Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-374

Littoral Combat Ship (LCS)

As of FY 2017 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President’s Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

Littoral Combat Ship (LCS)

DoD Component

Navy

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References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated April 7, 2011

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated April 7, 2011

Mission and Description

The role of the Littoral Combat Ship (LCS) is to provide joint forces access in the littoral. LCS is designed to be a fast, agile, and networked surface combatant. It will focus on three primary anti-access mission areas within Littoral Surface Warfare operations: prosecution of small boats, mine warfare, and littoral anti-submarine warfare. Its high speed and ability to operate at economical loiter speeds will enable fast and calculated responses to small boat threats, mine laying and quiet diesel submarines. LCS employment of networked sensors for Intelligence, Surveillance, and Reconnaissance in support of Special Operations Forces will directly enhance littoral mobility. Its shallow draft will allow easier excursion into shallower areas for both mine countermeasures and small boat prosecution. Using LCS against these asymmetric threats will enable Joint Commanders to concentrate multi-mission combatants on primary missions such as precision strike, battle group escort and theater air defense.

Executive Summary

In 2015, the LCS Program continued to validate and deliver capability to the Fleet. Each LCS variant has achieved IOC and twenty-four LCS Seaframes have been awarded to date: six have delivered to the Navy, 14 are in various stages of production, and four are in pre-production status.

USS CORONADO (LCS 4) conducted Initial Operational Test & Evaluation events in August and September 2015 with the Surface Warfare Mission Package Increment II embarked, leading to declaration of IOC for the Independence variant. LCS 4 also conducted the first ever at-sea firing of the Sea Rolling Airframe Missile Anti-Ship Cruise Missile defense system successfully, against an aerial target. LCS 4 recently completed Total Ship Survivability Trial, and is currently preparing for her maiden deployment to the Western Pacific in summer 2016.

USS MILWAUKEE (LCS 5) and USS JACKSON (LCS 6) delivered to the Navy in October and August 2015, respectively. LCS 5 and LCS 6 delivered with the fewest number of starred and trial cards of their respective variants, to date. Following commissioning in first quarter FY 2016 both vessels transited to Mayport, Florida to undergo final preparations for Full Ship Shock Trials scheduled for summer 2016.

For ships in construction, hull over hull performance continues to improve. With the stabilization of the front-end of production, both shipyards have transitioned to serial trials and delivery. DETROIT (LCS 7) and MONTGOMERY (LCS 8) are preparing for Acceptance Trial followed by Delivery in third quarter FY 2016. LCS 9 through LCS 20 are in various stages of production.

On March 31, 2015, the Navy executed the USD(AT&L) approved FY 2015/FY 2016 LCS acquisition strategy by funding three FY 2015 ships, two to Austal (LCS 22 and LCS 24) and one to Lockheed Martin (LCS 21), plus advance procurement for LCS 23. The Navy also added one FY 2016 priced option ship for LM and Austal based on the competitive prices of the block buy.

On November 24, 2015, the Navy executed the remaining funding for LCS 23, the final LCS of the block buy. The remaining two FY 2016 LCS, LCS 25 and LCS 26 are priced options under the 2010-2016 block buy contracts and are required to be funded no later than March 31, 2016.

The FY 2017 PB submission requests $1,126M to procure two LCS in FY 2017. This represents a quantity reduction of one (1) LCS from the FY 2016 PB. On December 14, 2015 the Secretary of Defense directed that the Navy build a total of 40 LCS and Frigates, and down-select to one variant in FY 2019. The FY 2017 acquisition strategy supporting the final procurement of LCS is currently under review. The estimate reflected in this SAR represents the costs of the budgeted 40 ship program (vice the required 52 ship program of record). This represents an increase of 8 ships from the December 2014 32 ship SAR.

Sequestration and Congressional reductions in FY 2010 – FY 2013 reduced LCS 5 – LCS 16 budgets by $213M impacting the program's ability to fund shipbuilding contracts to the PM's estimate. FY 2017 PB requests $86M of cost to complete for the FY 2012 and FY 2013 LCS.

In April 2011, in conjunction with the LCS Seaframe Milestone B decision, USD(AT&L) certified the LCS Seaframe program pursuant to section 2366b of title 10, United States Code, with waivers. Specifically, USD(AT&L) was unable to certify three provisions and that without these waivers the Department would be unable to meet critical national security objectives. Provisions (a)1(B) (affordability) and 1(D) (funding available) were waived due to a total resource and funding shortfall in the period covered by the FYDP submitted in FY 2011 when the certification was made. The remaining resources required to complete the small surface combatant program remain outside the FYDP as submitted for FY 2017 PB. For the waiver to provision (a)1(C) (reasonable cost estimates with concurrence of Director (D),CAPE), the D,CAPE continues to monitor the cost estimates as the program progresses through the budget cycles and participates in annual DAB In-Process Reviews conducted by USD(AT&L).

Current Contract Price ($M), Estimated Price at Completion ($M) and Cost and Schedule Variance for the contracts included in this report are For Official Use Only - Exempt from FOIA release under 5 U.S.C. 552(b)(4).
There are no significant software-related issues with this program at this time.

Threshold Breaches

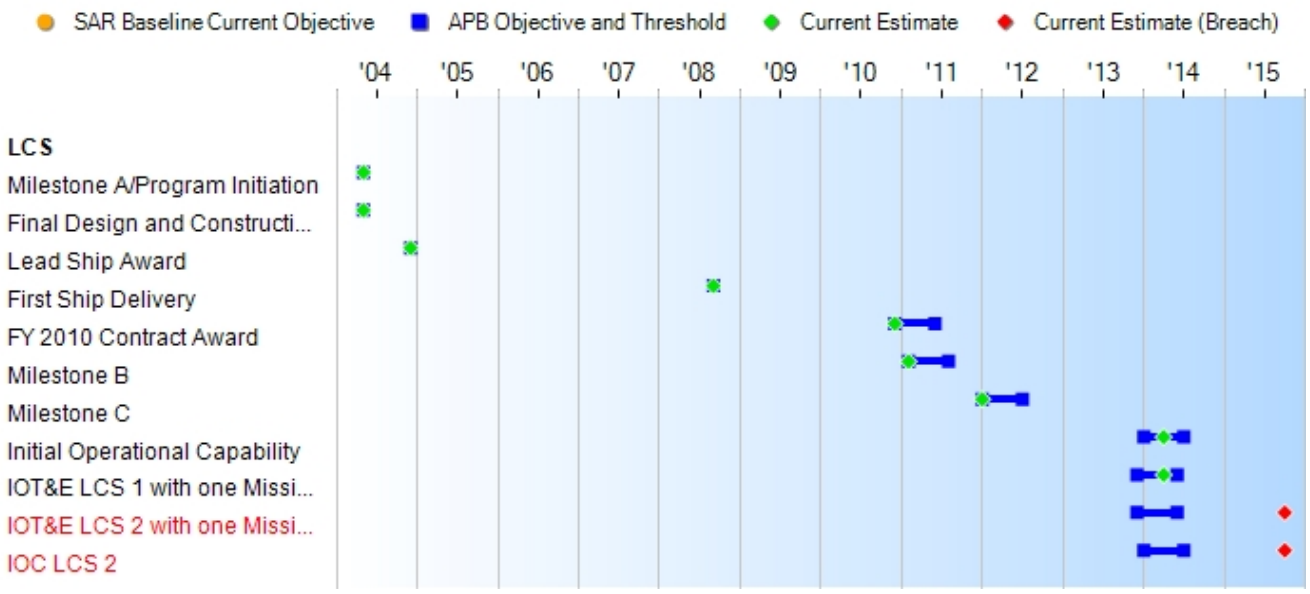
APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Explanation of Breach

The LCS 2 Initial Operational Test & Evaluation (IOT&E)/IOC schedule breach was previously reported in the December 2013 SAR. These requirements were subsequently resolved though the USS CORONADO (LCS 4) conduct of IOT&E events in August-October 2015, leading to declaration of IOC for the INDEPENDENCE variant.

Schedule



Schedule Events					
Events	**SAR Baseline Development Estimate**	**Current APB Development Objective/Threshold**		**Current Estimate**	
Milestone A/Program Initiation	May 2004	May 2004	May 2004	May 2004	
Final Design and Construction Contract Award	May 2004	May 2004	May 2004	May 2004	
Lead Ship Award	Dec 2004	Dec 2004	Dec 2004	Dec 2004	
First Ship Delivery	Sep 2008	Sep 2008	Sep 2008	Sep 2008	
FY 2010 Contract Award	Dec 2010	Dec 2010	Jun 2011	Dec 2010	
Milestone B	Feb 2011	Feb 2011	Aug 2011	Feb 2011	
Milestone C	Jan 2012	Jan 2012	Jul 2012	Jan 2012	
Initial Operational Capability	Jan 2014	Jan 2014	Jul 2014	Apr 2014	
IOT&E LCS 1 with one Mission Package	Dec 2013	Dec 2013	Jun 2014	Apr 2014	
IOT&E LCS 2 with one Mission Package	Dec 2013	Dec 2013	Jun 2014	**Oct 2015**[1]	(Ch-1)
IOC LCS 2	Jan 2014	Jan 2014	Jul 2014	**Oct 2015**[1]	(Ch-2)

[1] *APB Breach*

Change Explanations

(Ch-1) IOT&E LCS 2 with one Mission Package changed from August 2015, as previously reported, to October 2015 to reflect the completion of IOT&E for the LCS 2 (INDEPENDENCE) variant in support of declaration of IOC.
(Ch-2) IOC LCS 2 changed from September 2015, as previously reported, to October 2015 to reflect the completion of IOT&E for the LCS 2 (INDEPENCENCE) variant in support of declaration of IOC.

Acronyms and Abbreviations

IOT&E - Initial Operational, Test and Evaluation

Performance

Performance Characteristics					
SAR Baseline Development Estimate	**Current APB Development Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**	
Navigational Draft (ft)					
10	10	20	15.7 / 15.4 ft	15.7 / 15.4 ft	(Ch-1)
Sprint Speed (kts)					
50	50	40	38.7 / 40.2 kts	40 / 40.2 kts	(Ch-1)
Range at Transit Speed (includes payload)					
4,300 nm @ 16 kts	4,300 nm @ 16 kts	3,500 nm @ 14 kts	3405nm / 4285nm @ 14 kts	3500nm / 4285nm @ 14 kts	(Ch-1)
Mission Package Payload (Weight)					
210 MT (130 MT) mission package/80 MT mission package fuel)	210 MT (130 MT) mission package/80 MT mission package fuel)	180 MT (105 MT mission package/75 MT mission package fuel)	180 MT / 180 MT	180 MT / 180 MT - (105 MT) mission package/75 MT mission package fuel)	(Ch-1)
Net- Ready: The system must support Net-Centric military operations. The system must be able to enter and be managed in the network, and exchange data in a secure manner to enhance mission effectiveness. The system must continuously provide survivable, interoperable, secure, and operationally effective information exchanges to enable a Net-Centric military capability.					
The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) IA requirements including availability, integrity, authenticat-ion, confidential-ity, and	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) IA requirements including availability, integrity, authenticat-	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) IA requirements	TBD / TBD	The system for both LCS variants will fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) IA requirements including availability,	(Ch-1)

nonrepudiat-ion, and issuance of an ATO by the DAA, And 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	ion, confidential-ity, and nonrepudiat-ion, and issuance of an ATO by the DAA, And 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	including availability, integrity, authenticat-ion, confidential-ity, and nonrepudiat-ion, and issuance of an IATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.		integrity, authenticat-ion, confidential-ity, and nonrepudiat-ion, and issuance of an ATO by the DAA, And 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	
Core Crew Manning (# Core Crew Members)					
15	15	50	50 Core Crew / 50 Core Crew	50 Core Crew / 50 Core Crew	(Ch-1)
Materiel Availability					
0.712	0.712	0.64	TBD / TBD	0.64 / 0.64	(Ch-1)
Systems Training (Core Crew)					
Trained-to-Certify at all Team (Watch Section) levels	Trained-to-Certify at all Team (Watch Section) levels	Trained-to-Qualify at individual level (billet/watch station)	TBD / TBD	Trained-to-Qualify at Individual level (billet/watch station) / Trained-to-Qualify at Individual level (billet/watch station)	(Ch-1)

Classified Performance information is provided in the classified annex to this submission.

Requirements Reference

Flight 0+ Capability Development Document (CDD) dated June 17, 2008

Change Explanations

(Ch-1) The demonstrated performance and current estimates for all KPPs changed to reflect the addition of the INDEPENDENCE variant. For each of these fields, the first values reflect the FREEDOM estimate and performance, as reported in the December 2014 SAR.

Acronyms and Abbreviations

ATO - Authority to Operate
DAA - Designated Approval Authority
DISR - DoD IT Standards Registry

ft - Feet
GIG - Global Information Grid
IA - Information Assurance
IATO - Interim Authority to Operate
IT - Information Technology
KIP - Key Interface Profile
kts - Knots
MT - Metric Ton
NCOW RM - Net-Centric Operations Warfare Reference Model
nm - Nautical Miles
TV - Technical View

Track to Budget

RDT&E

Appn	BA	PE
Navy	04	0603581N

Project	Name		
3096	Littoral Combat Ship/Littoral Combat Ship Development	(Shared)	
4018	Littoral Combat Ship/Littoral Combat Ship Construction		(Sunk)
4506	LCS Training		
9999	LCS Training Courseware		(Sunk)
Notes:	Congressional Add		
9999	Littoral Combat Ship/Revised Acquisition Strategy		(Sunk)
Notes:	Congressional Add		

Appn	BA	PE
Navy	04	0603599N

Project	Name
3086	Frigate Development

Procurement

Appn	BA	PE
Navy	02	0204230N

Line Item	Name	
2127	Littoral Combat Ship	

Appn	BA	PE
Navy	05	0204230N

Line Item	Name	
5110	Outfitting	(Shared)
5300	Completion of Prior Year Shipbuilding Programs	(Shared)

Appn	BA	PE
Navy	01	0204230N

Line Item	Name		
0944	LCS Class Equipment	(Shared)	
1320	Other Ship Training Equipment	(Shared)	(Sunk)
1604	LCS In-Service Modernization		

Appn	BA	PE
Navy	04	0204230N

Line Item	Name	
5664	Surface Training Equipment	(Shared)

MILCON

Appn	BA	PE
Navy	01	0203176N

Project	Name	
00245499	LCS Facility Support	(Sunk)

	00245500	LCS Training Facility		(Sunk)	
	60201425	LCS Logistics Support Facility	(Shared)	(Sunk)	
Navy	1205 01	0815976N			
	Project	**Name**			
	60201423	LCS Operational Trainer Facility	(Shared)	(Sunk)	
Navy	1205 03	0901211N			
	Project	**Name**			
	64482044	Planning	(Shared)	(Sunk)	

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2010 $M			BY 2010 $M	TY $M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	3433.3	3433.3	3776.6	3564.5	3481.7	3481.7	3662.6
Procurement	28369.2	28369.2	31206.1	20130.2	33720.5	33720.5	24970.6
Flyaway	--	--	--	20130.2	--	--	24970.6
Recurring	--	--	--	20130.2	--	--	24970.6
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	208.5	208.5	229.4	224.1	236.6	236.6	267.5
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	32011.0	32011.0	N/A	23918.8	37438.8	37438.8	28900.7

Confidence Level

Confidence Level of cost estimate for current APB: 50%

The estimate to support this program, like most cost estimates, is built upon a product-oriented work breakdown structure based on historical actual cost information to the maximum extent possible, and, most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which we have been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition Programs (MDAPs). Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about as likely the estimate will prove too low or too high for the program as described.

Cost Notes

The FY 2017 PB submission requests $1,126M to procure two LCS in FY 2017. This represents a quantity reduction of one LCS from the FY 2016 PB. The estimate reflected in this SAR represents the costs of the budgeted 40 ship program (vice the required 52 ship program of record).

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate

RDT&E	2	2	2
Procurement	53	53	38
Total	55	55	40

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2017 President's Budget / December 2015 SAR (TY$ M)									
Appropriation	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
RDT&E	2799.0	121.4	136.5	103.6	105.5	44.0	43.8	308.8	3662.6
Procurement	10790.0	1691.6	1461.7	992.5	1236.8	978.2	1605.8	6214.0	24970.6
MILCON	100.9	37.4	0.0	0.0	0.0	0.0	0.0	129.2	267.5
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2017 Total	13689.9	1850.4	1598.2	1096.1	1342.3	1022.2	1649.6	6652.0	28900.7
PB 2016 Total	13876.9	1847.9	1872.5	1817.1	446.6	523.4	882.3	575.6	21842.3
Delta	-187.0	2.5	-274.3	-721.0	895.7	498.8	767.3	6076.4	7058.4

Funding Notes

On December 14, 2015 the Secretary of Defense directed that the Navy build a total of 40 LCS and Frigates, and down-select to one variant (Frigate) in FY 2019. The estimate reflected in this SAR represents the costs of the budgeted 40 ship program (vice the required 52 ship program of record). This represents an increase of 8 ships from the December 2014 32 ship SAR.

PB17 OPN LI 9020 funds that were identified as being LCS specific are not part of the LCS Seaframe acquisition program.

Quantity Summary										
FY 2017 President's Budget / December 2015 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Development	2	0	0	0	0	0	0	0	0	2
Production	0	21	3	2	1	1	1	2	7	38
PB 2017 Total	2	21	3	2	1	1	1	2	7	40
PB 2016 Total	2	21	3	3	3	0	0	0	0	32
Delta	0	0	0	-1	-2	1	1	2	7	8

Cost and Funding

Annual Funding By Appropriation

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	--	--	--	--	--	--	35.8
2004	--	--	--	--	--	--	116.8
2005	--	--	--	--	--	--	369.8
2006	--	--	--	--	--	--	384.5
2007	--	--	--	--	--	--	573.1
2008	--	--	--	--	--	--	200.9
2009	--	--	--	--	--	--	197.4
2010	--	--	--	--	--	--	260.1
2011	--	--	--	--	--	--	99.0
2012	--	--	--	--	--	--	147.0
2013	--	--	--	--	--	--	168.9
2014	--	--	--	--	--	--	165.5
2015	--	--	--	--	--	--	80.2
2016	--	--	--	--	--	--	121.4
2017	--	--	--	--	--	--	136.5
2018	--	--	--	--	--	--	103.6
2019	--	--	--	--	--	--	105.5
2020	--	--	--	--	--	--	44.0
2021	--	--	--	--	--	--	43.8
2022	--	--	--	--	--	--	61.9
2023	--	--	--	--	--	--	49.7
2024	--	--	--	--	--	--	105.4
2025	--	--	--	--	--	--	65.1
2026	--	--	--	--	--	--	17.5
2027	--	--	--	--	--	--	9.2
Subtotal	2	--	--	--	--	--	3662.6

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2010 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	--	--	--	--	--	--	41.1
2004	--	--	--	--	--	--	130.5
2005	--	--	--	--	--	--	402.7
2006	--	--	--	--	--	--	406.1
2007	--	--	--	--	--	--	590.8
2008	--	--	--	--	--	--	203.4
2009	--	--	--	--	--	--	197.3
2010	--	--	--	--	--	--	256.1
2011	--	--	--	--	--	--	95.2
2012	--	--	--	--	--	--	139.1
2013	--	--	--	--	--	--	158.1
2014	--	--	--	--	--	--	152.8
2015	--	--	--	--	--	--	73.1
2016	--	--	--	--	--	--	108.9
2017	--	--	--	--	--	--	120.3
2018	--	--	--	--	--	--	89.5
2019	--	--	--	--	--	--	89.4
2020	--	--	--	--	--	--	36.6
2021	--	--	--	--	--	--	35.7
2022	--	--	--	--	--	--	49.4
2023	--	--	--	--	--	--	38.9
2024	--	--	--	--	--	--	80.9
2025	--	--	--	--	--	--	49.0
2026	--	--	--	--	--	--	12.9
2027	--	--	--	--	--	--	6.7
Subtotal	2	--	--	--	--	--	3564.5

RDT&E for the Program includes the detail design and construction of two Flight 0 ships in addition to the program development, test and evaluation, training development, and sustained engineering for both LCS and Frigate.

Annual Funding 1810 | Procurement | Other Procurement, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2012	--	--	20.4	--	20.4	--	20.4
2013	--	--	30.8	--	30.8	--	30.8
2014	--	--	68.3	--	68.3	--	68.3
2015	--	--	35.4	--	35.4	--	35.4
2016	--	--	88.5	--	88.5	--	88.5
2017	--	--	73.7	--	73.7	--	73.7
2018	--	--	131.8	--	131.8	--	131.8
2019	--	--	112.4	--	112.4	--	112.4
2020	--	--	82.7	--	82.7	--	82.7
2021	--	--	65.6	--	65.6	--	65.6
2022	--	--	1.1	--	1.1	--	1.1
2023	--	--	10.7	--	10.7	--	10.7
2024	--	--	103.9	--	103.9	--	103.9
2025	--	--	1.9	--	1.9	--	1.9
Subtotal	--	--	827.2	--	827.2	--	827.2

Annual Funding 1810 | Procurement | Other Procurement, Navy							
Fiscal Year	Quantity	BY 2010 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2012	--	--	19.2	--	19.2	--	19.2
2013	--	--	28.6	--	28.6	--	28.6
2014	--	--	62.6	--	62.6	--	62.6
2015	--	--	32.0	--	32.0	--	32.0
2016	--	--	78.7	--	78.7	--	78.7
2017	--	--	64.3	--	64.3	--	64.3
2018	--	--	112.8	--	112.8	--	112.8
2019	--	--	94.3	--	94.3	--	94.3
2020	--	--	68.1	--	68.1	--	68.1
2021	--	--	52.9	--	52.9	--	52.9
2022	--	--	0.9	--	0.9	--	0.9
2023	--	--	8.3	--	8.3	--	8.3
2024	--	--	79.0	--	79.0	--	79.0
2025	--	--	1.4	--	1.4	--	1.4
Subtotal	--	--	703.1	--	703.1	--	703.1

OPN for the Program includes the battle spares and shore based trainers for both LCS and Frigate.

Annual Funding 1611 | Procurement | Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2009	2	1341.6	--	--	1341.6	--	1341.6
2010	2	1044.9	--	--	1044.9	--	1044.9
2011	2	1189.1	--	--	1189.1	--	1189.1
2012	4	1719.6	--	--	1719.6	--	1719.6
2013	4	1787.7	--	--	1787.7	--	1787.7
2014	4	1862.2	--	--	1862.2	--	1862.2
2015	3	1690.0	--	--	1690.0	--	1690.0
2016	3	1603.1	--	--	1603.1	--	1603.1
2017	2	1388.0	--	--	1388.0	--	1388.0
2018	1	860.7	--	--	860.7	--	860.7
2019	1	1124.4	--	--	1124.4	--	1124.4
2020	1	895.5	--	--	895.5	--	895.5
2021	2	1540.2	--	--	1540.2	--	1540.2
2022	2	1618.6	--	--	1618.6	--	1618.6
2023	2	1469.1	--	--	1469.1	--	1469.1
2024	2	1564.1	--	--	1564.1	--	1564.1
2025	1	942.2	--	--	942.2	--	942.2
2026	--	148.2	--	--	148.2	--	148.2
2027	--	142.6	--	--	142.6	--	142.6
2028	--	129.0	--	--	129.0	--	129.0
2029	--	82.6	--	--	82.6	--	82.6
Subtotal	38	24143.4	--	--	24143.4	--	24143.4

Annual Funding 1611 | Procurement | Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	BY 2010 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2009	2	1289.4	--	--	1289.4	--	1289.4
2010	2	970.2	--	--	970.2	--	970.2
2011	2	1069.1	--	--	1069.1	--	1069.1
2012	4	1512.0	--	--	1512.0	--	1512.0
2013	4	1541.0	--	--	1541.0	--	1541.0
2014	4	1575.7	--	--	1575.7	--	1575.7
2015	3	1405.6	--	--	1405.6	--	1405.6
2016	3	1309.2	--	--	1309.2	--	1309.2
2017	2	1112.1	--	--	1112.1	--	1112.1
2018	1	676.2	--	--	676.2	--	676.2
2019	1	866.0	--	--	866.0	--	866.0
2020	1	676.2	--	--	676.2	--	676.2
2021	2	1140.2	--	--	1140.2	--	1140.2
2022	2	1174.8	--	--	1174.8	--	1174.8
2023	2	1045.4	--	--	1045.4	--	1045.4
2024	2	1091.2	--	--	1091.2	--	1091.2
2025	1	644.4	--	--	644.4	--	644.4
2026	--	99.4	--	--	99.4	--	99.4
2027	--	93.7	--	--	93.7	--	93.7
2028	--	83.1	--	--	83.1	--	83.1
2029	--	52.2	--	--	52.2	--	52.2
Subtotal	38	19427.1	--	--	19427.1	--	19427.1

SCN for the Program includes construction, outfitting, and post-delivery requirements for LCS and Frigate.

Cost Quantity Information 1611 | Procurement | Shipbuilding and Conversion, Navy		
Fiscal Year	**Quantity**	**End Item Recurring Flyaway (Aligned With Quantity) BY 2010 $M**
2009	2	1400.3
2010	2	1087.9
2011	2	1107.1
2012	4	1790.4
2013	4	1730.2
2014	4	1706.6
2015	3	1373.7
2016	3	1314.2
2017	2	994.8
2018	1	542.6
2019	1	690.6
2020	1	601.8
2021	2	1135.3
2022	2	1122.2
2023	2	1110.5
2024	2	1111.6
2025	1	607.3
2026	--	--
2027	--	--
2028	--	--
2029	--	--
Subtotal	38	19427.1

Annual Funding 1205 | MILCON | Military Construction, Navy and Marine Corps	
Fiscal Year	**TY $M**
	Total Program
2013	62.3
2014	16.1
2015	22.5
2016	37.4
2017	--
2018	--
2019	--
2020	--
2021	--
2022	129.2
Subtotal	267.5

Annual Funding 1205 | MILCON | Military Construction, Navy and Marine Corps	
Fiscal Year	**BY 2010 $M**
	Total Program
2013	57.0
2014	14.5
2015	20.0
2016	32.6
2017	--
2018	--
2019	--
2020	--
2021	--
2022	100.0
Subtotal	224.1

MILCON for the Program reflects requirements for both LCS and Frigate.

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	2/18/2011	10/17/2014
Approved Quantity	24	26
Reference	Milestone B ADM	LCS 2016 Acquisition Strategy
Start Year	2005	2005
End Year	2015	2016

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the Milestone B decision that includes the ships through FY 2015, and subsequent extension through 2016, in order to cover the LCS Seaframe program requirements.

The LRIP decision of 26 ships includes two ships procured with RDT&E, two ships procured in FY 2009, and the 22 ships being procured in a block buy arrangement in FY 2010 through FY 2016.

Foreign Military Sales

None

Nuclear Costs

None

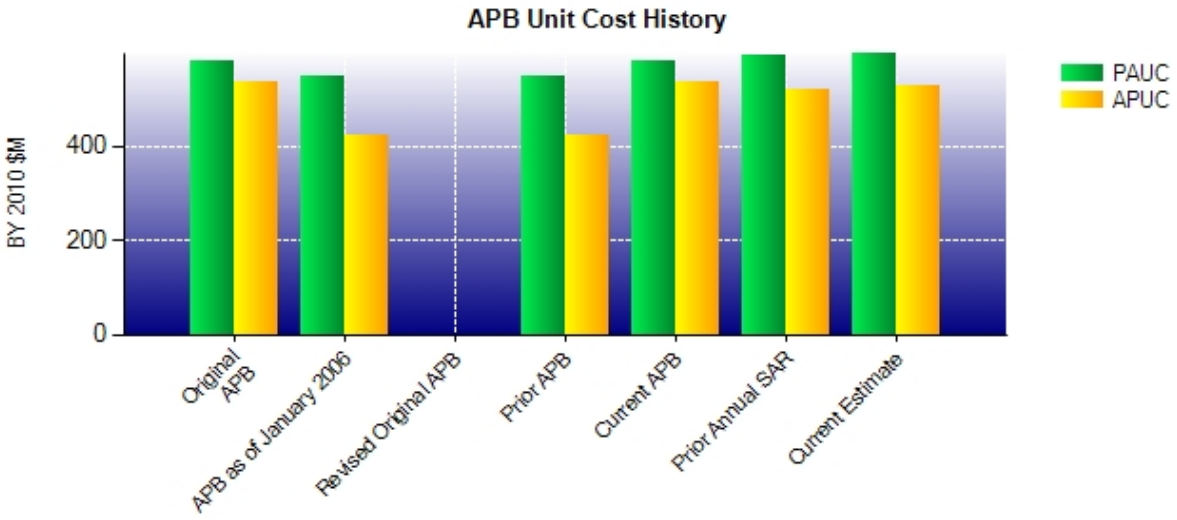
Unit Cost

Unit Cost Report

Item	BY 2010 $M Current UCR Baseline (Apr 2011 APB)	BY 2010 $M Current Estimate (Dec 2015 SAR)	% Change
Program Acquisition Unit Cost			
Cost	32011.0	23918.8	
Quantity	55	40	
Unit Cost	582.018	597.970	+2.74
Average Procurement Unit Cost			
Cost	28369.2	20130.2	
Quantity	53	38	
Unit Cost	535.268	529.742	-1.03

Item	BY 2010 $M Original UCR Baseline (Apr 2011 APB)	BY 2010 $M Current Estimate (Dec 2015 SAR)	% Change
Program Acquisition Unit Cost			
Cost	32011.0	23918.8	
Quantity	55	40	
Unit Cost	582.018	597.970	+2.74
Average Procurement Unit Cost			
Cost	28369.2	20130.2	
Quantity	53	38	
Unit Cost	535.268	529.742	-1.03

Unit Cost History



Item	Date	BY 2010 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Apr 2011	582.018	535.268	680.705	636.236
APB as of January 2006	May 2004	547.200	424.450	502.925	400.000
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	May 2004	547.200	424.450	502.925	400.000
Current APB	Apr 2011	582.018	535.268	680.705	636.236
Prior Annual SAR	Dec 2014	594.162	521.857	682.572	614.487
Current Estimate	Dec 2015	597.970	529.742	722.518	657.121

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)									
Initial PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
680.705	65.482	4.933	27.698	55.100	-111.400	0.000	0.000	41.813	722.518

Current SAR Baseline to Current Estimate (TY $M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
636.236	68.153	-12.363	32.482	42.826	-110.213	0.000	0.000	20.885	657.121

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	May 2004	May 2004	N/A	May 2004
Milestone B	Jan 2007	Feb 2011	N/A	Feb 2011
Milestone C	Dec 2010	Jan 2012	N/A	Jan 2012
IOC	Oct 2007	Jan 2014	N/A	Apr 2014
Total Cost (TY $M)	1211.7	37438.8	N/A	28900.7
Total Quantity	2	55	N/A	40
PAUC	605.850	680.705	N/A	722.518

Cost Variance

Summary TY $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Development Estimate)	3481.7	33720.5	236.6	37438.8
Previous Changes				
Economic	+27.9	+2562.9	+6.8	+2597.6
Quantity	--	-16427.6	--	-16427.6
Schedule	-108.9	+738.2	-17.5	+611.8
Engineering	--	+157.8	--	+157.8
Estimating	-247.0	-2317.2	+28.1	-2536.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-328.0	-15285.9	+17.4	-15596.5
Current Changes				
Economic	-3.6	+26.9	-1.6	+21.7
Quantity	--	+6414.3	--	+6414.3
Schedule	--	+496.1	--	+496.1
Engineering	+576.6	+1469.6	--	+2046.2
Estimating	-64.1	-1870.9	+15.1	-1919.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+508.9	+6536.0	+13.5	+7058.4
Adjustments	--	--	--	--
Total Changes	+180.9	-8749.9	+30.9	-8538.1
Current Estimate	3662.6	24970.6	267.5	28900.7

Summary BY 2010 $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Development Estimate)	3433.3	28369.2	208.5	32011.0
Previous Changes				
Economic	--	--	--	--
Quantity	--	-11562.5	--	-11562.5
Schedule	-75.8	+574.5	-12.5	+486.2
Engineering	--	+133.6	--	+133.6
Estimating	-213.8	-1859.1	+17.8	-2055.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-289.6	-12713.5	+5.3	-12997.8
Current Changes				
Economic	--	--	--	--
Quantity	--	+4533.8	--	+4533.8
Schedule	--	+296.0	--	+296.0
Engineering	+471.4	+1062.5	--	+1533.9
Estimating	-50.6	-1417.8	+10.3	-1458.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+420.8	+4474.5	+10.3	+4905.6
Adjustments	--	--	--	--
Total Changes	+131.2	-8239.0	+15.6	-8092.2
Current Estimate	3564.5	20130.2	224.1	23918.8

Previous Estimate: December 2014

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-3.6
Increased cost due to engineering support, test and evaluation, and training development requirements in support of Frigate related design enhancements (FY 2016 - FY 2027). (Engineering)	+471.4	+576.6
Revised estimate for LCS test and evaluation, engineering support, and training development requirements (FY 2010 - FY 2021). (Estimating)	-55.2	-69.1
Congressional addition in FY 2016 for LCS Training Courseware. (Estimating)	+13.5	+15.0
Congressional reduction in FY 2016 to test and evaluation, system of systems engineering development, and support. (Estimating)	-10.8	-12.0
Adjustment for current and prior escalation. (Estimating)	+1.9	+2.0
RDT&E Subtotal	+420.8	+508.9

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+26.9
Quantity variance resulting from an increase of 8 ships from 30 to 38. (Subtotal)	+3467.8	+4873.8
Quantity variance resulting from an increase of 8 ship from 30 to 38. (Quantity)	(+4186.1)	(+5884.0)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+296.0)	(+416.3)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(+63.2)	(+88.8)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(-1077.5)	(-1515.3)
Additional Quantity variance resulting from increased outfitting and post-delivery requirements (FY 2024 - FY 2029). (Quantity)	+347.7	+530.3
Stretch-out of procurement buy profile from FY 2018 to FY 2021. (Schedule)	0.0	+79.8
Revised estimate for current acquisition strategy and procurement profile (FY 2017 - FY 2025). (Estimating) (QR)	+229.0	+269.7
Increased cost due to incorporation of Frigate related enhancements to LCS baseline (FY 2021 - FY 2025). (Engineering) (QR)	+714.9	+1004.3
Increased cost due to incorporation of Frigate related enhancements to LCS baseline (FY 2019 - FY 2021). (Engineering)	+284.4	+376.5
Revised estimate for realignment of Other Procurement, Navy design enhancements in LCS baseline (FY 2017 - FY 2020). (Estimating)	-10.3	-12.3
Congressional reduction in FY 2016 deferring habitability and safety modifications. (Estimating)	-8.1	-9.1
Revised estimate to reflect LCS actuals. (Estimating)	-223.9	-175.3
Revised estimate for proper pricing of outfitting and post-delivery requirements (FY 2017 - FY 2026). (Estimating)	-415.1	-545.6
Revised estimate for proper pricing of additional trainer and battle spare requirements (FY 2022 - FY 2025). (Estimating)	+89.6	+117.6
Revised estimate for proper pricing of LCS trainer and battle spare requirements (FY 2014, FY 2016 - FY 2021). (Estimating)	+16.5	+20.4
Adjustment for current and prior escalation. (Estimating)	-18.0	-21.0
Procurement Subtotal	+4474.5	+6536.0

(QR) Quantity Related

MILCON	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-1.6
Revised estimate for proper pricing of MILCON requirements (FY 2015, FY 2021 - FY 2022). (Estimating)	+9.6	+14.4
Adjustment for current and prior escalation. (Estimating)	+0.7	+0.7
MILCON Subtotal	+10.3	+13.5

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: Construction - LCS 5
Contractor: Lockheed Martin
Contractor Location: 2323 Eastern Boulevard
Middle River, MD 21220
Contract Number: N00024-11-C-2300/1
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: December 29, 2010
Definitization Date: December 29, 2010

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
436.8	498.1	1			1		

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (10/25/2015)		
Previous Cumulative Variances		
Net Change		

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to inefficiencies during the test and trials phase of ship construction.

The favorable net change in the schedule variance is due to completion of work scope in advance of trials and delivery.

Notes

USS MILWAUKEE (LCS 5) was delivered to the Navy on October 16, 2015.

Upon ship delivery the earned value (CPR) requirement is modified. The October 2015 report is the most recent CPR.

Current Contract Price ($M), Estimated Price at Completion ($M) and Cost and Schedule variance for this contract is For Official Use Only - Exempt from FOIA release under 5 U.S.C 552(b)(4).

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: Procurement

Contract Name: Construction - LCS 6

Contractor: Austal USA

Contractor Location: 1 Dunlap Drive
Mobile, AL 36602

Contract Number: N00024-11-C-2301/1

Contract Type: Fixed Price Incentive(Firm Target) (FPIF)

Award Date: December 29, 2010

Definitization Date: December 29, 2010

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
432.0	480.4	1			1		

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date		
Previous Cumulative Variances		
Net Change		

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to inefficiencies in the test and trial phase of ship construction.

The favorable net change in the schedule variance is due to completion of scope in advance of trials and delivery.

Notes

USS JACKSON (LCS 6) was delivered to the Navy on August 11, 2015.

Upon delivery the earned value (CPR) requirement is modified. The October 2015 report is the most recent CPR.

Current Contract Price ($M), Estimated Price at Completion ($M) and Cost and Schedule Variance for this contract is For Official Use Only - Exempt from FOIA release under 5 U.S.C. 552(b)(4).

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: Procurement
Contract Name: Construction - LCS 7
Contractor: Lockheed Martin
Contractor Location: 2323 Eastern Boulevard
Middle River, MD 21220
Contract Number: N00024-11-C-2300/2
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 17, 2011
Definitization Date: March 17, 2011

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
376.6	430.4	1			1		

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/27/2015)		
Previous Cumulative Variances		
Net Change		

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to inefficiencies during the system completion and test phase of ship construction.

The favorable net change in the schedule variance is due to completion of work scope in advance of trials.

Notes

Award date corrected from December 2014 SAR.

Current Contract Price ($M), Estimated Price at Completion ($M) and Cost and Schedule Variance for this contract is For Official Use Only - Exempt from FOIA release under 5 U.S.C. 552(b)(4).

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: Procurement
Contract Name: Construction - LCS 8
Contractor: Austal USA
Contractor Location: 1 Dunlap Drive
Mobile, AL 36602
Contract Number: N00024-11-C-2301/2
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 17, 2011
Definitization Date: March 17, 2011

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
368.6	405.7	1			1		

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2015)		
Previous Cumulative Variances		
Net Change		

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to inefficiencies during the system completion and test phase of ship construction.

The unfavorable net change in the schedule variance is due to inefficiencies during the system completion and test phase of ship construction

Notes

Current Contract Price ($M), Estimated Price at Completion ($M) and Cost and Schedule Variance for this contract is For Official Use Only - Exempt from FOIA release under 5 U.S.C. 552(b)(4).

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: Procurement
Contract Name: Construction - LCS 9
Contractor: Lockheed Martin
Contractor Location: 2323 Eastern Boulevard
Middle River, MD 21220
Contract Number: N00024-11-C-2300/3
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 16, 2012
Definitization Date: March 16, 2012

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
363.6	416.2	1			1		

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/27/2015)		
Previous Cumulative Variances		
Net Change		

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to inefficiencies in the production completion and test phase of construction.

The favorable net change in the schedule variance is due to increased manning levels to support launch and the production completion phase of ship construction.

Notes

Current Contract Price ($M), Estimated Price at Completion ($M) and Cost and Schedule Variance for this contract is For Official Use Only - Exempt from FOIA release under 5 U.S.C. 552(b)(4).

Contract Identification

Appropriation: Procurement

Contract Name: Construction - LCS 10

Contractor: Austal USA

Contractor Location: 1 Dunlap Drive
Mobile, AL 36610-1703

Contract Number: N00024-11-C-2301/3

Contract Type: Fixed Price Incentive(Firm Target) (FPIF)

Award Date: March 16, 2012

Definitization Date: March 16, 2012

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
348.8	383.7	1			1		

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date		
Previous Cumulative Variances		
Net Change		

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to inefficiencies in the production completion and test phase of construction.

The unfavorable net change in the schedule variance is due to reduced manning levels in the production completion and test phase of construction.

Notes

Current Contract Price ($M), Estimated Price at Completion ($M) and Cost and Schedule Variance for this contract is For Official Use Only - Exempt from FOIA release under 5 U.S.C. 552(b)(4).

This contract is more than 90% complete; therefore, this is the final report for this contract.

Deliveries and Expenditures

Deliveries				
Delivered to Date	**Planned to Date**	**Actual to Date**	**Total Quantity**	**Percent Delivered**
Development	2	2	2	100.00%
Production	5	4	38	10.53%
Total Program Quantity Delivered	7	6	40	15.00%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	28900.7	Years Appropriated	14
Expended to Date	9508.5	Percent Years Appropriated	51.85%
Percent Expended	32.90%	Appropriated to Date	15540.3
Total Funding Years	27	Percent Appropriated	53.77%

The above data is current as of February 04, 2016.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	January 01, 2016
Source of Estimate:	POE
Quantity to Sustain:	40
Unit of Measure:	Ship
Service Life per Unit:	25.00 Years
Fiscal Years in Service:	FY 2009 - FY 2053

Costs are incurred in preparation for and after the fielding of each LCS Seaframe. O&S cost estimate assumes:

a) Crews:
44 LCS crews: 50 personnel (8 Officers, 42 Enlisted)
17 Frigate crews: 100 personnel (12 Officers, 88 Enlisted)

b) Steaming hours underway/not underway:
LCS - 4421 underway/718 not underway
Frigate - 4583 underway/273 not underway

c) Defense Logistics Agency Acquisition Price of Fuel (CY 2010) $112.56/barrel

d) Government Furnished Equipment and Contractor Furnished Equipment systems are based on the configuration decisions made during ship design and construction

e) Reflects 29 LCS and 11 Frigate program consistent with PB 2017

Sustainment Strategy

The PEO LCS Fleet Introduction and Sustainment branch is responsible for the operation, maintenance, and support of the LCS Seaframe systems.

Sustainment execution includes maintenance execution planning, planned and emergent maintenance; planning for scheduled availabilities, facilities maintenance; fly-away support; modernization and engineering support services of LCS ships homeported in San Diego, California, Mayport, Florida, and deploying worldwide. Full transition to In-Service sustainment under a Product Support Plan will occur in FY 2016.

Antecedent Information

The LCS Seaframe program does not have an antecedent system. LCS was envisioned to fill a role in operations satisfying identified capability gaps. The LCS Seaframe fills a void where no system exists.

LCS is a focused-mission, modular, surface combatant. LCS is smaller than a Frigate (FFG) but larger than a Patrol Costal (PC) ship or Mine Countermeasures (MCM) ship. A LCS Seaframe with an embarked Mission Package (MP) allows the Navy to conduct most missions currently performed by a PC, MCM, or FFG, dependent on which MP is embarked. While parts of each of these platforms are potentially analogous, none are truly comparable.

LCS are minimally manned, and shore support is required to manage some functions traditionally assigned to ship's

force. Shore personnel are required to support LCS administrative functions, supply support, training, and ship specific preventive maintenance. Additionally, the LCS concept of operations and fleet requirements call for greater deployed time than other ship classes, allowed by rotational crewing. While the LCS provides the Fleet some of the capabilities currently provided by the FFG, PC and MCM classes; the LCS Seaframe cannot be compared to any one class discretely.

Today, the LCS Seaframe plus one embarked MP is designed to enhance the Fleet's current anti-submarine capabilities, exceed current Fleet MCM capabilities, and fulfill current surface warfare capability gaps. The associated mission capabilities provided by the MPs are managed and reported by other program offices. As an example; for the MCM MP, the separate reportable programs would include: Remote Minehunting System, unmanned aerial and underwater vehicles, airborne laser mine detection, mine neutralization systems, MH-60S, various support equipment, and crew detachments.

The LCS Seaframe's organic mission capability cannot be directly compared on a cost by cost basis to any other current ship program due to operational and mission capability differences as well as how costs are captured and reported.

Annual O&S Costs BY2010 $M		
Cost Element	**LCS Average Annual Cost Per Ship**	**No Antecedent (Antecedent)**
Unit-Level Manpower	10.783	--
Unit Operations	9.990	--
Maintenance	17.814	--
Sustaining Support	5.052	--
Continuing System Improvements	6.516	--
Indirect Support	5.151	--
Other	--	--
Total	55.306	--

Unitized cost estimate reflects the weighted average for a 40 ship (29 LCS / 11 Frigate) program.

Item	Total O&S Cost $M			
	LCS			No Antecedent (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	50479.0	55526.9	55305.7	0.0
Then Year	87089.3	N/A	82435.5	N/A

Disposal Cost is included in the Operating and Support Cost of the current APB objective and threshold for this program.

Current Development APB is for 55 LCS. The O&S cost estimate reflects the current estimate for a 40 ship (29 LCS / 11 Frigate) program.

Equation to Translate Annual Cost to Total Cost

Total O&S Cost = Average Annual Cost per Ship * Number of Ships * Service Life per Ship
Total O&S Cost = $55.306M * 40 * 25 = $55,306M
Average annual cost per ship is a weighted average of the O&S costs for the LCS and Frigate.

O&S Cost Variance		
Category	**BY 2010 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2015 SAR	39796.0	
Programmatic/Planning Factors	15696.4	Updated Ship Building Profile; based on Revised Quantity; Production Schedule; Updated Crew Phasing Profile; Increased Ship Capabilities
Cost Estimating Methodology	0.0	
Cost Data Update	-1059.9	Updated Visibility And Management of Operating and Support Costs, Manpower cost Estimating Tool for Enhanced Online Reporting, Space and Naval Warfare Systems Command data
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	873.2	Updated OPNAV 4700 and updated Other Restricted Availability/Technical Availability, Emergent Restricted Availability/Technical Availability, and 2S COG requirements
Other	0.0	
Total Changes	15509.7	
Current Estimate	55305.7	

Disposal Estimate Details

Date of Estimate: January 01, 2016

Source of Estimate: POE

Disposal/Demilitarization Total Cost (BY 2010 $M): Total costs for disposal of all Ship are 152.1

The disposal cost increase for the program is driven by the quantity increase of eleven Frigates from the 2014 SAR, a reduction of three LCS, and higher disposal cost for the Frigate. The increased Frigate disposal cost is driven by increased organic capability.