you come forward?

How comfortable are you with that $22 billion?

Admiral GUILLORY. Sir, the question you ask certainly goes beyond the information I am prepared to provide a response to. And I think we will take that for the record and get back to you on that.

But if I may say that, the confidence factor also reflects the maturity of the program, too.

And if you look at the Arleigh Burke-class and the—you know as we are still in building 1/08 it is coming down. The building wait is now—the confidence factor in funding that ship is certainly different than the confidence factor of funding an LCS, and that is pretty understandable.

So it is a combination of statistics and numbers, but it is also a confidence factor based upon the maturity, and also the priorities of across the shipbuilding portfolio.

And ideally, certainly as a resource sponsor, I would be very grateful if all my ships were funded to the 80 percent level or some higher percentage. However, I do recognize that that is——

Mr. SESTAK. Excuse me. I wasn't talking about funding at that level. I was just asking should you come to Congress and let us know that when we buy the new aircraft carrier, it is only at a 35 percent confidence factor. That was my only question, not to what funding.

Let me then bring it back to LCS, one final question. What is the status of the Navy's stated intentions in the July 2007 testimony to move to a common combat system for LCS? I may have missed that in the——

Admiral LANDAY. No, sir. We continue to look across the board at opportunities to go common across the two sea frames. We did in fiscal year 2007 do an initial study on a common combat system. The look at the time, based on the assumptions that we used in that study, was about a wash.

The savings that you would get lifecycle from a training infrastructure perspective were offset by the impacts from a nonrecurring engineering of making changes to the ships.

We currently have a second study that we have just started, as the Navy has gone to its objective architecture, which should give

us more flexibility. We are going back and taking another look at that.

So we are continuing to look at those opportunities, but unless we see there to be a significant trade-off, we right now don't have anything in place on the fiscal year 2009 or 2010 ships to go to that.

However, I would say in our fiscal year 2010 contract, one of the things we have asked shipyards to give us, in addition to the price for a ship, is also to break that price down and give us options to buy essentially a core sea frame without a combat system, the cost of buying a combat system, and then the cost of buying a combat systems equipment in there as a——

Mr. SESTAK. So you may or may not go to a common combat system. Is that what I should take up?

Admiral LANDAY. Well, in fiscal year 2009 or 2010, I do not expect——

Mr. SESTAK. But then perhaps maybe later.

Admiral LANDAY. We are looking at it. And it all depends on what the business case will play out.

Mr. SESTAK. Thank you.

My question—I didn't mean to ask the question that you really weren't here for testimony. I guess the reason I asked it is that I have been quite struck by the demands of the Nation for accountability and clarity of the mortgage security issues on Wall Street.

I wonder if we ourselves in the Defense Department here in Congress might want to have more of that transparency upfront on how confident are we about this mortgage we are actually taking out on our future for our children. How good is that price you know in a sense, that you come forward with all the time?

And I was quite struck by the GAO study, although I was cognizant of it in a prior life, of how good these confidence factors are, because we tend to sometimes berate people for coming forward and telling us it is going to cost more, but maybe for you upfront that LCS would come in for less than 50 percent confidence factor, we might approach it differently.

But thanks for your comments.

Admiral LANDAY. Yes, sir.

Mr. TAYLOR. The chair thanks the gentleman.

The chair now recognizes the gentleman, the ranking member from Missouri, Mr. Akin.

Mr. AKIN. Thank you, Mr. Chairman.

I just have a couple of quick questions. First of all, is this ship mostly viewed as a Navy ship in terms of its use, or does the Marine Corps have a sense that this is something that they would be using as well?

Admiral GUILLORY. This is a Navy ship, and with its payload capacity, it is certainly—there are opportunities perhaps to bring Marines aboard and execute missions, but right now it is essentially a Navy ship. Yes, sir.

Mr. AKIN. I understand that all the ships are Navy ships, but I just got to think that there has got to be a difference. Some of them are specifically designed for the Marine Corps. This is not specifically designed for Marine Corps use. Is that right?

Admiral GUILLORY. No sir.

Mr. AKIN. Okay. So there may be some cross applicability. You might be able to put some Marines on board, but it is being used as a Navy platform for naval use, as opposed to Marine use. Is that correct?

Admiral GUILLORY. Yes, sir. That is correct.

Mr. AKIN. Okay.

Second thing. I think I heard in terms of these different missions packages, I thought what I heard you saying was that these things will be ready to plug in, and they will be fully integrated when we take acceptance of the ship. Is that correct, or did I misunderstand?

Ms. SANDEL. If I may, yes, sir, it is at varying levels of technical maturity. As the program was originally envisioned and laid out, there was a spiraled development of the mission packages themselves.

So the systems that comprise those mission packages many times were developmental items or engineering design models or a low rate initial production, so we have always understood that we took the design as it was in progress, and it was being tested and developed, and then ultimately going to be fielded.

So when we get to the point that we have the mission package for the mine countermeasure system, for instance, it will have the systems embedded in it that have been designed to interface standard. It will have the supporting equipment, and it will be ready for testing on the sea frame and in accordance with the sea frame schedule.

However, the interesting part is, like we have talked about controlling costs on the contract, this is also one aspect, that this is unusual. We have the ability to test the very detailed level of testing on these mission systems, which are individual programs of record, prior to their being incorporated into the mission package.

So each program is walking through its testing regime as it comes to the sea frame. So we have gotten a delivery of an asset that has been fully tested, understood to perform, then is integrated into the package and delivered for the end-to-end testing to make sure the interfaces are all available and forming.

Mr. AKIN. I thought I heard sort of a yes and a kind of yes and a kind of no answer, I think.

What I am hearing you say is, yes, the mission packages will be available and integrated, and they can be plugged into the ship, but they are in a state of spiral development, which means that they may or may not work or may be changed significantly over a period of time. Is that correct?

Ms. SANDEL. I would state that slightly differently. Yes to your first part. Second, they will work, because we will not deliver a component or mission system to the package for end-to-end testing that wasn't performing.

Mr. AKIN. How many different separate mission packages are there total?

Ms. SANDEL. In individuals, we have the mine countermeasure mission package, the surface warfare mission package, and the anti-submarine mission package. They are comprised of individual numbers and quantities, depending on the requirements and the sponsor.

Those are comprised of 8 to 10 systems in each area, so you have a complexity level where you are delivering systems to be integrated to be tested in a mission package.

So you are going to have technical development as you move forward and——

Mr. AKIN. So there are three missions packages at this point, totally?

Ms. SANDEL. Yes, sir.

Mr. AKIN. Okay.

I come back to the first question I asked the beginning of the hearing, and I felt like I got a kind of maybe, sort of answer.

My question is, is there one person who is being measured and held accountable for the delivery or, from the Navy point of view, who is in charge of this program, makes all the decisions and can say, "Yes, I understand you want to do this, this and this. We have looked at it all, and this is my decision. This is what we are going to do, and this is how we are going to move forward."

Is there any one person in charge? I understand the idea of the team concept of leadership. I understand it is good to get a lot of input from different people. I understand breaking a project into component parts.

But ultimately somebody has got to be held accountable, and somebody has to make the decisions. Is there one person who this is their baby, and they are held accountable for it in the Navy?

Admiral LANDAY. Yes, sir. The acquisition——

Mr. AKIN. What is his name, and what position is it?

Admiral LANDAY. Captain Jim Murdock, sitting behind me, who is the acquisition program manager at this point, is the person responsible for delivering the LCS program.

Now, Captain Murdock does not have the authority, for example, to change requirements of the program. Captain Murdock does not have the authority, nor do I, to change the missions of the program.

His job is, as we build the ship as it has currently been laid out by OPNAV folks to those requirements, and if we cannot do that, then we will go back to the OPNAV folks and explain to them what the issues are, and then that will be keyed up.

But in terms of do their bring the ship to the capabilities that have been given to us by the CNO, the program manager is the one person responsible for the ship.

Mr. AKIN. So can the mission requirements or parameters or specifications on the ship be changed?

Admiral LANDAY. Yes, but not by Captain Murdock. Captain Murdock would go back to Admiral Guillory, and collectively we would go to the senior Navy leadership and say, "The cost of this requirement to get there is far more than we expected. There is an impact." And we would have that discussion with them.

This is part of the process that has changed as a result of early LCS lessons learned.

Mr. AKIN. Who is it who is—so there is no one further up the line, then, that basically is in charge, that could basically make that decision. It is all a group decision whether or not you are going to change a requirement of this or that. Is that right?

Admiral GUILLORY. No, sir. For general requirements generation, I am responsible for staffing back and taking it forward to the chief of Naval operations——

Mr. AKIN. Right.

Admiral GUILLORY [continuing]. Admiral Roughead.

Admiral Roughead is authorized to approve key attributes for the ship. Key performance parameters are approved by the Joint Requirements Oversight Council (JROC), the Joint Staff, the chairman of Joint Chiefs of Staff, and of which the ship has 10 key performance parameters.

It has 37 key attributes. Attributes include launch and recovery of aircraft, what type of sea state that the ship ought to be able to do that in. Those are the authority of the chief of naval operations to approve or to change.

Mr. AKIN. I guess what I am getting at is I don't understand your organizational structure that well. Maybe it is all just crystal clear to you who is responsible for what, but from my point of view, when I look at the big picture, this thing looks like the rudder has been shot out of it, and it is just drifting all over the place as a program.

And it seems like, because of the fact that you start with one number and one set of parameters and you change it, and it doubles the cost of the ship.

And then now we have got these two different ships, and it is not quite clear which one you are going to buy, and yet you still want to build more both of them. It just seems to me like the whole thing is wandering some.

And it seems to me that there should be one person, who ultimately has got to have to make those decisions and have a game plan and start moving forward with it.

And what you are telling me is well, it is sort of yes and sort of no. And I understand there needs to be input, but somebody's got to be in charge of it. And it seems to me like it is drifting.

Maybe I am mistaken, but at least the data seems to suggest there is a lot of changes that have been moving through this program, which have been very expensive.

I will let you respond.

Admiral LANDAY. Well, I would say on the acquisition side, clearly—and we have identified that up front—there have been some changes to this program, which drove costs.

One of the outcomes of that is, as we went back and looked at our process and we said as these changes were coming into the program, how did senior Navy leadership understand and were informed and had the ability to influence and make decisions on those changes?

Before, our process was probably not as clean, so the secretary has put in a what I call six-gate two-bat pass process to where now we periodically on the acquisition side will go back to the larger organization, which includes the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN (RD&A)), the U.S. Secretary of the Navy (SECNAV) acquisition representative and the CNO staff, or the commandant if it affects the Marine Corps, and we walk them through that.

So you know Mr. Sestak's comment about confidence. We would have those discussions with them. If we come in and sat now and say, "The cost of this ship is growing, because we can't figure out how to get through a certain requirement," instead of just continuing to grow the cost, we now have a mechanism, a better mechanism to go back and have that discussion with Admiral Guillory and the OPNAV.

But in the end there is two pieces of it. There is a requirements levied by the operational side, the CNO. The acquisition community under ASN (RD&A) is responsible for executing that. And together at that point, CNO, SecNav, ASN (RD&A) as a staff is where those two pieces come together.

So if there is a requirements trade, the CNO has to be part of that. If there is an acquisition implication of that, then the acquisition side of it. So it is the way that the process is set up to work.

Mr. AKIN. Thank you very much.

Mr. TAYLOR. I guess I will open this up to the panel. Will the second LCS be delivered with a functional combat system?

Admiral LANDAY. Yes, sir. It is our goal right now that we would deliver that ship to meet with all the capabilities that it needs. As you know, we——

Mr. TAYLOR. Do you have the time set for that, Admiral?

Admiral LANDAY. We are looking for delivery in the September timeframe.

Mr. TAYLOR. So by September it is going to have a functional combat system.

Admiral LANDAY. Yes, sir.

Mr. TAYLOR. Admiral, several of us have touched on it, but I am going to give you an analogy that I continue to be troubled with.

I guess all of us at one time or another have hired someone to paint our house. Sometimes you do it by the job, or if you trust the person, you do by the hour.

I am getting the impression we hired someone to paint our house on a fairly trust—you know I trust you, he trusts me. But I come to my house, and he is using a one-inch brush, and I am paying him by the hour.

I think it is every bit my right to say, "You know what? You are not trying to save me any money. You are trying to drag this out." That is the impression I get with both of these builders.

And I have seen—again, I want to give you this opportunity while we still have time, to tell me what they are doing—not building additional buildings to get people out of the weather, but what are they doing to automate their processes, because we know a huge portion of the cost of this vessel is the welds—in addition to the metal, the welds. And there are a heck of a lot of welds on that Trimaran.

So what steps, concrete steps, are being taken to automate that process, because I will use the analogy. The subcommittee visited the Hyundai yard about two years ago. It was fortunate to spend about four hours in that yard.

In the four hours I was there, I saw them doing everything from making propellers on-site, shafts on-site, bearings on-site, making the engine on-site. And every Saturday, another hull was launched.

The four hours I was there, I never heard a grinder, which meant that every well was being cut perfectly, so someone didn't have to go back and fix it. Every cut of the metal was being done perfectly, so someone didn't have to go back and fix it.

When I visit Austal, when I visit Marinette, I hear a lot of grinders. I hear a lot of mistakes getting fixed by somebody doing manual labor to undo it.

So what is being done, and particularly who in your organization is walking through there, knowing that we are basically their only customer and saying, "You know what? There is a better way to do this, and we expect you to do that."

Who is doing that?

Admiral LANDAY. I would tell you that the key—the overall program team is doing that combination of our supervisor of shipbuilding, who is our lead waterfront technical representative in the program office.

So we have lots of discussions with the companies. We, for example, just recently put together a team about 2 months ago that was program folks, shipyard folks, and outside shipbuilding experts to walk stem to stern both of those ships with the companies and look for opportunities where we would propose back to them and say, "There should be a better way to do this. You are welding too much pipe. You need to start bending pipe. You are doing too much effort in here."

And so there is a very aggressive effort to—with them—I mean they are a part of this—to look for those opportunities.

We have seen in what has been proposed to us in the fiscal year 2009 program. We have seen where they have also proposed production efficiencies.

We have seen where the companies have told us under some of their company award or in capital expenditure (CAPEX), if we go down that path, additional equipment that they would buy, be it pipe bending machines or other things to improve their process.

The Austal facility that I mentioned to you, that modular manufacturing facility, is not just a building. It is to take that facility and walk down similar lines that you saw before in the Hyundai plant that you talked about, about getting us into a more logical, leaned out manufacturing process.

There are always going to be additional things we can do, but the first step of this that we thought was particularly critical, and we see both companies doing, is looking to improve the lean processes they have in place to make this more modular, to get the production inefficiencies out of their process.

And then from there, if there are additional investments that they need to make in terms of infrastructure machines, the companies have both indicated plans where they would go forward and do that.

But from the Austal, you know what you saw in that one shed it is exactly those processes that we see the company working very hard to improve and the result of why they went to this modular manufacturing facility.

Mr. TAYLOR. Okay, for the record it is my understanding that the materials for LCS–3 and LCS–4 have already been purchased, so

we are not really going to get any savings as a result of the price of commodities going down.

But for the record, should we want to continue with these programs, I would like to know the difference between what we paid for the first two ships—that is for each—and what it would cost if we bought those materials today.

For the record, I would like to know what percentage of each of those vessels was welded by hand, what percentage was done by machine, and what is your target for vessels 3 and 4 and vessels 5 and 6.

Admiral LANDAY. Yes, sir.

Mr. TAYLOR. Okay. When should I expect those answers, Admiral?

Admiral LANDAY. We should be able to get you percentages of ships of 1 and 2, I would say by today; 3 and 4 and 5 and 6 I just need to go back and you know take a look through the contract. I would say by the end of the week I should be able to tell you what those are.

[The information referred to was communicated verbally and is not available for print.]

Mr. TAYLOR. Okay. Thank you, sir.

Mr. Akin.

Again, we want to thank our witnesses. In fairness to the workers at Marinette, I do want to say that I had the opportunity to visit LCS–1 in Norfolk. The commanding officer of the ship was ecstatic with its performance. And I think in fairness to those workers, they should know that.

In fairness to the taxpayers, it was 18 months late and over twice over budget. It is the latter that we need to improve, and it is the latter that I hope the Navy is focused on improving.

But I want to thank our witnesses for being with us.

This hearing is adjourned.

[Whereupon, at 12:05 p.m., the subcommittee was adjourned.]

A P P E N D I X

March 10, 2009

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MARCH 10, 2009

Opening Statement of Congressman Gene Taylor

Chairman, Subcommittee on Seapower and Expeditionary Forces

Oversight Hearing on the Littoral Combat Ship Program

March 10, 2009

The hearing will come to order.

Good morning and welcome. Today the subcommittee meets in open session to receive testimony on the Littoral Combat Ship Program. Our witnesses today are RADM Vic Guillory, Director of Surface Ship Programs for the Chief of Naval Operations, RADM Bill Landay, the Program Executive Officer for Surface Ship Construction, and Ms. Anne Sandel, the Program Executive Officer for Littoral and Mine Warfare. I thank the witnesses for taking the time to be with us today.

To call this program troubled would be an understatement. The fact of the matter is this program has so far delivered one ship. Just one ship. When I look at the plan from just two years ago, we should by now have at least four ships delivered, three more nearing completion from a fiscal year 2008 authorization, six under contract from a fiscal year 2009 authorization, and today we should be discussing the authorization of six more ships for fiscal year 2010. That would be a total of 19 ships. So

instead of having 13 delivered or under contract with another 6 in this year's budget we have one ship delivered that will likely tip the scales north of two and a half times the original estimate and one ship that might finish this summer, with similar if not higher cost growth. The Navy cancelled two previously authorized ships, no ships were placed under contract for fiscal year 2008 and no contract award has been made for the two ships authorized for fiscal year 2009. And all this is from the program that was hailed as a poster child for its "transformational" and "affordable" acquisition strategy. It seems all the program has accomplished is "transforming" a realistic goal of achieving a 313 ship fleet to an unrealistic goal.

This program is not just a lesson of over-optimism, poor management, and a lack of proper oversight. Even though all those things occurred in spades, the fundamental lesson is flawed strategic planning. Flawed in the belief that the government can pass on to industry decisions that are inherently governmental; flawed in the belief that untested and unproven concepts, such as reconfigurable mission modules, can be incorporated

into an acquisition program without testing and verifying the concept on surrogate platforms; and finally flawed due to the absence of a "plan B" for needed capability in the Fleet.

I believe it is the lack of "plan B" which has wedded the Navy so completely to this program. Particularly in the area of mine warfare, the LCS is the only future they see. Dropping the LCS program to develop another mine warfare platform is viewed as unacceptable in schedule. And they might just be correct.

But because the Navy is stuck with continuing the LCS program does not mean that the current strategy for buying these ships has to continue. I have nothing against either of the lead contractors, but I know this; they both contracted to build a ship for $220 million dollars and they did not even come close. I understand the Navy was guilty of changing the design specifications with the implementation of Naval Vessel Rules but I fail to see how that resulted in more than doubling the price and slipping 18 months of schedule. I am also concerned that the Navy has

not been able to come to terms with the contractors for the ships authorized last year.

It appears to me the solution is simple. Bring true competition into this program, not the pseudo competition we currently have between the two variants of ships but true competition based on price, schedule, and quality. I have been asking for over two years if the government owns the rights to the design drawings of the ships so they can bid them out directly to any shipyard with the capability of constructing the vessels. The answer seems to be yes and no. I understand that the prepared witness testimony address this question, however I would like the witnesses today, on the record, to explain that position and answer in layman's terms, not the language of the professional acquisition executive, the exact claim the government has on the technical design rights to both the seaframe and the combat system. I would then like the witnesses to explain how long it would take, what organization would be responsible, and how much it would cost to develop the "technical data package" described in the prepared statement that is required to bid the

ships directly to other shipyards, or the current shipyards divorced of the lead contractors. Ranges of cost and time are acceptable, what is not acceptable is taking the question for the record.

But so far I have discussed just the ship, just what the Navy refers to as the "seaframe". Today's hearing for the first time brings in the official responsible for the mission packages that are purported to give this vessel multi-mission capability. And although at least one of each type of mission modules has been developed I am very concerned that major components of the overall "mission package" are still under development or have not been thoroughly tested. Therefore I would request that Ms. Sandel update the subcommittee on the remaining development and testing for all of the mission packages. I would also like to know if any existing Navy platforms can operate with an LCS mission module as a stop-gap capability filler until sufficient LCS ships are constructed.

Everyone should understand that the current situation of these vessels costing in excess of a half billion dollars cannot continue. There are too

many other needs and too little resources to pour money into the program that was designed to be affordable. I would also caution that, particularly right now, you don't want to be the program that is breaking the bank. From what I read in the newspapers there are no "protected programs" in the ongoing debate on affordability.

Of course, none of the witnesses sitting in front of us today was responsible for the program when it began. They have inherited a mess and are doing their best to fix what they can. I appreciate that. But now is the time for frank talk on what needs to be done. We need the best price and the best quality we can get for these vessels whether with the current lead contractors after they finally get the message or changing course and bidding directly to shipyards.

Before I ask the Ranking Member for his remarks I would like to remind the subcommittee that competition sensitive information such as current estimates of prices are protected by statute. However, the Navy has agreed to answer these types of questions directly to individual Members

in the appropriate forum and under the conditions agreed to by the Navy General Counsel and the Committee.

I now call on my friend from Missouri for any remarks he may wish to make.

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THE HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON SEAPOWER AND
EXPEDITIONARY FORCES

STATEMENT OF

RADM VICTOR GUILLORY, U.S. NAVY
DIRECTOR OF SURFACE WARFARE

AND

RADM WILLIAM E. LANDAY, III
PROGRAM EXECUTIVE OFFICER SHIPS

AND

MS. E. ANNE SANDEL
PROGRAM EXECUTIVE OFFICER LITTORAL AND MINE WARFARE

BEFORE THE

SUBCOMMITTEE ON SEAPOWER AND EXPEDITIONARY FORCES

OF THE

HOUSE ARMED SERVICES COMMITTEE ON

THE CURRENT STATUS OF THE LITTORAL COMBAT SHIP PROGRAM

MARCH 10, 2009

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

INTRODUCTION / REQUIREMENT

Mr. Chairman, distinguished members of the Subcommittee, thank you for the opportunity to appear before you today to address the Navy's Littoral Combat Ship (LCS) program. We thank the Committee for its continued support and active interest in Navy shipbuilding programs.

The Navy remains committed to the LCS program. LCS fills warfighting gaps in support of maintaining dominance in the littorals and strategic choke points around the world. The Navy remains committed to procuring 55 LCSs, and is aggressively pursuing cost reduction measures to ensure delivery of future ships on a schedule that affordably paces evolving threats. This will be accomplished by matching required capabilities, to a recurring review of warfighting requirements through applying lessons learned from the construction and test and evaluation periods of seaframes and mission packages.

The LCS program is structured in flights of seaframes and spirals of mission packages. This allows the relatively rapid change in technologies and threats associated with the modular mission packages to be continuously improved through incremental upgrades without major design impacts to seaframes. The result is a program that minimizes the risks of a highly interdependent system of systems by decoupling seaframe procurement from mission package procurement. This allows continuous cost efficient delivery of state-of-the-art capability to the warfighter via new mission package upgrades.

The LCS program capabilities address specific and validated capability gaps in Mine Countermeasures (MCM), Surface Warfare (SUW) and Anti-Submarine Warfare (ASW). The Concept of Operations and design specifications for LCS were developed to meet these gaps with focused mission packages that deploy manned and unmanned vehicles to execute a variety of missions. LCS's inherent characteristics (speed, agility, shallow draft, payload capacity, reconfigurable mission spaces, air/water craft capabilities) combined with its core Command, Control, Communications, Computers and Intelligence (C4I), sensors, and weapons systems, make it an ideal platform for hosting additional Maritime Strategy mission areas, such as Irregular Warfare and Maritime Security Operations.

The Navy, as part of its annual review of its shipbuilding program, expects there will be sufficient force structure with our existing frigates and mine warfare ships until LCS delivers in quantity to meet overarching deployment requirements.

Legacy mine warfare ships and frigates are planned to be phased out gradually. These decommissionings will be balanced with LCS mission package and seaframe deliveries to mitigate warfare risks.

LCS 1, USS FREEDOM, was delivered to the Fleet on September 18, 2008 — six years and one day after the program was established. LCS 2, the future USS INDEPENDENCE, was christened in Mobile, AL, on October 4, 2008. Later this year the program will have delivered a second ship of a completely different design.

While the initial cost and schedule objectives for the program were overaggressive, they did provide the tension and urgency for these achievements. Although the concurrent design and

construction of LCS revealed challenges for meeting the original cost and schedule objectives, the Navy will apply lessons learned to this program as well as other shipbuilding programs.

At the Subcommittee's request, the Navy is pleased today to discuss an overview of the history of the LCS program, the current status of LCS 1 and LCS 2, and the future acquisition strategy for the LCS program.

BACKGROUND

The LCS acquisition strategy, approved in May 2004, was based on the tenets of modular and open system architecture, Cost-As-an-Independent-Variable design process, a rapid construction cycle and continuous competition at all levels of the program. The Navy awarded contracts for construction of the first four LCS seaframes, with Lockheed Martin (LM) and General Dynamics (GD) awarded two ships each. Fabrication of LCS 1, the first LM ship, began in February 2005 and the ships delivered in September 2008. Fabrication on LCS 2 , the first GD ship, began in November 2005 and this ship will deliver this year. LCS 3 and 4 options were exercised in June and December 2006, respectively.

Cost growth on both variants resulted in a detailed assessment of program cost and structure. The Navy sought to restructure the contracts for LCS 3 and 4 to fixed-price incentive terms to more equitably balance cost and risk, but could not come to terms and conditions that were acceptable to both parties. On April 12, 2007, the Navy terminated construction of LCS 3 for convenience under the Termination clause of the contract. On November 1, 2007, the Navy terminated construction of LCS 4 for convenience under the Termination clause of the contract. Based on program restructuring, the Navy requested and received congressional approval to reprogram FY 2007 shipbuilding appropriations to fund cost increases on LCS 1 and 2.

At the direction of Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN(RDA)), the LCS program underwent a thorough independent assessment to review the cause of the cost growth and evaluate the way forward.

The results of that assessment identified a number of factors key to the program's poor performance. The Navy has actively addressed those key findings in the program as it operates today:

- The design for both ships is mature and we are incorporating revisions to specific areas based on the lessons learned from the construction of the initial ships, proposed production improvements, acceptance inspections and the early stages of the post delivery testing period. Those revisions will be in place for the start of construction of the FY 2009 ships.

- The Navy has increased the staff assigned in the program office and at the shipyards to monitor performance. The program office staff has grown from eight to 20 civilian personnel, focusing on critical production, acquisition, and financial management specialties. An additional 12 billets have been assigned as the two lead ships complete delivery and post delivery milestones this year and more ships are placed under contract.

Military staff has increased from three to five assigned. Officers with new ship construction experience were assigned to the program manager and production manager positions.

- The Supervisors of Shipbuilding doubled the staff at each LCS shipbuilder. Focusing resources to the waterfront, the program office works closely with the Supervisors to sustain a daily drumbeat in monitoring production progress on these lead ships, identifying and monitoring key metrics that maintain progress to key events.

- To improve technical decision making and reduce the time to resolve technical issues, especially as related to the application of Naval Vessel Rules, the program office and the Naval Sea Systems Command Chief Engineer have placed senior managers and technical authorities on the waterfront.

- New performance baselines were implemented for each contract to help monitor and control cost, with contracting incentive structures to support improved progress. We continue to work closely with the industry teams to improve their performance and Earned Value Management System measurement and reporting capabilities.

- The FY 2009 and FY 2010 contracts will be fixed-price contracts to ensure cost and schedule adherence remain a primary focus of both the industry and the government program teams.

AFFORDABILITY

The Navy has implemented a comprehensive cost-reduction program for LCS. Taking advantage of lessons from other shipbuilding programs' affordability initiatives such as the DDG 51 value engineering program, the T-AKE "take cost" program and the Virginia-class cost-reduction initiative, this ongoing effort seeks to reduce acquisition cost and total ownership cost through continuous assessment of operational and technical requirements, improvement of production processes, and implementation of acquisition strategies that will lead to stable production and improved purchasing leverage. Examples of areas under review by this program include:

- A joint team of industry, government and independent experts have conducted a "stem-to-stern" inspection of each ship to identify areas of inefficiency or where alternative production methods can improve production efficiencies.

- The Navy implemented a Total Ownership Cost (TOC) reduction review jointly overseen by the ASN(RDA) and Vice Chief Naval Operations to look for improvements in total lifecycle costs.

- The Navy has initiated a second study to look at the Total Ownership Cost return on investment of a common combat system. The initial study conducted in 2007 did not support a payback sufficient to support the upfront integration and additional

procurement costs. The Navy's development of its objective architecture for combat systems provided a different set of assumptions to be considered for this new study.

- Finally, infrastructure improvements are either under review or in progress at both yards that will improve production efficiencies and reduce costs.

CURRENT STATUS OF LCS 1 AND LCS 2

USS FREEDOM (LCS 1)

USS FREEDOM was built by the Lockheed Martin-led team at the Marinette Marine shipyard in Marinette, WI, and was commissioned on November 8, 2008. Due to restrictions on some testing in the Great Lakes, acceptance testing was broken into two phases. Acceptance Trial 1 (AT) evaluated the ship, propulsion, navigation and some communications. Acceptance Trial 2 will evaluate the remaining communications and most of the combat systems. In August 2008, the Navy's Board of Inspection and Survey (INSURV) conducted Acceptance Trial 1 on LCS 1 and found the ship to be "capable, well-built, and inspection-ready," and recommended that the Chief of Naval Operations authorize delivery of the ship following the correction or waiver of cited material deficiencies, a standard practice in Navy shipbuilding.

During inspection, INSURV identified 21 "starred" deficiencies onboard LCS 1. This is a relatively low number and compares favorably to other first-of-class ships. The Navy developed a plan to address these deficiencies in a timely, prioritized sequence – 12 were closed prior to delivery, five more will be closed during the ship's current Industrial Post Delivery Availability, and the final four will be closed during Post Shakedown Availability (PSA) in FY 2010.

After acceptance, the crew conducted a vigorous shakedown of the ship during her transit from the building yard to Norfolk, VA. Encountering adverse weather and numerous instances of challenging ship handling evolutions, the crew reported the ship performed superbly during the 2,400 mile journey. LCS 1 will undergo AT 2 and additional test and trials period intended to complete certifications and mission package integration testing.

INDEPENDENCE (LCS 2)

INDEPENDENCE is being built by the General Dynamics team at the Austal USA shipyard in Mobile, AL. She was christened on October 4, 2008, and is expected to deliver in 2009, with Initial Builder's Trials and Acceptance Trials to complete prior to ship delivery. Following delivery and commissioning, LCS 2 will transit to Norfolk, VA, and conduct a post delivery test and trials period similar to FREEDOM.

Facing similar lead ship challenges on INDEPENDENCE, Navy leadership directed General Dynamics to take a phased approach to completing the ship. The initial phase prioritized efforts on that scope of work required to safely take INDEPENDENCE to sea, demonstrating propulsion and additional systems and components necessary for communications and safe navigation. Based on performance to this goal, a second phase of work would be authorized focusing on only those core combat systems necessary to demonstrate a basic detect-to-engage capability required

during an acceptance trial. The third phase is the remaining systems and components required to demonstrate complete combat systems and communications capabilities of the complete sea frame. At this time, the program manager has authorized phase 1 and 2 work. Phase 3 remains contingent on performance of the first two phases. It is still the program manager's intention to present a complete ship to INSURV at acceptance trial.

The Navy monitors progress through daily assessments, weekly analysis of key metrics on production and test progress, and conducts monthly progress and cost reviews with the contractor to ensure that corrective actions are implemented and effective. As of February 2009, all four of the ship's generators have been started and vital shipboard electrical systems have completed initial testing, aligning with current schedule projections for ship delivery. The program expects to achieve main propulsion engines light-off in April and May, with a goal of Builder's Trials in late June. The program is prudently managing resources to be able to address any potential challenges.

Status of Mission Package Procurement

The modular open system architecture used for the LCS design allows independent development of seaframes and mission packages that integrate across a controlled interface specification to ensure complete interoperability. This allows the relatively rapid change in technologies associated with the modular mission packages (MPs) to be continuously improved through incremental upgrades without major design impacts to seaframes. The result is a program that minimizes the risks of a highly interdependent system of systems by decoupling seaframe procurement from mission package procurement, and allows continous cost efficient delivery of state-of-the-art capability to the warfighter via new misison package upgrades.

The underlying strength of the LCS lies in its innovative design approach, applying modularity for operational flexibility. Fundamental to this approach is the capability to rapidly install interchangeable mission packages into the seaframe. The ability to modify the LCS physical configuration with different MPs in less than a 96-hour period gives the operational commander a uniquely flexible response to changing theater warfighting requirements. This also allows the LCS warfighting capability to quickly adapt to evolving threats, using improved technology. To achieve this flexibility, the Navy is developing and procuring specific numbers of MPs to meet the Fleet's warfighting requirements. A mission package consists of mission systems which are integrated to form mission modules, Sailors organized into mission module and aviation crew detachments and supporting aircraft. Each mission package provides warfighting capability for one of three focused mission areas:

- Mine Countermeasures (MCM)
- Surface Warfare (SUW)
- Anti-Submarine Warfare (ASW)

The first SUW and ASW mission packages were rolled out in FY 2008 and joined the first MCM mission package, which was delivered in FY 2007. Land-based and at-sea testing of mission package components began in FY 2008 and continues in FY 2009. Through an Integrated Test and Evaluation framework, the LCS Mission Modules program office is working very closely with the responsible mission systems program offices in Naval Sea Systems Command, Naval Air Systems Command and the Army to ensure that all Mission System Program of Record, as

well as LCS shipboard testing events, demonstrates required warfighting effectiveness and suitability. Formal LCS sea frame testing of mission packages commences in FY 2009 and continues through FY 2012.

The LCS Mission Modules program office has adopted an open business model that leverages Participating Acquisition Resource Managers' (PARMs) developmental efforts for both program-of-record and non-program-of-record systems and components. This process minimizes LCS Mission Modules program investments of research and development dollars required to mature unique technologies. In addition, the process allows for package procurement flexibility by limiting integration of immature technologies/systems. This is done by continuous evaluation of system maturity through a disciplined system engineering framework. Through this open business model, the LCS Mission Modules program procures mature mission systems from PARMs and then engages an industry partner for Package Production and Assembly (PP&A) of mission packages.

FUTURE ACQUISITION STRATEGY FOR THE LCS PROGRAM

LCS Acquisition Strategy

In October 2008, the Undersecretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) approved a revised acquisition strategy for LCS to cover procurement of the FY 2009 and FY 2010 ships. The updated acquisition strategy combines the FY 2009 procurement and FY 2010 options in order to maximize competitive pressure on pricing as a key element of cost control. Increasing the quantity solicited by adding the FY 2010 ships to the FY 2009 solicitation as options will also enable industry to better establish longer term supplier relationships and offer the potential for discounting to the prime contractors and subcontractors. FY 2010 ship options will be a competition for quantity.

Acquisition strategies for FY 2011 and outyear ships are under development. The Navy's strategy will be guided by cost and performance of the respective designs, as well as options for sustaining competition throughout the life of the program. Evaluations of combat systems and hull, mechanical and electrical (HM&E) performance will be conducted throughout those tests and trial periods and, as was mentioned earlier, we are already looking for opportunities to reduce total ownership costs through commonality, reductions or consolidations based on return-on-investment analysis.

FY 2009 and FY 2010 Contract Awards

As a result of congressional direction contained in the FY 2009 Defense Appropriations Act, the Navy amended the LCS seaframe construction solicitation to delete the FY 2008 ship. This amended solicitation continues the competition between the two incumbent industry teams. The Navy may award one ship to each industry team in FY 2009 and intends to hold a competition for the FY 2010 option ships soon after award of the FY 2009 contracts. Affordability remains a key tenet of the LCS program as the Navy works with industry to provide this capability for the lowest cost.

The FY 2009 and FY 2010 awards will be fixed-price incentive contracts, with the Navy anticipating that each LCS prime contractor receives one ship in FY 2009. The Navy remains committed to effective cost control and has modified contracting strategies and management practices to provide program stability. The FY 2009 and FY 2010 ships will be designated as Flight 0+ and will include only existing approved engineering changes along with improvements to construction or fabrication procedures. The Navy will incorporate further lessons learned from LCS 1 and 2 sea trials into the FY 2009 and FY 2010 ships prior to production. Any such changes will be limited to those essential for safety, operability or affordability. Furthermore, the RFP requests that the proposals for the FY 2010 option ships include alternative prices for both a full-up ship and separately priced contract line item numbers (CLINs) for a core seaframe (only systems for safe operation at sea), core combat system and individual combat systems and equipments (such as the gun or radar). This allows us the opportunity to manage the integration of the combat systems separately if that proved to be more affordable.

In the interim prior to FY 2009 contract awards, both industry teams were authorized and funded to pursue limited design and construction efforts while source selection proceeded. The scope of these efforts was carefully coordinated with prime contractors with an eye on preserving critical shipbuilding skills or to improve production process engineering. Once the FY 2009 ships are awarded, these sustaining efforts will be subsumed in the shipbuilding contracts.

Mission Modules Acquisition Strategy

At the time of its inception in FY 2004, the Mission Modules program office decided to utilize government labs to build the first two of each type of mission package. The Navy Labs (Naval Surface Warfare Center Panama City (NSWC PC), Naval Undersea Warfare Center Newport (NUWC NPT), SPAWAR Systems Center San Diego (SSC SD) and Naval Surface Warfare Center Dahlgren (NSWC DD)) are developing, integrating, testing and delivering the first six mission packages. This approach was implemented to ensure responsiveness to refined requirements and reduce the financial risk to the Navy associated with cost-type contracts for this unique concept. This strategy has been very advantageous to the Mission Modules program. Once these initial mission packages are completed by the warfare centers, the package production and assembly will transition to Northrop Grumman.

Following a competitive solicitation, Northrop Grumman was awarded a contract in January 2006 to provide a range of package production and assembly functions specified by the Navy. The contract contains Award Fee/Award Term provisions covering a term of up to ten years, with contract options exercised annually. Awarding the options is contingent on continued excellent contractor performance in preceding years, and is assessed annually.

As Northrop Grumman steps into a production and assembly role, the Navy labs will transition into the Technical Direction Agent and In-Service Engineering Agent role. This transition began in 2008 with the transfer of the Technical Data Packages from the Navy labs to Northrop Grumman in 2008 and continues in 2009.

Rights in Technical Data and Computer Software

It is the Navy's legal and contractual position that the Navy has Government Purpose Rights (GPR) to the seaframe designs of both LCS variants and, as such, can solicit full and open competition for either seaframe design after an adequate design package for such a competition is developed.

For clarity, those rights are as follows:

- Seaframe – The government has GPR to the design of both seaframes. We did not seek the rights to the individual equipments in the seaframe (for example we do not have GPR to the Rolls Royce engine that we could provide to another engine manufacturer to produce for the government). Another shipbuilder or the government would have to contract with the individual equipment manufacturers for fabrication and delivery of the equipment for shipboard installation or, alternatively, negotiate a license with the individual equipment manufacturers based on the equipment, specifications and interfaces detailed in the seaframe design.

- Combat Systems – We have GPR to the technical data pertaining to the LM combat systems, architecture and interfaces. It currently resides in our shared repository. The GD Integrated Combat Management Systems (ICMS) is based on the Thales TACTICOS system for which Northrop Grumman is the sole U.S. licensee. Another shipbuilder or the government would have to either enter into a contract with Northrop Grumman for production and delivery of the ICMS or, alternatively, obtain a license for that system from Northrop Grumman. As with the seaframe, we do not possess GPR to the specific equipments for either system such as the gun, electronic warfare system or radar.

Any third parties seeking to compete on LCS would need to either contract directly with the equipment manufacturers for fabrication and delivery of the required equipment and associated software or, alternatively, negotiate licensing agreements for the equipment and software with the respective vendors. This is similar to the current approach in place with the LM and GD teams. An alternative approach would be for the government to contract directly with the equipment manufacturers and provide the equipment and software to the shipbuilder as Government Furnished Equipment/Government Furnished Information.

LCS "Build-to-Print" Design Concept

To implement a competitive "build-to-print" seaframe acquisition, there remains a significant effort to finalize those revisions to the design that have resulted during construction, as well as lessons learned from LCS Flight 0 production improvement initiatives, developmental/ operational testing and at-sea testing. There is a considerable amount of work necessary to convert a design package developed by a specific shipyard based on its own particular production capabilities and processes to one that can be provided to another qualified shipbuilder as a government furnished design.

The amount of effort necessary to prepare the LCS data packages to support a full and open competition derives from the structure of the initial LCS acquisition strategy. The foundation of the LCS procurement is not a traditional detailed drawing package but the Navy-established requirements detailed in the Capabilities Development Document (CDD). Each industry team

developed from the CDD a Specified Performance Document (SPD) that describes the required performance to meet the CDD requirements, then a build specification detailing how to build a ship to meet that performance. From these three documents, drawings and specifications detailing exactly what to construct were then developed. The contractual technical baseline is defined by the CDD, SPD and the build specifications, not the drawings. Configuration management is accomplished at the build specification level.

At present in the LCS acquisition, industry has developed drawing packages for LCS 1 and LCS 2. These include digital product models, extracted drawings and drawing liens, representing multiple changes accomplished to the drawings during production. Thus, while appropriate for use in construction by the existing industry teams, these packages were not envisioned to be used as the foundation documents for a build to print solicitation. It would not be prudent to pursue a build-to-print contract for the current design package until it fully reflects those changes.

The Navy's FY 2009 budget request did request funds to begin refinement of the Flight 0+ baseline design drawings and associated documentation into detailed production drawings and documents. These drawings will also incorporate production, assembly and fabrication lessons learned from the previous seaframes as well as operator feedback from the seaframe and mission package crews obtained during the testing and trials period. Additional time and resources will be necessary to complete a build-to-print package.

The build to print package requires the development of a neutral-format computer-aided design model (both 2-D and 3-D and STEP compliant) for the total ship, clearing all interferences for the model, and review and update of all additional required documentation to ensure that requirements are sufficiently detailed and "generic" to enable providers other than the incumbent to bid (e.g., the design can't reflect six-inch bent pipe if only the incumbent has facilities sufficient to accomplish this). The timing for completion of such a drawing package is dependent on completion of testing for the LCS lead ships. LCS 1 must complete Acceptance Trials 2 in Spring 2009 as well as seaframe developmental testing/operational testing or integration testing with mission packages. LCS 2 has not been delivered and must complete a similar test and trials period. The Navy is developing an estimate for LCS class design services needed to support this maturation.

Furthermore, to implement a full-and-open acquisition targeted at gaining increased access to additional shipyards, an approach must also be developed for the acquisition of the combat systems/networks/control systems/C4I equipment. To mitigate this risk for combat systems efforts under a build-to-print acquisition, the Navy would either need to direct the shipyards to contract with the current primes as subcontractors, or assume the role of providing the combat systems/networks/control systems/C4I equipment as GFE and develop the infrastructure necessary to serve as the integrator for the program.

LESSONS LEARNED

The Navy has incorporated many of the lessons learned from the initial LCS ships into overall acquisition policy and in specific shipbuilding programs.

On February 26, 2008, the Navy issued SECNAVNOTE 5000, which instituted an Acquisition Governance Improvement Six-Gate reporting, reviewing and oversight process that provides specific criteria for areas such as requirements, funding, and technical performance including a Probability of Program Success (PoPS) tool. This new process ensures that the various stakeholders from the resources, requirements and acquisition communities address and revisit at defined intervals, issues associated with technical maturity, affordability and program health.

Guidance emphasizing the use of independent engineering technical review boards and responsibility for Configuration Steering Boards to monitor requirements changes has been promulgated.

Initiatives to expand the size of the acquisition workforce and to evaluate the composition and experience of program offices are underway. Similar initiatives are underway in the technical and SUPSHIPS areas.

A rigorous production readiness review (PRR) prior to the start of fabrication is in place for shipbuilding programs. It was utilized for the start of fabrication for the DDG 1000, and will be used in the Joint High Speed Vessel (JHSV) program as well as the FY 2009 LCS ships.

A critical aspect of the PRR is design maturity. DDG 1000 requirements were that the design was at least 85% complete prior to start fabrication, including all units scheduled to start construction in the first six months. Similar criteria will govern the start of fabrication for JHSV and subsequent new ship designs.

SUMMARY

In summary, the Navy remains committed to the LCS program. LCS remains a critical warfighting requirement for our Navy to maintain dominance in the littorals and strategic choke points around the world.

The Navy continues to address the problems encountered in the early stages of the program and to implement improvements across the entire shipbuilding portfolio. We appreciate your strong support and the opportunity to testify before the Subcommittee. We will be pleased to answer any questions you may have.

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