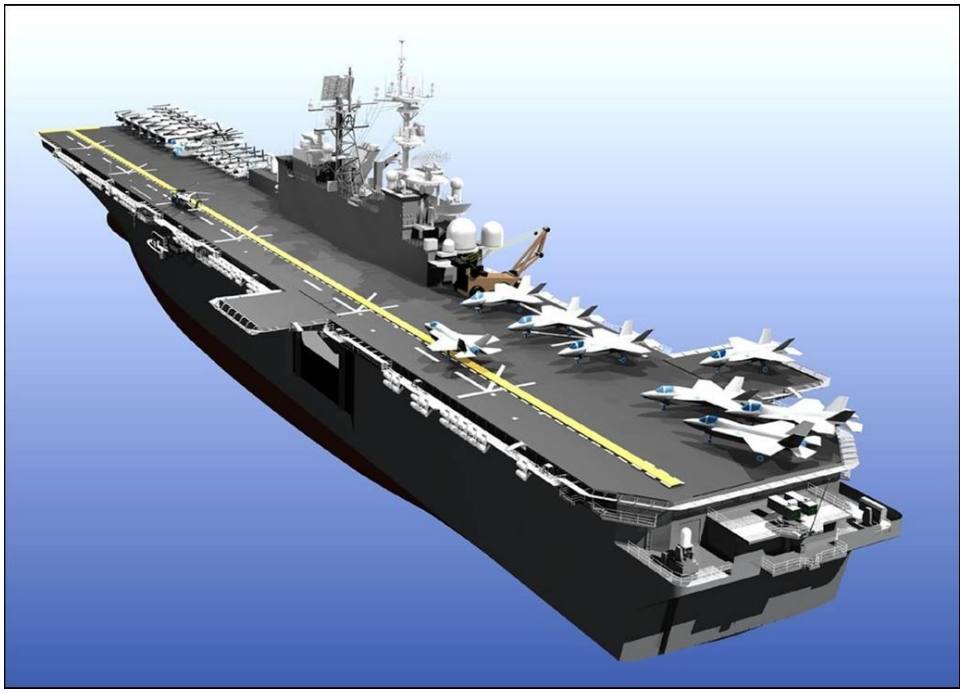
Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-333



LHA 6 America Class Amphibious Assault Ship (LHA 6)

As of FY 2016 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

LHA 6 America Class Amphibious Assault Ship (LHA 6)

DoD Component

Navy

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Date Assigned: May 21, 2010

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated January 12, 2006

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated May 8, 2012

Mission and Description

The LHA Replacement (LHA (R)) Program is planned to replace existing LHA 1 Class Amphibious Assault Ships, which reach the end of their extended service lives between 2011 and 2015.

The LHA (R) will be the key platform in the Expeditionary Strike Group (ESG)/Amphibious Ready Group (ARG) of the future and will provide the Joint Force Commander options to project expeditionary power. The LHA 6 America Class, the first ship of the LHA (R) Program, will embark and support all of the Short Take-off Vertical Landing (STOVL) and Vertical Take-off Landing Marine expeditionary aviation assets in the ESG/ARG, including the MV-22 and the F-35B, the STOVL model of the Joint Strike Fighter. The LHA 6 America Class is an LHD 8 gas turbine variant with enhanced aviation capability. The Flight 0 ship will embark over 1,600 Marines and transport them and their equipment ashore by rotary-wing aircraft when the situation requires. The Flight I ship maintains an aviation centric capability with the addition of a well deck that will accommodate two Landing Craft, Air Cushion. The Flight I ship will embark over 1,400 Marines and transport them and their equipment ashore by rotary-wing or surface connector.

Executive Summary

The LHA (R) program has completed a successful year, delivering LHA 6 (AMERICA) to the fleet, sustaining production on LHA 7 (TRIPOLI), and continuing early industry involvement for LHA 8. On April 10, 2014 Huntington Ingalls (HII) successfully delivered the LHA 6 to the Navy, marking the completion of the first ship in the LHA (R) program. The ship completed its post-delivery availability efforts on July 10, 2014 and commenced transit to her homeport of San Diego on July 11, 2014. During the transit, the LHA 6 traveled 15,300 miles on their journey around South America. Port visits included Colombia, Guantanamo Bay, Cuba, Brazil, and Peru. Various exercises and operations with foreign navies helped to bolster cooperative maritime security and partnerships. Additional training evolutions throughout the transit strengthened the crew's readiness and understanding of the ship's systems and capabilities. LHA 6 arrived in San Diego on September 15, 2014. The commissioning ceremony took place in San Francisco on October 11, 2014 and the ship's Fitting Out Availability completed on December 12, 2014.

The Post Delivery Test and Trails phase is now underway with events such as Acoustic Trials, Combat System Ship Qualification Trials, and Final Contract Trials (FCT) scheduled to complete in April 2015. Following FCT the ship will enter a Post Shakedown Availability period for correction of deficiencies identified during trials and other modifications required to prepare for deployment. Among these modifications are several changes necessary to accommodate the F-35B Joint Strike Fighter, which were not fully defined in time to cost-effectively incorporate into the ship prior to delivery. The heat of the F-35B exhaust requires strengthening the flight deck in the landing areas and shielding systems located at the flight deck edge and relocating some ship self-defense and Command, Control, Communications, Computers and Intelligence systems. These relocation and heating issues are not specific to LHA 6.

The next ship of the AMERICA Class is the LHA 7, a repeat of the LHA 6 design configuration with fact of life updates for equipment obsolescence. LHA 7 began sustained production on July 15, 2013 and the Keel Laying Ceremony was held on June 20, 2014. A contract modification was awarded in October 2014 to incorporate flight deck strengthening and other design changes necessary for the F-35B as part of the initial production rather than after delivery as discussed on LHA 6 above. This contract modification includes a six month schedule extension, with a revised delivery date of December 4, 2018, and an increase of $39.9M in contract target price.

Configuration and requirements for LHA (R) Flight 1 (LHA 8) were studied under the direction of a 3-Star Board of Directors that included the Assistant Secretary of the Navy (Research, Development and Acquisition), Naval Sea Systems Command, Office of the Chief of Naval Operations, and Marine Corps Combat Development Command. LHA 8 will be designed with a two Landing Craft, Air Cushion well deck and a reduced island. The FY 2016 PB includes funding for Advanced Procurement in FY 2015 and FY 2016, with the construction funding following in FY 2017 and FY 2018. The revised LHA (R) CDD was approved on February 26, 2014 to include Flight 1 requirements. Contracts for early industry involvement, for planning and design development of the ship to include initiatives that will garner potential acquisition and life cycle cost savings, were awarded to National Steel and Shipbuilding Company (General Dynamics) and HII in November 2012. The contracts were modified in February 2014 to add Congressional plus-up funding for more in-depth Affordability Design initiatives. These efforts will complete in May FY 2015.

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

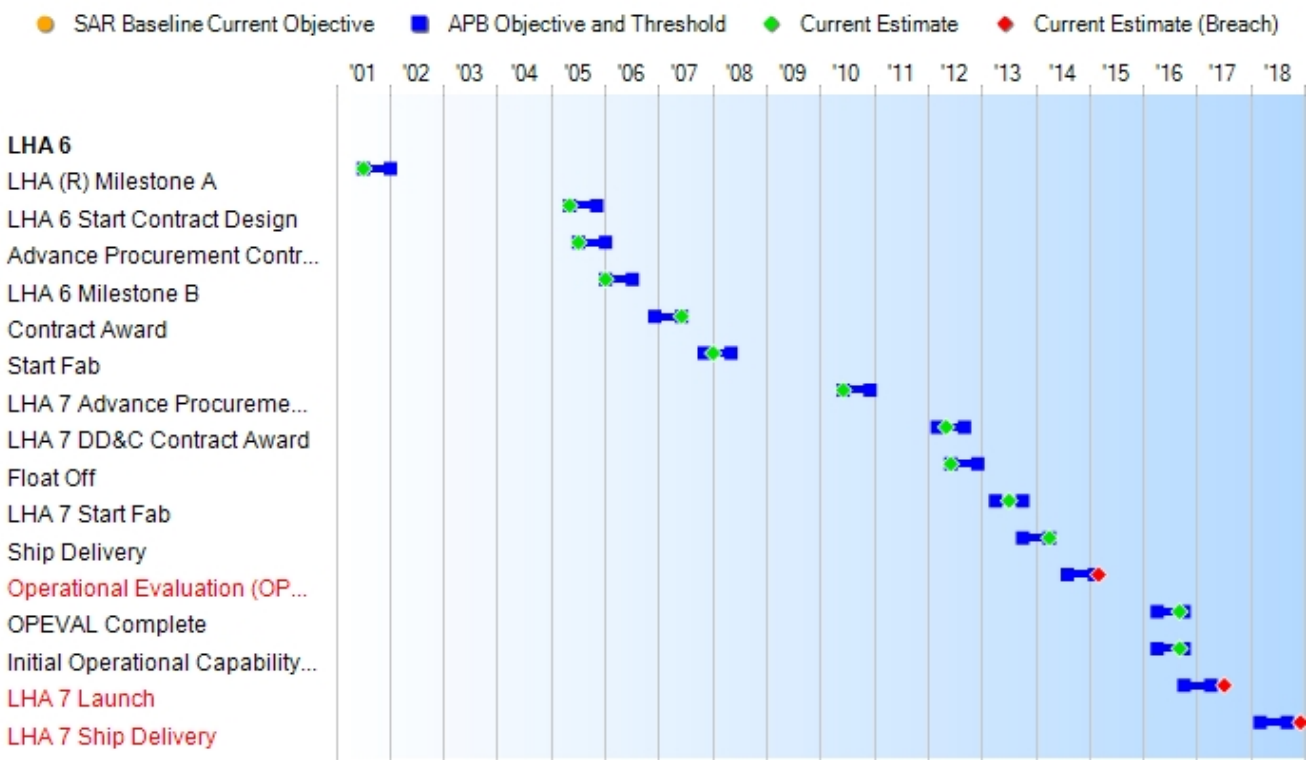
Explanation of Breach

Cost breaches first reported in the December 2009 and December 2010 SARs.

The Current Estimate reflects FY 2016 PB funding for all appropriations for the LHA 6, LHA 7 and LHA 8. The inclusion of the LHA 8 funding is driving the cost breach to the APB, which contains only the LHA 6 and LHA 7. The funding identified for LHA 6 and LHA 7 alone does not constitute a cost breach for RDT&E, Procurement and Acquisition O&M to the APB threshold. APB will be updated to include LHA 8.

Breaches to the schedule are driven by the definitization of the Joint Strike Fighter modification. This included a six month schedule extension to the delivery. The ship delivery milestone has been updated to reflect contract target dates.

Schedule


SAR Baseline Current Objective
APB Objective and Threshold
Current Estimate
Current Estimate (Breach)
'01
'02
'03
'04
'05
'06
'07
'08
'09
'10
'11
'12
'13
'14
'15
'16
'17
'18
LHA 6
LHA (R) Milestone A
LHA 6 Start Contract Design
Advance Procurement Contr...
LHA 6 Milestone B
Contract Award
Start Fab
LHA 7 Advance Procureme...
LHA 7 DD&C Contract Award
Float Off
LHA 7 Start Fab
Ship Delivery
Operational Evaluation (OP...
OPEVAL Complete
Initial Operational Capability...
LHA 7 Launch
LHA 7 Ship Delivery

Schedule Events					
Events	**SAR Baseline Development Estimate**	**Current APB Development Objective/Threshold**		**Current Estimate**	
LHA (R) Milestone A	Jul 2001	Jul 2001	Jan 2002	Jul 2001	
LHA 6 Start Contract Design	May 2005	May 2005	Nov 2005	May 2005	
Advance Procurement Contract	Jul 2005	Jul 2005	Jan 2006	Jul 2005	
LHA 6 Milestone B	Jan 2006	Jan 2006	Jul 2006	Jan 2006	
Contract Award	Dec 2006	Dec 2006	Jun 2007	Jun 2007	
Start Fab	Nov 2007	Nov 2007	May 2008	Jan 2008	
LHA 7 Advance Procurement Contract Award	N/A	Jun 2010	Dec 2010	Jun 2010	
LHA 7 DD&C Contract Award	N/A	Mar 2012	Sep 2012	May 2012	
Float Off	Aug 2010	Jun 2012	Dec 2012	Jun 2012	
LHA 7 Start Fab	N/A	Apr 2013	Oct 2013	Jul 2013	
Ship Delivery	Dec 2011	Oct 2013	Apr 2014	Apr 2014	
Operational Evaluation (OPEVAL) Start	Aug 2012	Aug 2014	Feb 2015	**Mar 2015**[1]	(Ch-1)
OPEVAL Complete	Sep 2013	Apr 2016	Oct 2016	Sep 2016	
Initial Operational Capability (IOC)	Sep 2013	Apr 2016	Oct 2016	Sep 2016	
LHA 7 Launch	N/A	Oct 2016	Apr 2017	**Jul 2017**[1]	(Ch-2)
LHA 7 Ship Delivery	N/A	Mar 2018	Sep 2018	**Dec 2018**[1]	(Ch-3)

[1] *APB Breach*

Change Explanations

(Ch-1) The current estimate for the OPEVAL Start changed from June 2014 to March 2015. The delay is due to the six month shift in delivery for LHA 6, which delivered in April 2014.
(Ch-2) The current estimate for the LHA 7 Launch was delayed from October 2016 to July 2017. The delay is driven by the definitization of the Joint Strike Fighter (JSF) modification. This included a six month schedule extension to the delivery. The launch milestone has been updated to reflect contract target dates.
(Ch-3) The current estimate for the LHA 7 Ship Delivery was delayed from June 2018 to December 2018. The delay is driven by the definitization of the JSF modification. This included a six month schedule extension to the delivery. The ship delivery milestone has been updated to reflect contract target dates.

Acronyms and Abbreviations

DD&C - Detail Design and Construction
Fab - Fabrication

Performance

Performance Characteristics					
SAR Baseline Development Estimate	**Current APB Development Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**	
Net Ready					
100% of interfaces; services; policy-enforcement controls; and data correctness, availability and processing requirements in the joint integrated architecture	100% of interfaces; services; policy-enforcement controls; and data correctness, availability and processing requirements in the joint integrated architecture	100% of interfaces; services; policy-enforcement controls; and data correctness, availability and processing requirements designated as enterprise level or critical in the joint integrated architecture	TBD	100% of interfaces; services; policy-enforcement controls; and data correctness, availability and processing requirements designated as enterprise level or critical in the joint integrated architecture	
Vertical Take Off and Landing land/launch spots					
9 CH-53E/MV-22	9 CH-53E/MV-22	9 CH-53E/MV-22	TBD	9 CH-53E/MV-22	
F-35B capacity					
23 Aircraft	23 Aircraft	20 Aircraft	TBD	23 Aircraft	
Aviation operations					
6 Spots 12 hrs/day (Sustained) 6 Spots 24 hrs/day for six consecutive days (Surge)	6 Spots 12 hrs/day (Sustained) 6 Spots 24 hrs/day for six consecutive days (Surge)	6 Spots 12 hrs/day (Sustained) 6 Spots 24 hrs/day for six consecutive days (Surge)	TBD	6 spots 10 hours/day 12 hours/day of flight quarters to support 10 hours/day of flight operations	(Ch-1)
Vehicle space					
12,000 sq. ft.	12,000 sq. ft.	10,000 sq. ft.	TBD	11,760 sq. ft.	
Total manpower (includes ship's force and all embarked elements such as troops, staffs, detachments, etc.)					
2,891 Persons	2,891 Persons	2,891 Persons	TBD	2,831 Persons	(Ch-2)
Cargo space					
160,000 cu. ft.	160,000 cu. ft.	130,000 cu. ft.	TBD	160,000 cu. ft.	
Troop accomodations					
1,686 Persons	1,686 Persons	1,626 Persons	TBD	1,686 Persons	
Survivability: Navy Survivability Policy for Surface Ships					
Equals threshold,	Equals threshold,	Level II per OPNAV-	TBD	Equals threshold,	

implement recommendat-ions of the NAVSEA USS COLE Survivability Review Group Phase II Analysis Report of Amphibious Ships, April 2003	implement recommendat-ions of the NAVSEA COLE Survivability Review Group Phase II Analysis Report of Amphibious Ships, April 2003	INST 9070.1 of September 23, 1988 (LHA(R) cargo magazine protection as stated in para. 6.b.17 of the CDD		implement recommend-ations of the NAVSEA COLE Survivability Review Group Phase II Analysis Report of Amphibious Ships, April 2003
Force Protection: Collective Protection System (CPS)				
Expanded CBR protection that provides a toxic-free environment (where it is not necessary to wear protective clothing or masks) for 40% of crew in berthing, messing, sanitary, and battle dressing facilities as well as key operational spaces that can be affordably integrated into ship design	Expanded CBR protection that provides a toxic-free environment (where it is not necessary to wear protective clothing or masks) for 40% of crew in berthing, messing, sanitary, and battle dressing facilities as well as key operational spaces that can be affordably integrated into ship design	CBR protection that provides a toxic-free environment (where it is not necessary to wear protective clothing or masks) for 40% of crew in berthing, messing, sanitary, and battle dressing facilities	TBD	CBR protection that provides a toxic-free environment (where it is not necessary to wear protective clothing or masks) for 40% of crew in berthing, messing, sanitary, and battle dressing facilities
Force Protection: Decontamination Stations				
Four decontaminat-ion stations (two CPS, one casualty, and one conventional) providing a capability of decontamination an avg of ten people per hr per station	Four decontaminat-ion stations (two CPS, one casualty, and one conventional) providing a capability of decontamination an avg of ten people per hr per station	Four decontaminat-ion stations (two CPS, one casualty, and one conventional) providing a capability of decontamination an avg of ten people per hr per station	TBD	Four decontamina-tion stations (two CPS, one casualty, and one conventional) providing a capability of decontamin-ation an avg of ten people per hr per station

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

Requirements Reference

Capability Development Document (CDD) dated December 17, 2009

Change Explanations

(Ch-1) The PM estimate for aviation operations has changed from 6 Spots 12 hrs/day (Sustained), 6 Spots 24 hrs/day for six consecutive days (Surge), to 6 Spots for 10 hrs/day, which consists of 12 hrs/day of flight quarters to support 10 hrs/day of flight operations. This has changed as a result of the update to the Capabilities Development Document, approved by the Joint Requirement Oversight Council (JROC) on February 26, 2014.
(Ch-2) The PM estimate for total manpower has changed from 2891 to 2831. This has changed as a result of the update to the Capabilities Development Document, approved by the Joint Requirement Oversight Council (JROC) on February 26, 2014.

Acronyms and Abbreviations

avg - average
CBR - Chemical, Biological, and Radiological
CDD - Capability Development Document
cu - cubic
etc. - etcetera
ft. - feet
hrs - hours
INST. - Instruction
NAVSEA - Naval Sea Systems Command
OPNAV - Office of the Chief of Naval Operations
sq. - square

Track to Budget

RDT&E

Appn	BA	PE
Navy	04	0603564N

Project	Name		
0408	Ship Preliminary Design & Feasibility Studies/Ship Development	(Shared)	(Sunk)

Appn	BA	PE
Navy	05	0604567N

Project	Name		
2465	Ship Contract Design/Live Fire T&E		
9235	Ship Contract Design/Live Fire Test & Evaluation/LHA (R) DESIGN	(Shared)	(Sunk)
9236	Ship Contract Design/Live Fire Test & Evaluation/LHA(R) DESIGN	(Shared)	(Sunk)

Procurement

Appn	BA	PE
Navy	03	0204411N

Line Item	Name
3041	LHA Replacement
Notes:	LHA Replacement End Cost

Appn	BA	PE
Navy	05	0204411N

Line Item	Name		
5110	Outfitting	(Shared)	
5300	Completion of Prior Year Shipbuilding Programs	(Shared)	(Sunk)
Notes:	Budget realigned to line item 3041 during year of execution.		

Acq O&M

Appn	BA	PE
Navy	01	0204411N

Project	Name
1C6C	LHA(R) TADTAR

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2006 $M			BY 2006 $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	199.9	240.6	264.7	**376.6**[1]	197.5	239.9	400.4
Procurement	2677.5	5420.9	5963.0	**8029.6**[1]	2896.0	6563.4	10534.1
Flyaway	--	--	--	8029.6	--	--	10534.1
Recurring	--	--	--	8029.6	--	--	10534.1
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	1.6	1.8	**2.0**[1]	0.0	1.6	2.0
Total	2877.4	5663.1	N/A	8408.2	3093.5	6804.9	10936.5

[1] *APB Breach*

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 Acqusition 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.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	0	0	0
Procurement	1	2	3
Total	1	2	3

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2016 President's Budget / December 2014 SAR (TY$ M)									
Appropriation	Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	Total
RDT&E	349.3	10.6	9.5	3.9	7.5	14.5	5.1	0.0	400.4
Procurement	6480.0	61.1	292.7	1543.0	2099.7	40.1	17.5	0.0	10534.1
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.0	2.0
PB 2016 Total	6830.1	71.9	302.4	1547.1	2107.4	54.8	22.8	0.0	10936.5
PB 2015 Total	6833.6	71.9	305.0	1593.7	2393.8	32.6	0.0	0.0	11230.6
Delta	-3.5	0.0	-2.6	-46.6	-286.4	22.2	22.8	0.0	-294.1

Quantity Summary										
FY 2016 President's Budget / December 2014 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	2	0	0	1	0	0	0	0	3
PB 2016 Total	0	2	0	0	1	0	0	0	0	3
PB 2015 Total	0	2	0	0	1	0	0	0	0	3
Delta	0	0	0	0	0	0	0	0	0	0

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
2001	--	--	--	--	--	--	15.2
2002	--	--	--	--	--	--	4.9
2003	--	--	--	--	--	--	38.1
2004	--	--	--	--	--	--	52.9
2005	--	--	--	--	--	--	43.0
2006	--	--	--	--	--	--	21.6
2007	--	--	--	--	--	--	12.9
2008	--	--	--	--	--	--	10.9
2009	--	--	--	--	--	--	7.6
2010	--	--	--	--	--	--	8.7
2011	--	--	--	--	--	--	10.0
2012	--	--	--	--	--	--	20.4
2013	--	--	--	--	--	--	24.3
2014	--	--	--	--	--	--	78.8
2015	--	--	--	--	--	--	10.6
2016	--	--	--	--	--	--	9.5
2017	--	--	--	--	--	--	3.9
2018	--	--	--	--	--	--	7.5
2019	--	--	--	--	--	--	14.5
2020	--	--	--	--	--	--	5.1
Subtotal	--	--	--	--	--	--	400.4

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2006 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2001	--	--	--	--	--	--	16.6
2002	--	--	--	--	--	--	5.3
2003	--	--	--	--	--	--	40.7
2004	--	--	--	--	--	--	55.0
2005	--	--	--	--	--	--	43.5
2006	--	--	--	--	--	--	21.2
2007	--	--	--	--	--	--	12.4
2008	--	--	--	--	--	--	10.3
2009	--	--	--	--	--	--	7.1
2010	--	--	--	--	--	--	8.0
2011	--	--	--	--	--	--	8.9
2012	--	--	--	--	--	--	17.9
2013	--	--	--	--	--	--	21.0
2014	--	--	--	--	--	--	67.5
2015	--	--	--	--	--	--	8.9
2016	--	--	--	--	--	--	7.9
2017	--	--	--	--	--	--	3.2
2018	--	--	--	--	--	--	6.0
2019	--	--	--	--	--	--	11.3
2020	--	--	--	--	--	--	3.9
Subtotal	--	--	--	--	--	--	376.6

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
2005	--	149.2	--	--	149.2	--	149.2
2006	--	350.1	--	--	350.1	--	350.1
2007	1	1131.1	--	--	1131.1	--	1131.1
2008	--	1365.8	--	--	1365.8	--	1365.8
2009	--	190.7	--	--	190.7	--	190.7
2010	--	169.5	--	--	169.5	--	169.5
2011	1	937.6	--	--	937.6	--	937.6
2012	--	1942.6	--	--	1942.6	--	1942.6
2013	--	176.6	--	--	176.6	--	176.6
2014	--	66.8	--	--	66.8	--	66.8
2015	--	61.1	--	--	61.1	--	61.1
2016	--	292.7	--	--	292.7	--	292.7
2017	1	1543.0	--	--	1543.0	--	1543.0
2018	--	2099.7	--	--	2099.7	--	2099.7
2019	--	40.1	--	--	40.1	--	40.1
2020	--	17.5	--	--	17.5	--	17.5
Subtotal	3	10534.1	--	--	10534.1	--	10534.1

Annual Funding 1611 | Procurement | Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	BY 2006 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2005	--	141.6	--	--	141.6	--	141.6
2006	--	321.0	--	--	321.0	--	321.0
2007	1	991.6	--	--	991.6	--	991.6
2008	--	1157.8	--	--	1157.8	--	1157.8
2009	--	156.9	--	--	156.9	--	156.9
2010	--	134.8	--	--	134.8	--	134.8
2011	1	722.2	--	--	722.2	--	722.2
2012	--	1464.1	--	--	1464.1	--	1464.1
2013	--	130.6	--	--	130.6	--	130.6
2014	--	48.5	--	--	48.5	--	48.5
2015	--	43.6	--	--	43.6	--	43.6
2016	--	205.0	--	--	205.0	--	205.0
2017	1	1059.9	--	--	1059.9	--	1059.9
2018	--	1414.2	--	--	1414.2	--	1414.2
2019	--	26.5	--	--	26.5	--	26.5
2020	--	11.3	--	--	11.3	--	11.3
Subtotal	3	8029.6	--	--	8029.6	--	8029.6

Cost Quantity Information 1611 | Procurement | Shipbuilding and Conversion, Navy		
Fiscal Year	**Quantity**	**End Item Recurring Flyaway (Aligned With Quantity) BY 2006 $M**
2005	--	--
2006	--	--
2007	1	2836.2
2008	--	--
2009	--	--
2010	--	--
2011	1	2525.6
2012	--	--
2013	--	--
2014	--	--
2015	--	--
2016	--	--
2017	1	2667.8
2018	--	--
2019	--	--
2020	--	--
Subtotal	3	8029.6

Annual Funding 1804 | Acq O&M | Operation and Maintenance, Navy	
Fiscal Year	**TY $M** **Total Program**
2010	0.2
2011	0.2
2012	0.2
2013	0.1
2014	0.1
2015	0.2
2016	0.2
2017	0.2
2018	0.2
2019	0.2
2020	0.2
Subtotal	2.0

Annual Funding 1804 | Acq O&M | Operation and Maintenance, Navy	
Fiscal Year	**BY 2006 $M**
	Total Program
2010	0.2
2011	0.2
2012	0.2
2013	0.1
2014	0.1
2015	0.2
2016	0.2
2017	0.2
2018	0.2
2019	0.2
2020	0.2
Subtotal	2.0

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	2/14/2006	5/8/2012
Approved Quantity	1	2
Reference	LHA(R)/LHA 6 Milestone B ADM	LHA(R)/LHA 6/LHA 7 Milestone B ADM
Start Year	2007	2007
End Year	2013	2018

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the ADM dated February 14, 2006, which approved one ship, which is standard for shipbuilding programs.

An additional ADM authorized a second ship on May 8, 2012.

Foreign Military Sales

None

Nuclear Costs

None

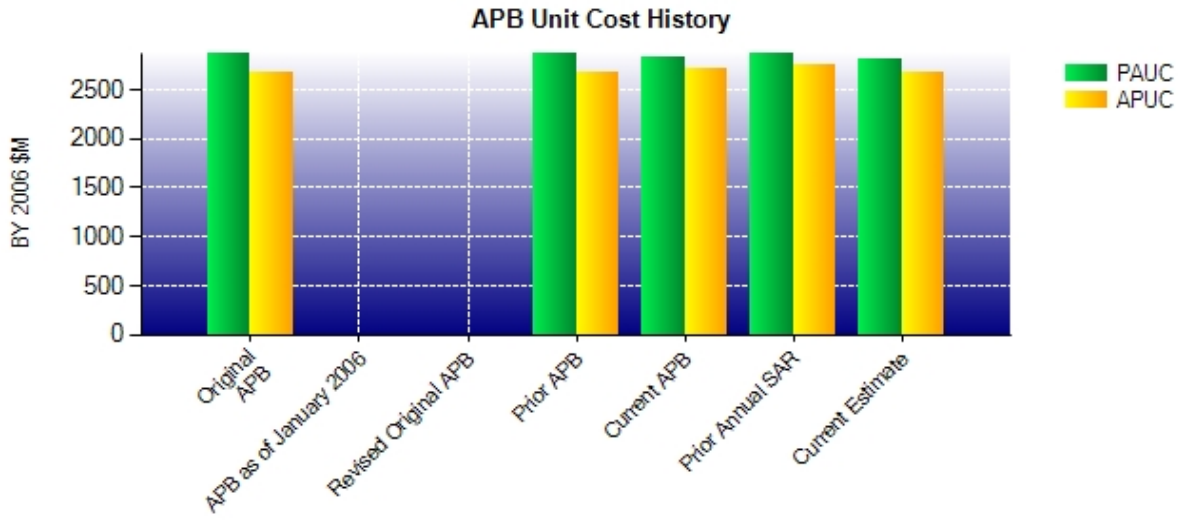
Unit Cost

Unit Cost Report

Item	BY 2006 $M Current UCR Baseline (May 2012 APB)	BY 2006 $M Current Estimate (Dec 2014 SAR)	% Change
Program Acquisition Unit Cost			
Cost	5663.1	8408.2	
Quantity	2	3	
Item	2831.550	2802.733	-1.02
Average Procurement Unit Cost			
Cost	5420.9	8029.6	
Quantity	2	3	
Unit Cost	2710.450	2676.533	-1.25

Item	BY 2006 $M Original UCR Baseline (Jan 2006 APB)	BY 2006 $M Current Estimate (Dec 2014 SAR)	% Change
Program Acquisition Unit Cost			
Cost	2877.4	8408.2	
Quantity	1	3	
Unit Cost	2877.400	2802.733	-2.59
Average Procurement Unit Cost			
Cost	2677.5	8029.6	
Quantity	1	3	
Unit Cost	2677.500	2676.533	-0.04

Unit Cost History



Item	Date	BY 2006 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Jan 2006	2877.400	2677.500	3093.500	2896.000
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Jan 2006	2877.400	2677.500	3093.500	2896.000
Current APB	May 2012	2831.550	2710.450	3402.450	3281.700
Prior Annual SAR	Dec 2013	2874.500	2753.133	3743.533	3615.300
Current Estimate	Dec 2014	2802.733	2676.533	3645.500	3511.367

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	
3093.500	267.300	566.566	5.800	19.500	-397.833	90.667	0.000	552.000	3645.500

Current SAR Baseline to Current Estimate (TY $M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2896.000	267.467	698.233	5.800	0.000	-446.800	90.667	0.000	615.367	3511.367

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	Jul 2001	N/A	Jul 2001
Milestone B	N/A	Jan 2006	N/A	Jan 2006
Milestone C	N/A	N/A	N/A	N/A
IOC	N/A	Sep 2013	N/A	Sep 2016
Total Cost (TY $M)	N/A	3093.5	N/A	10936.5
Total Quantity	N/A	1	N/A	3
PAUC	N/A	3093.500	N/A	3645.500

Cost Variance

Summary TY $M					
Item	**RDT&E**	**Procurement**	**MILCON**	**Acq O&M**	**Total**
SAR Baseline (Development Estimate)	197.5	2896.0	--	--	3093.5
Previous Changes					
Economic	+0.3	+777.2	--	--	+777.5
Quantity	--	+7886.7	--	--	+7886.7
Schedule	--	+17.4	--	--	+17.4
Engineering	+50.0	--	--	--	+50.0
Estimating	+135.1	-1003.4	--	+1.8	-866.5
Other	--	+272.0	--	--	+272.0
Support	--	--	--	--	--
Subtotal	+185.4	+7949.9	--	+1.8	+8137.1
Current Changes					
Economic	-0.8	+25.2	--	--	+24.4
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	+8.5	--	--	--	+8.5
Estimating	+9.8	-337.0	--	+0.2	-327.0
Other	--	--	--	--	--
Support	--	--	--	--	--
Subtotal	+17.5	-311.8	--	+0.2	-294.1
Total Changes	+202.9	+7638.1	--	+2.0	+7843.0
CE - Cost Variance	400.4	10534.1	--	2.0	10936.5
CE - Cost & Funding	400.4	10534.1	--	2.0	10936.5

Summary BY 2006 $M					
Item	**RDT&E**	**Procurement**	**MILCON**	**Acq O&M**	**Total**
SAR Baseline (Development Estimate)	199.9	2677.5	--	--	2877.4
Previous Changes					
Economic	--	--	--	--	--
Quantity	--	+6142.3	--	--	+6142.3
Schedule	--	-33.3	--	--	-33.3
Engineering	+42.5	--	--	--	+42.5
Estimating	+119.9	-776.8	--	+1.8	-655.1
Other	--	+249.7	--	--	+249.7
Support	--	--	--	--	--
Subtotal	+162.4	+5581.9	--	+1.8	+5746.1
Current Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	+7.0	--	--	--	+7.0
Estimating	+7.3	-229.8	--	+0.2	-222.3
Other	--	--	--	--	--
Support	--	--	--	--	--
Subtotal	+14.3	-229.8	--	+0.2	-215.3
Total Changes	+176.7	+5352.1	--	+2.0	+5530.8
CE - Cost Variance	376.6	8029.6	--	2.0	8408.2
CE - Cost & Funding	376.6	8029.6	--	2.0	8408.2

Previous Estimate: December 2013

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.8
Enterprise Air Search Radar (EASR) Integration. (Engineering)	+7.0	+8.5
Revised estimate for LHA (R) Test and Evaluation requirement for Joint Strike Fighter demonstration in FY2019. (Estimating)	+5.8	+7.5
Navy Working Capital Fund rate adjustments and funding reduction to support Small Business Innovation Research. (Estimating)	+0.9	+1.6
Adjustment for current and prior escalation. (Estimating)	+0.6	+0.7
RDT&E Subtotal	+14.3	+17.5

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+25.2
Revised estimate for LHA (R) Outfitting and Post Delivery requirement. (Estimating)	-7.3	-9.9
Revised estimate for LHA 8 procurement cost due to Service reduction. (Estimating)	-202.6	-300.0
Navy Working Capital Fund adjustments. (Estimating)	-6.9	-10.1
LHA (R) execution adjustment. (Estimating)	-1.0	-1.2
Adjustment for current and prior escalation. (Estimating)	-12.0	-15.8
Procurement Subtotal	-229.8	-311.8

Acq O&M	$M	
Current Change Explanations	Base Year	Then Year
Revised estimate for LHA 8 acquisition requirement. (Estimating)	+0.2	+0.2
Acq O&M Subtotal	+0.2	+0.2

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: LHA 7 Detail Design & Construction Contract (DD&C)
Contractor: Huntington Ingalls Incorporated
Contractor Location: 1000 Access Road
Pascagoula, MS 39567
Contract Number: N00024-10-C-2229
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: June 30, 2010
Definitization Date: May 31, 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
2355.0	2664.9	1	2401.8	2714.1	1	2545.8	2401.8

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the addition of scope for the incorporation of Flight Deck Strengthening and the Joint Strike Fighter modifications. This modification was definitized in October 2014.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/21/2014)	-43.0	-7.4
Previous Cumulative Variances	-8.2	-17.7
Net Change	-34.8	+10.3

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to new labor in the hull department at the yard. A large turnover in senior vessel production management has driven cost growth in the shops and integration areas.

The favorable net change in the schedule variance is due to increased utilization of available labor and capacity throughput availability, which has allowed the contractor to aggressively work the schedule to the left for vessel construction. Additional positive variance is a result of material progress exceeding baseline dates.

Notes

The LHA 7 Advance Procurement Contract and Long Lead Time Material CLIN has been subsumed by the LHA 7 DD&C contract. The Program Manager Estimated Price at Completion (PMEAC) reflects the Current Target Price of the contract. The Program Manager will begin a PMEAC once the contract has reached 20% progress on Vessel hours.

Deliveries and Expenditures

Deliveries				
Delivered to Date	**Planned to Date**	**Actual to Date**	**Total Quantity**	**Percent Delivered**
Development	0	0	0	--
Production	1	1	3	33.33%
Total Program Quantity Delivered	1	1	3	33.33%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	10936.5	Years Appropriated	15
Expended to Date	4336.2	Percent Years Appropriated	75.00%
Percent Expended	39.65%	Appropriated to Date	6902.0
Total Funding Years	20	Percent Appropriated	63.11%

The above data is current as of January 31, 2015.

Total expenditures are representative of LHA 6 and LHA 7.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	April 02, 2012
Source of Estimate:	POE
Quantity to Sustain:	2
Unit of Measure:	Ship
Service Life per Unit:	40.00 Years
Fiscal Years in Service:	FY 2017 - FY 2062

Two ships currently in production, the LHA 6 and LHA 7, will be sustained over a 40 year life cycle. Sustainment requirements for a planned third ship, the LHA 8, are being developed.

The intent is to estimate the normal costs of operating and supporting the ship in typical peacetime operations. Additional costs that might be incurred under wartime operating scenarios are not included. Potential costs of currently unplanned and unknown future upgrades or configuration changes are assumed to occur in the same proportion as modernization work that has occurred on the LHD 1 ship classes. Operating & Support Cost Analysis Model (OSCAM) builds the O&S costs by month, and the results show the estimated cost by year based on the Operational Tempo (OPTEMPO) and maintenance cycle. In order to obtain a per year estimate, the total O&S cost as reported by OSCAM (without disposal costs included) is divided by the 40 year life expectancy. Nominal OPTEMPO is assumed to be 2700 hours steaming underway and 1200 hours steaming not underway, based on the fuel burn rates and time profiles provided by the LHA 6 design team (in section 6.0 of the Cost Analysis Requirements Description).

Sustainment Strategy

The LHA 6 sustainment strategy includes the use of commercial shipyards for depot maintenance in concert with Organizational and Intermediate level maintenance strategies. Existing shore support and infrastructure will be used to the maximum extent possible. Life cycle cost savings are anticipated from fuel savings realized from the propulsion system and Manpower savings expected from operations and maintenance of the Gas Turbine engines.

Antecedent Information

The antecedent system designated for LHA 6 is LHD 1. LHD 1 Unitized O&S Costs (BY 2006 $M) were developed in 2013 and also reflect the Operating and Support Cost Analysis Model (OSCAM) historical average dataset for LHD 1. Visibility & Management of Operating Support Costs data reflects average O&S return data for active ships (LHD1-7) between FY 1992 and FY 2011. Open Architectural Retrieval System Open Architectural Retrieval System 3-M data includes the years FY 2001 through FY 2011. Like the LHA 6 and LHA 7 Unitized O&S Costs, antecedent costs reflect a 40 year life cycle.

Projected manning on LHA 6 and LHA 7 includes approximately 24 fewer officer and 55 fewer enlisted personnel than the average historical manning on LHD 1-7. However, FY 2006 Military Pay Rates utilized to estimate LHA (R) Flight 0 Personnel are approximately 12 percent higher than the average LHD 1-7 historical rates, which were inflated to FY 2006. Therefore, Unit Level Personnel costs do not reflect expected savings due to reduction in crew size. If personnel rates were normalized, the LHA 6 and LHA 7 would show an approximate 10 percent savings when compared to the antecedent class. The discrepancy between historical rates and the FY 2006 set could be driven in part by actual crews being manned with lower ranking personnel than that assumed in the LHA 6 and LHA 7 baseline.

For comparative purposes, the FY 2006 cost per barrel of Diesel Fuel, Marine (DFM) was substituted for the historical average cost of DFM observed in LHD 1 class data. This methodology better aligns LHD 1 historical requirements for Unit Operations with estimated requirements for the LHA 6 and LHA 7.

In line with LHA 6 and LHA 7 Maintenance requirements, antecedent Maintenance costs reflect requirements laid out in the Office of the Chief of Naval Operations 4700 (2011).

The scope of LHD 1 Indirect Support costs, which were first mandated in the OSD, CAPE O&S Cost Estimating Guide (published October 2007), align with LHA 6 and LHA 7 requirements but reflect a larger average historical crew size than that projected for the LHA 6 and LHA 7.

Annual O&S Costs BY2006 $M		
Cost Element	**LHA 6 Average Annual Cost Per Ship**	**LHD 1 (Antecedent) Average Annual Cost Per Ship**
Unit-Level Manpower	65.684	63.895
Unit Operations	11.953	18.246
Maintenance	27.936	33.525
Sustaining Support	4.440	4.873
Continuing System Improvements	7.692	7.376
Indirect Support	27.247	31.094
Other	0.000	0.000
Total	144.952	159.009

Item	Total O&S Cost $M			
	LHA 6			LHD 1 (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	12095.2	13304.7	11596.3	12720.7
Then Year	24951.0	N/A	23788.5	N/A

The intent is to estimate the normal costs of operating and supporting the ship in typical peacetime operations. Additional costs that might be incurred under wartime operating scenarios are not included. Potential costs of currently unplanned and unknown future upgrades or configuration changes are assumed to occur in the same proportion as modernization work that has occurred on the LHD 1 ship classes. OSCAM builds the O&S costs by month, and the results show the estimated cost by year based on the OPTEMPO and maintenance cycle. In order to obtain a per year estimate, the total O&S cost as reported by OSCAM (without disposal costs included) is divided by the 40 year life expectancy. Nominal OPTEMPO is assumed to be 2700 hours steaming underway and 1200 hours steaming not underway, based on the fuel burn rates and time profiles provided by the LHA 6 design team (in section 6.0 of the Cost Analysis Requirements Description).

Equation to Translate Annual Cost to Total Cost

Total O&S Cost = 2 Ships x 40 Service Life x Unitized LHA 6 Cost or LHD 1 Antecedent Cost

O&S Cost Variance		
Category	**BY 2006 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2013 SAR	11596.3	
Programmatic/Planning Factors	0.0	

Cost Estimating Methodology	0.0
Cost Data Update	0.0
Labor Rate	0.0
Energy Rate	0.0
Technical Input	0.0
Other	0.0
Total Changes	0.0
Current Estimate	11596.3

Disposal Estimate Details

Date of Estimate: April 02, 2012

Source of Estimate: POE

Disposal/Demilitarization Total Cost (BY 2006 $M): Total costs for disposal of all Ship are 19.8

The CG class of ship was determined by the Naval Sea Systems Command (NAVSEA) Inactive Ships Program Office (PMS 333) as most comparable to the LHA 7 out of those vessels historically disposed of by NAVSEA. The decision to use the CG class of ships was based upon the comparison of warship compartmentalization, hazardous materials to remove and hull weight, influenced by scrap metal commodity prices.