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United States Government Accountability Office
Washington, DC 20548

December 8, 2010

Congressional Committees

Subject: *Navy's Proposed Dual Award Acquisition Strategy for the Littoral Combat Ship Program*

The Navy's Littoral Combat Ship (LCS) is envisioned as a vessel able to be reconfigured to meet three different mission areas: mine countermeasures, surface warfare, and antisubmarine warfare. Its design concept consists of two distinct parts—the ship itself (seaframe) and the mission package it carries and deploys. The Navy is procuring the first four ships in two different designs from shipbuilding teams led by Lockheed Martin and General Dynamics, which currently build their designs at Marinette Marine and Austal USA shipyards, respectively.

Prior to September 2009, the Navy planned to continue building the class using both ship designs. This strategy changed following unsuccessful contract negotiations that same year for fiscal year 2010 funded seaframes—an outcome attributable to industry proposals priced significantly above Navy expectations. In September 2009, the Navy announced that in an effort to improve affordability, it was revising the LCS program's acquisition strategy and would select one seaframe design before awarding contracts for any additional ships.¹ Following approval of this strategy in January 2010, the Navy issued a new solicitation—intended to lead to a downselect—for fiscal year 2010 seaframes. In support of this strategy, Congress authorized the Navy to procure up to 10 seaframes and 15 LCS ship control and weapon systems. The Navy planned to have a second competition in 2012 and provide five of the ship control and weapon systems to the winning contractor, who would construct up to 5 ships of the same design and install the systems. However, in November 2010, following receipt of new industry proposals for the fiscal year 2010 seaframes, the Navy proposed to change its acquisition strategy back to awarding new construction contracts to both industry teams.² According to the Navy, in order to execute this proposed dual 10-ship award, congressional authorization is required. If approved, the Navy's authorization would increase from 10 ships to 20 ships—including ship control and

¹ The decision to select a single ship design is referred to as the “downselect.”

² In response to the Navy's September 2009 LCS acquisition strategy change, General Dynamics and Austal USA revoked their teaming arrangement for future seaframes, in turn allowing the General Dynamics Bath Iron Works shipyard to compete for selection as the planned potential second source of the winning design. Austal USA and Lockheed Martin are the prime contractors competing for the current 10-ship program.

weapon systems. Absent this authorization, the Navy plans to proceed with a single award for one design by mid-December 2010.

In response to broad congressional interest arising from the Navy's proposed LCS acquisition strategy change, our objective was to assess any risks that could affect the Navy's ability to execute the program, using the authority of the Comptroller General to initiate our work. We relied primarily on our August 2010 report³ on the LCS program and more recent discussions with officials responsible for managing LCS acquisition including the Office of the Secretary of Defense; the Office of the Assistant Secretary of the Navy for Research, Development, and Acquisition; and Navy program officials, requirements officers, and cost analysts. To supplement our analysis, we reviewed (1) the most recent solicitation for LCS construction and (2) Navy briefing materials on the existing and proposed acquisition strategies for the LCS program. We were briefed on the Navy's analysis that supported its proposed change in acquisition strategy, but we did not evaluate it because of the time constraints that limited the scope of our work. Similarly, we did not evaluate the Navy's supporting data or the validity of the assumptions that informed the Navy's calculations of cost savings beyond the savings associated with the existing downselect strategy. We conducted this performance audit from November 2010 to December 2010 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The Navy estimates that both its existing and proposed acquisition strategies will generate significant cost savings to the government. According to the Navy, \$1.9 billion in savings resulted from the competition between the two offerors and is common to both strategies. However, the Navy estimates that approximately \$1.0 billion in additional cost savings would be realized under the proposed dual award strategy because of the avoidance of higher start-up costs and risks associated with the second source planned for fiscal year 2012, among other factors. According to the Navy, these additional savings would be offset, in part, by increased total ownership costs. The Navy plans to use some of the remaining savings, if realized, to fund construction of an additional LCS seaframe in fiscal year 2012. Table 1 compares the key tenets of each strategy.

³ See GAO, *Defense Acquisitions: Navy's Ability to Overcome Challenges Facing the Littoral Combat Ship Will Determine Eventual Capabilities*, GAO-10-523 (Washington, D.C.: Aug. 31, 2010).

Table 1: Comparison of the Navy’s Current and Proposed LCS Acquisition Strategies

Existing LCS acquisition strategy (January 2010)	Proposed LCS acquisition strategy (November 2010)
Contract with a single source on a fixed-price basis for up to 10 ships (2 ships awarded per year) from fiscal year 2010 through fiscal year 2014	Fixed-price contracts to two industry teams for up to 10 ships each (1 or 2 ships awarded per year) through fiscal year 2015 (total of up to 20 ships)
<p>Second solicitation for up to 5 additional ships to be constructed at a separate yard with awards planned between fiscal years 2012 and 2014.</p> <ul style="list-style-type: none"> • First source would provide the combat systems for the 5 additional ships constructed by the second shipyard 	<p>Program benefits, as identified by the Navy, that include:</p> <ul style="list-style-type: none"> • stabilizing the program and the industrial base with award of 20 ships, • funding an additional ship in fiscal year 2012 to support operational requirements, • sustaining competition through the program, and • enhancing Foreign Military Sales opportunities
<p>Navy estimates \$1.9 billion in cost savings attributable to:</p> <ul style="list-style-type: none"> • near-term competitive pricing pressures between the two current LCS shipbuilding teams, • economic order quantity purchases of key materials, • efficiencies associated with potentially moving to a single, common combat system, and • significantly reduced total ownership costs for the Navy 	<p>Navy estimates program benefits would generate approximately \$1 billion in additional savings above those estimated under the existing strategy that are attributable to:</p> <ul style="list-style-type: none"> • avoiding higher start-up costs (such as nonrecurring engineering and design costs) associated with awarding contracts to a second source starting in fiscal year 2012 and by • achieving greater labor efficiencies by constructing the ships at a higher rate
<p>Navy estimates that the cost benefits would be offset, in part, by the start-up costs associated with introducing a second source in fiscal year 2012.</p>	<p>According to the Navy, these savings would be offset, in part, by an additional \$842 million in total ownership costs, which the Navy equates to a net present value of \$295 million.</p>

Source: GAO analysis of Navy materials.

Note: Given time constraints, GAO did not fully assess the Navy’s assumptions that underpin the benefits it estimates for each strategy.

The quantities planned under both of the Navy’s strategies are similar through fiscal year 2015. These similarities are outlined in table 2, which details the Navy’s procurement plans for seaframes under both the existing downselect strategy and the proposed dual award strategy.

Table 2: LCS Seaframe Procurement Plans

		Fiscal year 2010	Fiscal year 2011	Fiscal year 2012	Fiscal year 2013	Fiscal year 2014	Fiscal year 2015	Total
Existing downselect	Winner	2	2	2	2	2		
	Second source			1	2	2	4	19
	Total	2	2	3	4	4	4	
<hr/>								
Proposed dual award	Contractor A	1	1	2	2	2	2	20
	Contractor B	1	1	2	2	2	2	
	Total	2	2	4	4	4	4	

Source: Navy.

Under the dual award strategy, the government will be authorized to contract for up to 20 ships. In contrast, the existing downselect strategy limits this authorization to up to 10 ships until fiscal year 2012, when the Navy planned to solicit a second source for additional ships.

Realizing Savings under Either LCS Strategy Depends on Successful Management of Certain Identified Program Risks

Successful business cases for shipbuilding programs require balance between the concept selected to satisfy warfighter needs and the resources—technologies, design knowledge, funding, time, and management capacity—needed to transform that concept into a product. Without a sound business case, program execution will be hampered, regardless of the contracting strategy. The LCS, given its stage of maturity and its unique mission, design, and operational concept, still faces design and construction risks. As with the Navy’s estimate of savings, most of these risks appear to be inherent to the program, regardless of which acquisition strategy is followed. Navy officials believe that experience to date on the program, coupled with fixed price contracts and a sufficient budget for ship changes, mitigates this risk. However, much work and demonstration remains for LCS, and other shipbuilding programs have had difficulty at this stage. On the other hand, a second ship design and source provided under the dual award strategy could provide the Navy an additional hedge against risk, should one design prove problematic. Mission equipment packages are common to both ships and would pose the same execution risks, apart from integration.

Design Changes Could Increase Near-Term Costs above Current Estimates

Under both the existing downselect strategy and the proposed dual award strategy, the Navy plans to award fixed-price incentive contracts for new seaframes. This type of contract provides for adjusting profit and establishing the final contract price by application of a formula based on the relationship of total final negotiated cost to total target cost. The final price is subject to a price ceiling, negotiated at the outset.

In the case of LCS, the solicitation stated that the government would share 50 percent of costs above the target cost, up to the price ceiling. Navy officials also stated that they have budgeted management reserve funds to accommodate potential impacts to cost performance during program execution. In other programs, the Navy has returned to Congress to request funding for costs exceeding the target costs. In the near term, cost increases are likely but it is unknown whether increases will exceed what the Navy has budgeted for fiscal years 2010 and beyond. The likely source of these cost increases is design changes, which result in out-of-sequence work, potentially limiting the shipbuilders' ability to achieve the benefits they anticipate from construction process improvements and shipyard capital investments.

Our August 2010 report on LCS discussed issues with the performance of particular ship systems at the time of lead ship deliveries and as a result of subsequent operating experience.⁴ In an effort to address technical issues on the first two ships, the Navy has implemented design changes for the third and fourth LCS seaframes (LCS 3 and LCS 4), several of which are not yet complete. These changes are significant and have affected the configuration of several major ship systems including propulsion, communications, electrical, and navigation. In addition, launch, handling, and recovery systems for both designs are still being refined, although the Navy reports recent progress related to each of these systems.⁵ To the extent that these design changes necessitate modifications in the ship specifications on which the contractors based their proposals for future ships, contract modifications will need to be negotiated and priced. According to the Navy, it estimates funding requirements for these change orders to total 5 percent for all future follow-on ships produced, regardless of whether it proceeds with a downselect strategy or the proposed dual award strategy. In addition, Navy officials stated that the seaframe solicitation includes a provision that agreed to design changes are "not to exceed" \$12 million—a feature that Navy officials state will bound government cost risk due to design changes. Pending full identification and resolution of deficiencies affecting the lead ships, the Navy's ability to stay within its budgeted limits remains to be seen.

As we reported earlier this year, the LCS shipbuilding teams have implemented process and capacity improvements based on lessons learned from constructing lead ships and have made capital investments in their yards in an effort to increase efficiency.⁶ Fully realizing these improvements may be challenging given the design changes still occurring in the program. To the extent that addressing technical issues disrupts the optimal construction sequence for follow-on ships, additional labor

⁴ GAO-10-523.

⁵ According to Navy officials, the most recent progress related to LCS launch, handling, and recovery systems consists of (1) successful operation and movement of an embarked 11-meter rigid-hull inflatable boat onboard LCS 1 in March 2010, (2) synthetic lift lines on LCS 2 successfully completing a 200 percent lift test, and (3) routine usage of a straddle carrier to move an 11-meter rigid-hull inflatable boat (with stowage cradle) and berthing modules around the LCS 2 mission bay. In addition, Navy officials state that LCS 1's system is scheduled to begin testing with the mine countermeasures mission package in fiscal year 2011 and testing of LCS 2's twin-boom extensible crane is progressing.

⁶ See GAO, *Defense Acquisitions: Guidance Needed on Navy's Use of Investment Incentives at Private Shipyards*, GAO-10-686 (Washington, D.C.: Jul. 26, 2010) and GAO-10-523.

hours could be required beyond current forecasts. Introducing such inefficiencies could offset initial benefits obtained from the process improvements and new facilities the shipbuilders have put into place, increasing the risk of out-of-sequence work and rework. Some level of design changes can be reasonably expected given the testing that remains. To date, however, Navy officials report that LCS 3 and LCS 4 changes are being managed efficiently—citing improved cost and schedule performance by both shipbuilders. The Navy also believes that the LCS seaframe may be less affected by mission equipment changes than other ships given the equipment’s modular design. Maintaining a high level of performance will depend on avoiding significant design changes to seaframes under construction.

Operations and Support Costs Difficult to Estimate

Navy officials expressed confidence that their cost estimate supporting the dual award provides details on the costs to operate and support both designs. However, since little actual LCS operating and support data are available to date, the Navy’s estimates for these costs are currently based on data from other ships and could change as actual cost data become more available. These estimates are also based on new operational concepts for personnel, training, and maintenance that have not been fully developed, tested, and implemented. For example, the Navy has not yet implemented a comprehensive training plan, and it is possible that the plan could cost more or less than the training costs currently accounted for by the Navy.

In addition, the Navy has not studied—within the context of the downselect strategy—the potential savings associated with early retirement of the two nonselected design ships. As such, decision makers do not have a complete picture of the various options available to them related to choosing between the downselect and dual award strategies. Under the existing downselect strategy, the Navy’s intention is to keep in service—at least initially—the other two ships of the design not selected for long-term production. The Navy acknowledged that operating and supporting two different designs carries increased costs as compared to the costs of employing only one design. As we previously reported, these costs include separate training facilities because each design has unique equipment and therefore different operating and maintenance requirements.⁷ In February 2010, we recommended that the Navy conduct a cost-benefit analysis of options for these two ships, including the possibility of retiring them from service—a recommendation with which the Department of Defense agreed. As we point out in the February report, it is important that estimates of long-term operating and support costs are available to assess alternatives before a decision is made, particularly since these costs constitute over 70 percent of a system’s life cycle costs. However, in discussions with Navy officials in November 2010, they told us that their latest assessment of the long-term costs of maintaining two ship designs does not consider the option of retiring the two nonselected ships.

⁷ See GAO, *Littoral Combat Ship: Actions Needed to Improve Operating Cost Estimates and Mitigate Risks in Implementing New Concepts*, GAO-10-257 (Washington, D.C.: Feb. 2, 2010).

Mission Package Uncertainties and Delays

The Navy's request to double its current 10-ship authorization to 20 ships—at a time when the mine countermeasures, surface warfare, and antisubmarine warfare mission packages continue to face significant developmental challenges—highlights the Navy's risk of investing in a fleet of ships that has not yet demonstrated its promised capability. Absent significant capability within its mission packages, seaframe functionality is largely constrained to self-defense as opposed to mission-related tasks.

Navy officials acknowledged that mission package systems have taken significantly longer to develop and field than anticipated. Underscoring this situation is the fact that development efforts for most of these systems predate the LCS program—in some cases by 10 years or more. However, Navy officials expressed confidence that their latest testing and production plans for mission package systems are executable. Recent testing of mission package systems has yielded mixed results. The Navy reports that two systems within the mine countermeasures mission package recently completed developmental testing, but another system is undergoing reliability improvements following production of several units that did not meet performance requirements.⁸ Further, test failures contributed to the cancellation of a key surface warfare mission package system, and the future composition of the package remains undetermined.⁹

Developmental challenges facing individual systems have led to procurement delays for all three mission packages and have disrupted program test schedules. Most notably, the Navy reports the first operational testing event involving a seaframe and partial mission package is now scheduled for late second quarter of fiscal year 2012, and the Navy expects individual mission package systems to remain in development through 2017.¹⁰

To safeguard against excess quantities of ships and mission packages being purchased before their combined capabilities are demonstrated, we recommended in our August 2010 report that the Secretary of Defense update the LCS acquisition strategy to account for operational testing delays in the program and resequence planned purchases of ships and mission packages, as appropriate.¹¹ The Department of Defense agreed with this recommendation, stating that an updated schedule was

⁸ According to Navy officials, the AN/AQS-20A sonar and Airborne Laser Mine Detection System recently completed developmental testing in August and October 2010, respectively. Alternatively, the Remote Minehunting System—produced since 2005—continues to struggle with reliability shortfalls. This has prompted the Navy to implement a series of design changes to the vehicle component and evaluate reducing the system's performance requirements.

⁹ Development of the Non-Line-of-Sight Launch System—an anticipated key system within the surface warfare package—was canceled in 2010 following test failures and higher than expected cost estimates. The Navy continues to evaluate alternatives to replace this capability onboard LCS.

¹⁰ According to Navy officials, the planned fiscal year 2012 operational test will employ the first LCS (LCS 1) seaframe and a (partial) surface warfare mission package. This date represents a recent update to the program's testing plan as the Navy's fiscal year 2011 budget estimates showed this event occurring in the third quarter of fiscal year 2013.

¹¹ GAO-10-523.

under development to better align seaframe and mission module production milestones. However, it is unclear how the department's concurrence with our recommendation can be reconciled against the Navy's current request to increase the planned seaframe commitment, particularly since no operational testing involving mission packages—or any of their individual systems—has since taken place. Until mission package and operational testing progresses—and key mine countermeasures, surface warfare, and antisubmarine warfare systems are proven effective and suitable onboard seaframes—the Navy cannot be certain that the LCS will deliver the full capability desired. This risk would increase with a commitment to higher quantities. The Navy believes this increased commitment is appropriately balanced against competing risks in the program.

Agency Comments and Our Evaluation

The Department of Defense provided us with written comments on a draft of this report. The department's response reiterated the benefits it anticipates realizing under the proposed dual award acquisition strategy.

In its comments, the department stated it had assessed the cost of sustaining a two ship class to be less than the cost—in financial and operational terms—of replacing these ships in a future procurement budget request. However, we are unaware of the underlying analysis the department has conducted to support this statement. Navy officials told us recently that they have not undertaken any type of analysis to weigh the potential benefits and drawbacks of retiring the two ships of the nonselected design, despite agreeing with our February 2010 recommendation to conduct such analysis.¹²

Further, the department stated that both LCS designs are now stable, citing the minimal change activity to date for LCS 3 and LCS 4 and the continued availability of change order budgets for those ships. However, our analysis shows that the Navy has deferred several changes affecting key ship systems until post-delivery for LCS 3 and LCS 4—a decision that has contributed to the positive, near-term performance the department cites. Further, as the Navy continues to address technical deficiencies affecting the lead ships—generally through design changes—the scope of deferred work for follow-on ships can reasonably be expected to grow. Until this scope is fully identified—and priced into existing and future LCS contracts—the department cannot be fully confident that its budgets for follow-on ships are sufficient to offset the cost increases associated with performing work out of sequence.

The department also emphasized progress it has made developing and testing LCS mission package systems, while at the same time acknowledging that some systems continue to experience developmental issues—noting that these systems have either been replaced with alternate systems or have become targets of increased Navy focus and attention. According to the department, its mission package approach allows substitute or re-engineered systems to be quickly and seamlessly identified for

¹² GAO-10-257.

incorporation into the mission package development stream without impacting overall fielding plans. However, our analysis shows that developmental delays to individual systems have caused all of the LCS mission packages—mine countermeasures, surface warfare, and antisubmarine warfare—to experience test disruptions and procurement delays. In fact, none of the mission packages—either in partial or full configuration—has completed operational testing onboard an LCS seaframe.

The department's written comments can be found in enclosure I. The department also provided technical comments, which were incorporated into the report as appropriate.

We are sending copies of this report to interested congressional committees, the Secretary of Defense, and the Secretary of the Navy. The report is also available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-4841 or martinb@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Staff making key contributions to this report were Diana Moldafsky, Assistant Director; Christopher R. Durbin; Jeremy Hawk; Simon Hirschfeld; Kristine Hassinger; and Karen Zuckerstein.



Belva M. Martin
Acting Director
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Enclosure

List of Committees

The Honorable Carl Levin
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The Honorable John McCain
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Susan M. Collins
Ranking Member
Committee on Homeland Security and Government Affairs
United States Senate

The Honorable Claire McCaskill
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The Honorable Norman D. Dicks
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Subcommittee on Defense
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Enclosure I: Comments from the Department of Defense



ACQUISITION
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DEC 06 2010

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Dear Ms. Martin:

This is the Department of Defense (DoD) response to the GAO draft report, GAO Draft Report, GAO-11-249R, 'LCS Proposed Acquisition Strategy' dated December 3, 2010, (GAO Code 120959).

The LCS program is a competitive dual-source shipbuilding program. Two industry teams have each designed, built and delivered a lead ship meeting the LCS performance requirements. Both of these lead ships are in Navy service, executing Fleet operational tasking as well as conducting a comprehensive test and evaluation program. The LCS shipbuilding teams are currently building their second ships with lessons learned from the lead ships fully incorporated into the designs. Both shipbuilders have dramatically improved performance from their lead ships as a result of design stability and through improvements in facilities and production efficiencies.

To achieve necessary further improvements in cost performance on the program, the Navy developed a competitive block buy down select strategy for procuring ten ships (two per year) of the 15 LCS ships planned in the Fiscal Year (FY) 2010 – 2014 shipbuilding plan. That LCS competitive strategy has been extremely effective in meeting one of the Navy's and Congress' key program objectives: competitive, affordable, fixed-price proposals. In fact, these competitive proposals, coupled with Navy's desires to increase ship procurement rates to support operational requirements, has created a new opportunity to award each offeror a fixed price ten-ship block buy, a total of 20 ships from FY 2010 – FY 2015. This dual award approach would procure all of the LCS' planned for those budget years, plus one additional ship in FY 2012. Adding the four LCS ships programmed for FY 2015 to the block buys brings the total to 20 ships.

The dual award strategy would allow the Navy to award two block buy contracts (ten ships each from FY 2010 – FY 2015), creating significant, additional savings compared to a down select, by leveraging the competitive fixed-price proposals in-hand. Under these two contracts, while all 20 ships will be congressionally authorized, the Government will be contractually obligated only for the ships that are appropriated in each year. Unlike a multiyear procurement, there is no termination liability required if the Government decides not to fund the out year ships. It is important to note that while this dual award increases the number of ships

procured during this period, with the addition of the FY 2012 ship financed by the dual award savings, it does not 'double' the quantity planned or programmed.

With the production start-up costs for both versions already retired, and proposals provided that reflect stable design and planning, stable production, learning curve performance, and long term vendor agreements, the acquisition savings for a dual award is projected to be \$2.9 billion (Then Year (TY)) through FY 2016, as measured against the President's Budget (PB) 2011 request. Of these savings, approximately \$1 billion (TY) is directly attributable to the dual award alone. Some of these savings are used to fund the additional FY 2012 ship. The savings enable the Navy to strengthen the total shipbuilding plan as well as enabling procurement of an additional LCS in FY 2012.

A dual award increases Navy's shipbuilding rate and eliminates the need to conduct a FY 2012 competition for a second shipyard source to build the successful design, delivering needed ships to the fleet sooner. In addition to adding one LCS in FY 2012, a dual award for 20 ships sustains existing stable, hot production lines at two shipyards. Dual award results in an accelerated delivery of LCS capabilities to the fleet, all while actually reducing total program cost and providing important stability for the industrial base. These new LCS savings can be re-invested in other programs, including shipbuilding, increasing recapitalization opportunities across the Department.

Both shipbuilders are already realizing significant production efficiencies on the two ships currently under construction as a direct result of capital investments that were not in place for LCS 1 and LCS 2. Additional savings are anticipated for future ships from further facility upgrades that will be self-financed by industry, with support from state and local governments. To date, all facility improvements have been completed on cost and schedule at both shipyards.

A dual award – which includes submission of respective technical data packages – creates many opportunities for future competition. The Navy has numerous alternatives for sustaining effective competition on this program beyond the dual award, more so than any other shipbuilding program since the early years of FFG 7 class competition. These include competing for cost and/or quantity, introduction of one or more second sources for a particular design, a future down selection, and competitive multiyear procurements, all of which would be viable as the LCS program progresses beyond the Future Years Defense Program (FYDP).

Regarding Operations & Support (O&S) costs, the acquisition savings provided by a dual award far exceed estimates of the O&S cost delta for two designs versus one design. Even under the down select strategy, the Navy planned on sustaining the two ships of the design not selected; the dual award only changes the marginal cost of this support by adding ten more ships to the already planned two-ship class. As noted, this marginal cost increase is more than offset by the savings realized through a dual award. Further, the Navy will continue to aggressively assess opportunities to reduce the O&S costs for the Class. While it has been suggested that the Navy could retire the two-ship class early to avoid O&S cost, the reality is that the Navy needs this capability in numbers and the cost of sustaining the two ship class has been assessed to be less than the cost – in financial and operational terms – of replacing these ships in a future procurement budget request.

Many of the technical issues noted in the August 2010 GAO Report already have been addressed in the program. Specifically, in several instances the GAO notes cost risk as a result of design changes still occurring in the program. In fact, both LCS designs are now stable. Design change from the lead ship has been incorporated in the follow ships as part of their baseline and subsequent change activity has been minimized. At current change level, a few percent, change activity on this program is improved upon historical shipbuilding performance. There is no evidence that follow ship change order budgets will not be adequate to address any necessary changes that may occur during execution of the block buy. For example, the LCS 3 recently launched at 80 percent complete, at which point the change order budget is less than 50 percent expended. LCS 4 has expended only 4 percent of her planned change order budget at 45 percent construction complete. This substantially improved level of completeness at launch, the low rate of expenditure of change order budget, and the attendant improvement in cost and schedule performance by both shipbuilders is a clear indication that out-of-sequence work and design change activity have been contained. LCS 3 launched on December 4th at approximately 80 percent complete, as compared with LCS 1, which was barely 50 percent complete at launch. LCS 3 is also under budget and on schedule. LCS 4 is showing similar improvements over LCS 2.

Perhaps most important, the Navy budget risk is contained by using fixed price incentive contracts, which cap the government's price risk at ceiling. The Navy projection of \$2.9 billion in acquisition savings for the dual award includes management reserve for any potential impact to cost performance during execution.

Mission Package (MP) development and testing is progressing well. From program inception, the acquisition strategy for mission packages has employed an incremental approach and remained stable, fielding systems as they achieve the required level of maturity. This phased plan provides progressively greater capability through the introduction of mature programs of record into the respective mission packages while mitigating the risk of individual systems. Those few systems experiencing developmental issues (Non-Line-of-Sight – Launching System (NLOS – LS) and Remote Minehunting System (RMS)) are either being replaced with alternate systems or are targets of increased leadership focus and programmatic attention. Results are positive in all cases. Rather than indicating weakness in the MP approach, these few failures demonstrate its strength; substitute or re-engineered systems are quickly and seamlessly identified and sequenced for in-stride incorporation into the MP development stream without impacting the overall fielding plan. Equally important, the MP approach has succeeded in eliminating shipboard impact associated with changes to the MP (as in the case of NLOS) through strict adherence to interface controls between MP and the ship.

Recent mission package testing has demonstrated the ability to meet Mine Countermeasure (MCM) and Surface Warfare (SUW) Increment I fielding requirements. The Navy is on track to deploy Increment I of the MCM MP in 2013. Increment I will provide capability greater than is currently fielded in the fleet. An Engineering Development Model (EDM) for the Variable Depth Sonar (VDS) is under contract to deliver and commence testing in FY 2012, which will be the foundation of the Anti-Submarine Warfare (ASW) Spiral B MP. The Program of Record (PoR) is to continue spiral development of additional capability through 2017. The PoR will remain unchanged regardless of a down select or dual award acquisition strategy. This will allow the MP procurement to remain in phase with LCS deliveries.

In summary, by leveraging the competitive, fixed price proposals currently in hand, the Navy, subject to annual congressional approval, has the opportunity to achieve dramatic procurement cost savings, accelerate fleet introduction of LCS, sustain stable production of both designs, mitigate potential risk associated with production start up at a second yard, and maintain opportunities for future competition. Not only do both designs meet the Navy's requirements, but also the design differences offer unique opportunities and flexibility to the Fleet in how these ships could be employed.

Detailed comments on the report are enclosed. The Department appreciates the opportunity to comment on the report. For further questions concerning this report, please contact Darlene Costello, Deputy Director, Naval Warfare, 703-697-2205.

Sincerely,



David G. Ahern
Deputy Assistant Secretary of Defense
Portfolio Systems Acquisition

Enclosure:
As stated

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