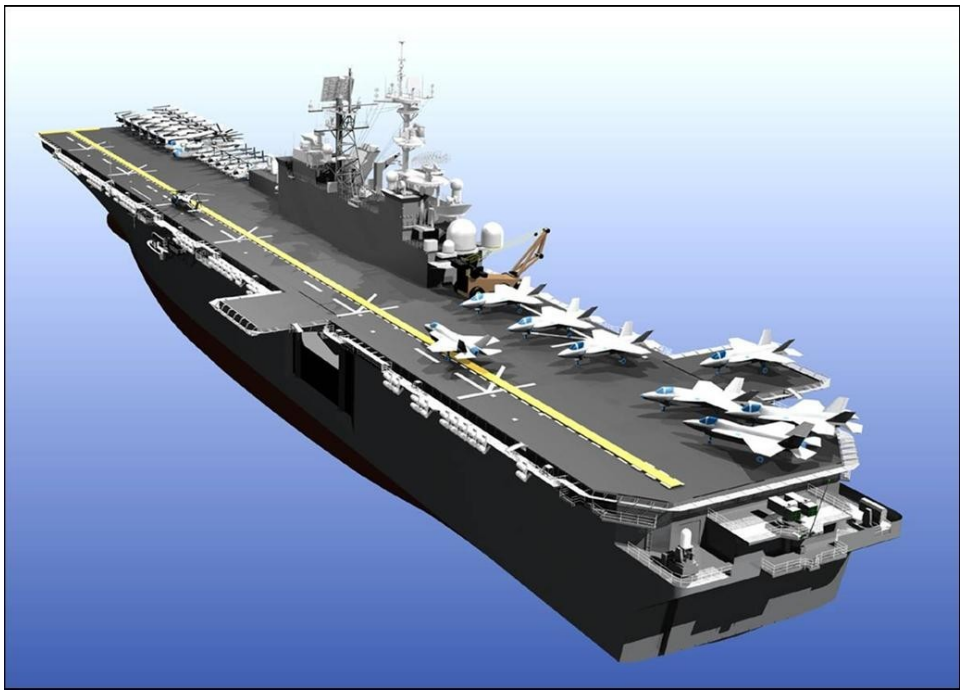
Selected Acquisition Report (SAR)

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



LHA 6 America Class Amphibious Assault Ship (LHA 6)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Program Name

LHA 6 AMERICA CLASS Amphibious Assault Ship (LHA 6)

DoD Component

Navy

Responsible Office

Responsible Office

CAPT Christopher Mercer
Program Executive Office, Ships
Amphibious Warfare Program Office
1333 Isaac Hull Avenue
Washington, DC 20376-2101
christopher.p.mercer@navy.mil

Phone 202-781-0940
Fax 202-781-4596
DSN Phone 326-0940
DSN Fax 326-4596

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 (VTOL) Marine expeditionary aviation assets in the ESG/ARG, including the MV-22 and the F-35B, the STOVL model of the Joint Strike Fighter (JSF). The ship will embark over 1600 Marines and transport them and their equipment ashore by rotary-wing aircraft when the situation requires.

The LHA 6 America Class is an LHD 8 gas turbine variant with enhanced aviation capability.

Executive Summary

During 2012, Ingalls Shipbuilding continued its design and production efforts on LHA 6 (AMERICA). LHA 6 was launched in June 2012 and a christening ceremony was held on October 20, 2012 in the shipyard. Vessel physical progress on the ship's three super modules is estimated at 87% complete.

In the fall of 2008, the Navy was formally notified of a projected delay in ship delivery from August 31, 2012 to April 8, 2013. The Navy agreed to allow Ingalls to reschedule its baseline. In the summer of 2009, the Navy was informed that, due to labor issues in the shipyard, material delays, engineering deficiencies, and delayed implementation of a yard wide Enterprise Resource Program, delivery of LHA 6 would be delayed until the end of October 2013. Since that time, contractor schedule risk has been realized. The latest Navy assessment of leading schedule indicators caused the Program Manager to revise his projected ship delivery date to March 2014. The Navy Program Office is working diligently with Ingalls on efficiency improvement, increased productivity, and risk mitigation in order to manage further schedule risk.

Ingalls' latest cost performance assessment for LHA 6 reflects a contract most likely Latest Revised Estimate (LRE) that exceeds the contract Target Price. In October 2010 the Navy Program Office developed the Program Manager's Estimate at Completion (PMEAC), which also exceeds Target Price. Department of Navy has included funding in FY 2013 to cover Government maximum liability to the contract ceiling price and a projected PM Economic Price Adjustment (EPA) liability of $37.7M in FY 2014. An increase in budget may be required to cover any additional EPA liability shortfall.

LHA 6 has interface issues with the F35 Joint Strike Fighter (JSF). This aircraft has large heating impacts to the flight deck and will require strengthening the flight deck in the landing areas. JSF integration will also require shielding systems located at the flight deck edge and relocating some ship self-defense and Command, Control, Communications, Computers and Intelligence (C4I) systems. The relocation and heating issues are not specific to LHA 6. To address the interface issues, JSF interoperability solutions are currently planned to be installed in LHA 6 during Post Shakedown Availability (PSA). LHA 6 Initial Operational Test & Evaluation (IOT&E) is not expected to be impacted if the JSF interoperability solutions are incorporated during PSA as planned. The Program Office has initiated discussions with the shipbuilder as to how to incorporate the changes in the LHA 7.

The next ship of the AMERICA Class is the LHA 7, a repeat design configuration of the LHA 6 with fact of life updates for equipment obsolescence. The LHA 6 Acquisition Program Baseline (APB) was updated to include LHA 7, and was signed by the USD(AT&L) on May 8, 2012. The Defense Acquisition Board (DAB) program review occurred on May 7, 2012 and the DD&C contract modification for LHA 7 was awarded on May 31, 2012. This contract modification subsumes the efforts and costs associated with the pre-existing advance procurement contract.

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) (ASN (RD&A)), Naval Sea Systems Command (NAVSEA), Office of the Chief of Naval Operations (OPNAV), and Marine Corps Combat Development Command (MCCDC). LHA 8 will be designed with a two Landing Craft Air Cushion (LCAC) well deck and a reduced island. The FY 2013 President's Budget included funding for advanced procurement in FY 2015 and FY 2016, with the first increment of construction funding starting in FY 2017. The revised LHA(R) Capability Development Document (CDD) is in Joint Staffing.

There are no significant software-related issues with this program at this time.

Threshold Breaches

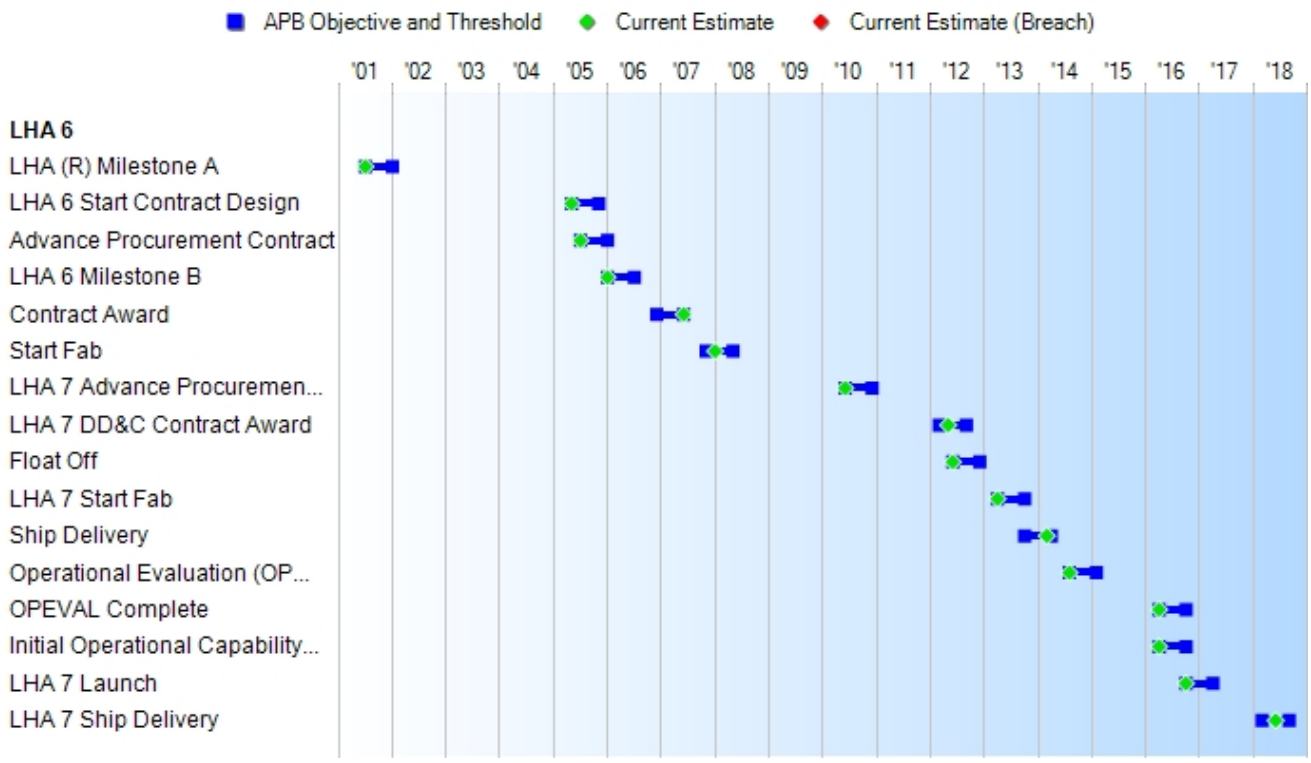
APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☑
	Procurement	☑
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

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

Explanation of Breach

Cost breaches previously reported in the December 2009, December 2010 and December 2011 SAR.

Schedule


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 Contract
LHA 6 Milestone B
Contract Award
Start Fab
LHA 7 Advance Procuremen...
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

Milestones	SAR Baseline Dev Est	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	(Ch-1)
LHA 7 DD&C Contract Award	N/A	MAR 2012	SEP 2012	MAY 2012	(Ch-1)
Float Off	AUG 2010	JUN 2012	DEC 2012	JUN 2012	(Ch-2)
LHA 7 Start Fab	N/A	APR 2013	OCT 2013	APR 2013	(Ch-1)
Ship Delivery	DEC 2011	OCT 2013	APR 2014	MAR 2014	(Ch-3)
Operational Evaluation (OPEVAL) Start	AUG 2012	AUG 2014	FEB 2015	AUG 2014	
OPEVAL Complete	SEP 2013	APR 2016	OCT 2016	APR 2016	
Initial Operational Capability (IOC)	SEP 2013	APR 2016	OCT 2016	APR 2016	
LHA 7 Launch	N/A	OCT 2016	APR 2017	OCT 2016	(Ch-1)
LHA 7 Ship Delivery	N/A	MAR 2018	SEP 2018	JUN 2018	(Ch-1)

Acronyms And Abbreviations

DD&C - Detail Design & Construction
Fab - Fabrication

Change Explanations

(Ch-1) Detail Design & Construction (DD&C) contract modification for LHA 7 was awarded on May 31, 2012. These new Milestones reflect updated Acquisition Program Baseline (APB) information for inclusion of LHA 7.

(Ch-2) LHA 6 Float Off was delayed from the prior Current Estimate of May 2012 to June 2012 to ensure high tide sea state during launch.

(Ch-3) Navy assessment of leading schedule indicators has caused the Program Manager to revise his projected ship delivery date from October 2013 to March 2014.

Memo

Schedule reflects March 2014 Delivery for LHA 6.

Performance

Characteristics	SAR Baseline Dev Est	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 12 hrs/day (Sustained) 6 Spots 24 hrs/day for six consecutive days (Surge)
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	2,891 Persons
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, implement recommenda t-ions of the NAVSEA USS COLE Survivability Review Group Phase II Analysis Report of Amphibious Ships, April 2003	Equals threshold, implement recommenda t-ions of the NAVSEA COLE Survivability Review Group Phase II Analysis Report of Amphibious Ships, April 2003	Level II per OPNAV-INST 9070.1 of September 23, 1988 (LHA(R) cargo magazine protection as stated in para. 6.b.17 of the CDD	TBD	Equals threshold, implement recommenda tions 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)	Four decontaminat -ion stations (two CPS, one casualty, and one conventional)	Four decontaminat -ion stations (two CPS, one casualty, and one conventional)	TBD	Four decontamin- ation stations (two CPS, one casualty, and one

	providing a capability of decontamination an avg of ten people per hr per station	providing a capability of decontamination an avg of ten people per hr per station	providing a capability of decontamination an avg of ten people per hr per station		conventional) providing a capability of decontamin-ation an avg of ten people per hr per station

Requirements Source: Capability Development Document (CDD) dated December 17, 2009

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
TBD - To be determined

Change Explanations

None

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

Track To Budget

RDT&E				
APPN 1319	BA 04	PE 0603564N	(Navy)	
	Project 0408	Ship Preliminary Design & Feasibility Studies/Ship Development	(Shared)	(Sunk)
APPN 1319	BA 05	PE 0604567N	(Navy)	
	Project 2465	Ship Contract Design/Live Fire Test & Evaluation/LHA(R)	(Shared)	
	Project 9235	Ship Contract Design/Live Fire Test & Evaluation/LHA (R) DESIGN	(Shared)	(Sunk)
	Project 9236	Ship Contract Design/Live Fire Test & Evaluation/LHA(R) DESIGN	(Shared)	(Sunk)
Procurement				
APPN 1611	BA 03	PE 0204411N	(Navy)	
	ICN 3041	LHA Replacement		
APPN 1611	BA 05	PE 0204411N	(Navy)	
	ICN 5110	Outfitting & Post Delivery	(Shared)	
	ICN 5300	Completion of Prior Year Shipbuilding Programs	(Shared)	
Acq O&M				
APPN 1804	BA 01	PE 0204411N	(Navy)	
	Subactivity Group 6C	LHA(R) TADTAR	(Shared)	

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2006 $M			BY2006 $M	TY $M		
	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	199.9	240.6	264.7	**341.6** [1]	197.5	239.9	359.9
Procurement	2677.5	5420.9	5963.0	**8354.0** [1]	2896.0	6563.4	10957.7
Flyaway	2677.5	--	--	8354.0	2896.0	--	10957.7
Recurring	2501.5	--	--	8354.0	2710.0	--	10957.7
Non Recurring	176.0	--	--	0.0	186.0	--	0.0
Support	0.0	--	--	0.0	0.0	--	0.0
Other Support	0.0	--	--	0.0	0.0	--	0.0
Initial Spares	0.0	--	--	0.0	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	1.8	0.0	1.6	1.8
Total	2877.4	5663.1	N/A	8697.4	3093.5	6804.9	11319.4

[1] ***APB Breach***

Confidence Level for Current APB Cost 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.

LHA 6 is the first LHA replacement ship of the LHA 6 AMERICA Class. The original SAR baseline development estimate was for LHA 6 only. Current APB development reflects updated APB signed May 8, 2012, and represents LHA 6 and LHA 7 only. The Current Estimate reflects 2014 President's Budget funding for the LHA 6, LHA 7 and LHA 8.

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

Procurement reflects a quantity of three units: LHA 6 (2007), LHA 7 (2011) and LHA 8 (2017).

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2014 President's Budget / December 2012 SAR (TY$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	247.2	33.7	30.8	23.3	13.2	4.9	6.8	0.0	359.9
Procurement	6311.3	162.9	75.0	83.4	255.9	1623.4	2440.7	5.1	10957.7
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.0	1.8
PB 2014 Total	6559.1	196.8	106.0	106.9	269.3	1628.5	2447.7	5.1	11319.4
PB 2013 Total	6573.6	196.8	41.7	114.4	260.8	2120.0	2095.9	0.0	11403.2
Delta	-14.5	0.0	64.3	-7.5	8.5	-491.5	351.8	5.1	-83.8

Current funding reflects the LHA 6, LHA 7, and LHA 8.

Program funding and production quantities listed in this SAR are consistent with the FY 2014 President's Budget (PB). The FY 2014 PB did not reflect the enacted DoD appropriation for FY 2013, nor sequestration; it reflected the President's requested amounts for FY 2013. However, for this program the President's requested amounts for FY 2013 were appropriated.

Quantity	Undistributed	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	2	0	0	0	0	1	0	0	3
PB 2014 Total	0	2	0	0	0	0	1	0	0	3
PB 2013 Total	0	2	0	0	0	0	1	0	0	3
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
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	--	--	--	--	--	--	21.4
2013	--	--	--	--	--	--	33.7
2014	--	--	--	--	--	--	30.8
2015	--	--	--	--	--	--	23.3
2016	--	--	--	--	--	--	13.2
2017	--	--	--	--	--	--	4.9
2018	--	--	--	--	--	--	6.8
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**359.9**

Annual Funding BY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2006 $M	Non End Item Recurring Flyaway BY 2006 $M	Non Recurring Flyaway BY 2006 $M	Total Flyaway BY 2006 $M	Total Support BY 2006 $M	Total Program BY 2006 $M
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	--	--	--	--	--	--	18.7
2013	--	--	--	--	--	--	28.9
2014	--	--	--	--	--	--	25.9
2015	--	--	--	--	--	--	19.2
2016	--	--	--	--	--	--	10.7
2017	--	--	--	--	--	--	3.9
2018	--	--	--	--	--	--	5.3
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**341.6**

Annual Funding TY$
1611 | Procurement | Shipbuilding and Conversion, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2005	--	149.3	--	--	149.3	--	149.3
2006	--	350.4	--	--	350.4	--	350.4
2007	1	1131.1	--	--	1131.1	--	1131.1
2008	--	1365.8	--	--	1365.8	--	1365.8
2009	--	192.1	--	--	192.1	--	192.1
2010	--	169.5	--	--	169.5	--	169.5
2011	1	937.6	--	--	937.6	--	937.6
2012	--	2015.5	--	--	2015.5	--	2015.5
2013	--	162.9	--	--	162.9	--	162.9
2014	--	75.0	--	--	75.0	--	75.0
2015	--	83.4	--	--	83.4	--	83.4
2016	--	255.9	--	--	255.9	--	255.9
2017	1	1623.4	--	--	1623.4	--	1623.4
2018	--	2440.7	--	--	2440.7	--	2440.7
2019	--	5.1	--	--	5.1	--	5.1
Subtotal	**3**	**10957.7**	**--**	**--**	**10957.7**	**--**	**10957.7**

Annual Funding BY$
1611 | Procurement | Shipbuilding and Conversion, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2006 $M	Non End Item Recurring Flyaway BY 2006 $M	Non Recurring Flyaway BY 2006 $M	Total Flyaway BY 2006 $M	Total Support BY 2006 $M	Total Program BY 2006 $M
2005	--	141.7	--	--	141.7	--	141.7
2006	--	321.3	--	--	321.3	--	321.3
2007	1	991.7	--	--	991.7	--	991.7
2008	--	1158.8	--	--	1158.8	--	1158.8
2009	--	158.3	--	--	158.3	--	158.3
2010	--	135.2	--	--	135.2	--	135.2
2011	1	725.5	--	--	725.5	--	725.5
2012	--	1528.6	--	--	1528.6	--	1528.6
2013	--	121.2	--	--	121.2	--	121.2
2014	--	54.8	--	--	54.8	--	54.8
2015	--	59.8	--	--	59.8	--	59.8
2016	--	180.0	--	--	180.0	--	180.0
2017	1	1120.5	--	--	1120.5	--	1120.5
2018	--	1653.2	--	--	1653.2	--	1653.2
2019	--	3.4	--	--	3.4	--	3.4
Subtotal	**3**	**8354.0**	**--**	**--**	**8354.0**	**--**	**8354.0**

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	2817.6
2008	--	--
2009	--	--
2010	--	--
2011	1	2583.0
2012	--	--
2013	--	--
2014	--	--
2015	--	--
2016	--	--
2017	1	2953.4
2018	--	--
2019	--	--
Subtotal	**3**	**8354.0**

Annual Funding TY$
1804 | Acq O&M | Operation and Maintenance, Navy

Fiscal Year	Total Program TY $M
2010	0.2
2011	0.2
2012	0.2
2013	0.2
2014	0.2
2015	0.2
2016	0.2
2017	0.2
2018	0.2
Subtotal	**1.8**

Annual Funding BY$
1804 | Acq O&M | Operation and Maintenance, Navy

Fiscal Year	Total Program BY 2006 $M
2010	0.2
2011	0.2
2012	0.2
2013	0.2
2014	0.2
2015	0.2
2016	0.2
2017	0.2
2018	0.2
Subtotal	**1.8**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	2/14/2006	5/8/2012
Approved Quantity	1	2
Reference	LHA(R)/LHA-6 ADM	LHA(R)/LHA-6 ADM/LHA 7 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 Acquisition Decision Memorandum (ADM) dated February 14, 2006, which approved 1 ship, which is standard for shipbuilding programs.

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

Foreign Military Sales

None

Nuclear Cost

None

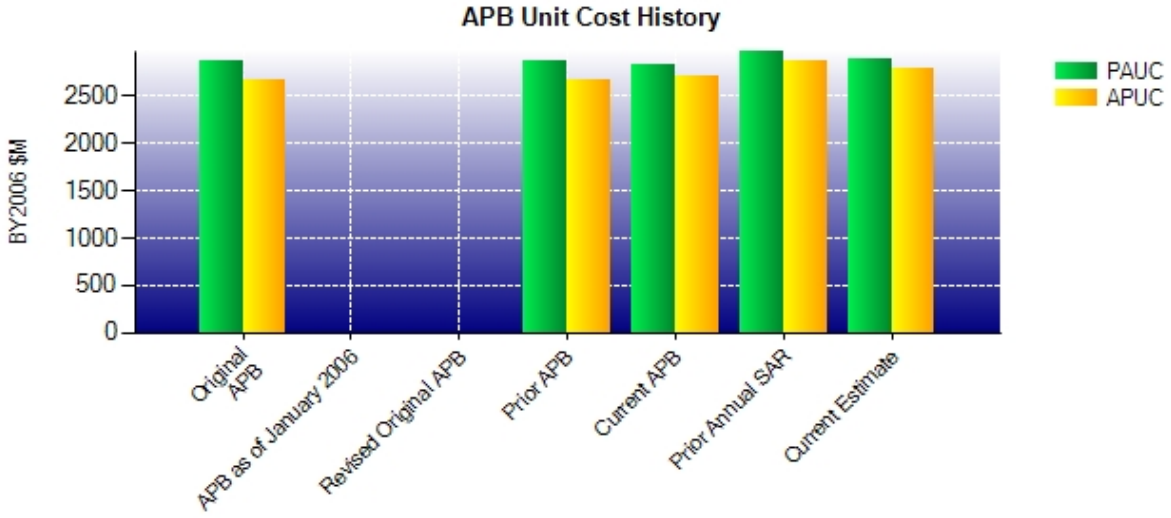
Unit Cost

Unit Cost Report

Unit Cost	BY2006 $M Current UCR Baseline (MAY 2012 APB)	BY2006 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	5663.1	8697.4	
Quantity	2	3	
Unit Cost	2831.550	2899.133	+2.39
Average Procurement Unit Cost (APUC)			
Cost	5420.9	8354.0	
Quantity	2	3	
Unit Cost	2710.450	2784.667	+2.74

Unit Cost	BY2006 $M Original UCR Baseline (JAN 2006 APB)	BY2006 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	2877.4	8697.4	
Quantity	1	3	
Unit Cost	2877.400	2899.133	+0.76
Average Procurement Unit Cost (APUC)			
Cost	2677.5	8354.0	
Quantity	1	3	
Unit Cost	2677.500	2784.667	+4.00

Unit Cost History



		BY2006 $M		TY $M	
	Date	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 2011	2980.467	2868.467	3801.067	3684.300
Current Estimate	DEC 2012	2899.133	2784.667	3773.133	3652.567

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
3093.500	253.433	566.566	5.800	0.000	-236.833	90.667	0.000	679.633	3773.133

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2896.000	253.000	698.233	5.800	0.000	-291.133	90.667	0.000	756.567	3652.567

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	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	APR 2016
Total Cost (TY $M)	N/A	3093.5	N/A	11319.4
Total Quantity	N/A	1	N/A	3
Prog. Acq. Unit Cost (PAUC)	N/A	3093.500	N/A	3773.133

Cost Variance

Summary Then Year $M					
	RDT&E	Proc	MILCON	Acq O&M	Total
SAR Baseline (Dev Est)	197.5	2896.0	--	--	3093.5
Previous Changes					
Economic	-0.3	+503.8	--	--	+503.5
Quantity	--	+7886.7	--	--	+7886.7
Schedule	--	+17.4	--	--	+17.4
Engineering	--	--	--	--	--
Estimating	+151.5	-523.0	--	+1.6	-369.9
Other	--	+272.0	--	--	+272.0
Support	--	--	--	--	--
Subtotal	+151.2	+8156.9	--	+1.6	+8309.7
Current Changes					
Economic	+1.6	+255.2	--	--	+256.8
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	--	--	--	--	--
Estimating	+9.6	-350.4	--	+0.2	-340.6
Other	--	--	--	--	--
Support	--	--	--	--	--
Subtotal	+11.2	-95.2	--	+0.2	-83.8
Total Changes	+162.4	+8061.7	--	+1.8	+8225.9
CE - Cost Variance	359.9	10957.7	--	1.8	11319.4
CE - Cost & Funding	359.9	10957.7	--	1.8	11319.4

Summary Base Year 2006 $M					
	RDT&E	Proc	MILCON	Acq O&M	Total
SAR Baseline (Dev Est)	199.9	2677.5	--	--	2877.4
Previous Changes					
Economic	--	--	--	--	--
Quantity	--	+6142.3	--	--	+6142.3
Schedule	--	-33.3	--	--	-33.3
Engineering	--	--	--	--	--
Estimating	+134.5	-430.8	--	+1.6	-294.7
Other	--	+249.7	--	--	+249.7
Support	--	--	--	--	--
Subtotal	+134.5	+5927.9	--	+1.6	+6064.0
Current Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	--	--	--	--	--
Estimating	+7.2	-251.4	--	+0.2	-244.0
Other	--	--	--	--	--
Support	--	--	--	--	--
Subtotal	+7.2	-251.4	--	+0.2	-244.0
Total Changes	+141.7	+5676.5	--	+1.8	+5820.0
CE - Cost Variance	341.6	8354.0	--	1.8	8697.4
CE - Cost & Funding	341.6	8354.0	--	1.8	8697.4

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+1.6
Reduced funding for Below Threshold Reprogramming (BTR) and Small Business Innovative Research (SBIR) Assessment. (Estimating)	-3.2	-3.7
Increased funding for Navy/Marine Air-Ground Task Force (MAGTF) Ship Integration Center (NMSIC). (Estimating)	+8.2	+10.0
Adjustment for current and prior escalation. (Estimating)	-0.7	-0.7
Increased funding for Test & Evaluation (T&E) requirements in accordance with 10 United States Code 2399. (Estimating)	+1.5	+1.9
Revised estimate to reflect application of new outyear escalation indices. (Estimating)	+1.4	+2.1
RDT&E Subtotal	+7.2	+11.2

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+255.2
Adjustment for current and prior escalation. (Estimating)	-73.7	-95.8
Decreased Outfitting and Post Delivery funding for LHA 8. (Estimating)	-19.5	-30.9
Increased funding for LHA 6 Economic Price Adjustment (EPA) associated with cost to complete. (Estimating)	+27.5	+37.7
Decreased funding for rate adjustments (eg Navy Working Capital Fund). (Estimating)	-0.9	-1.3
Revised estimate for LHA 8 and realignment of two year incremental funding. (Estimating)	-184.8	-260.1
Procurement Subtotal	-251.4	-95.2

Acq O&M	$M	
Current Change Explanations	**Base Year**	**Then Year**
Refined estimate for LHA 7 and LHA 8. (Estimating)	+0.2	+0.2
Acq O&M Subtotal	+0.2	+0.2

Contracts

Appropriation: Procurement	
Contract Name	**LHA 6 Detail Design & Construction**
Contractor	Huntington Ingalls Incorporated
Contractor Location	Pascagoula, MS 39567
Contract Number, Type	N00024-05-C-2221, FPIF
Award Date	July 15, 2005
Definitization Date	June 01, 2007

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
2340.0	2521.6	1	2374.7	2543.7	1	2543.7	2543.7

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/17/2013)	-334.2	-175.7
Previous Cumulative Variances	-324.0	-205.7
Net Change	-10.2	+30.0

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to changes in rate sets and engineering change papers.

The favorable net change in the schedule variance is due to lack of remaining schedule available to be compared against work being currently performed. Since the LHA 6 is expected to deliver later than the February 2013 Over Target Schedule/Over Target Baseline (OTS/OTB) end date, most of the work is being accomplished out of sequence and in time periods not anticipated at the time of the OTS. As a result, schedule variance is artificially inflated because the variance is calculated by comparing work performed to work scheduled. As the contract runs out of schedule, the out of sequence work being performed artificially inflates the schedule variance.

Contract Comments

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

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to changes in build strategy and Engineering Change Proposals.

The LHA Replacement Advance Procurement (AP) Contract was subsumed by the LHA Replacement Detail Design and Construction (DD&C) Contract on June 1, 2007. Contractor Estimate at Complete (EAC) does not include $41.5M for contractor's projected Economic Price Adjustment (EPA).

Appropriation: Procurement

Contract Name	**LHA 7 Detail Design & Construction Contract (DD&C)**
Contractor	Huntington Ingalls Incorporated
Contractor Location	Pascagoula, MS 39567
Contract Number, Type	N00024-10-C-2229, FPIF
Award Date	June 30, 2010
Definitization Date	May 31, 2012

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	2355.0	2664.9	1	2495.6	2355.0

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/17/2013)	+9.7	-3.2
Previous Cumulative Variances	+1.1	-10.5
Net Change	+8.6	+7.3

Cost And Schedule Variance Explanations

The favorable net change in the cost variance is due to the current budget spread for the Material Program Management control account being reviewed and re-spread as part of an Integrated Baseline Review (IBR) action item.

The favorable net change in the schedule variance is due to period performance in Electrical Plant being accomplished ahead of schedule.

Contract Comments

The LHA 7 Advance Procurement (AP) Contract and Long Lead Time Material (LLTM) Contract Line Item Number (CLIN) has been subsumed by the LHA 7 DD&C contract. The Program Manager Estimate at Completion (PMEAC) reflects the current Target price of the contract. The Program Manager will develop a PMEAC once the contract has reached 20% progress.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	0	0	3	0.00%
Total Program Quantities Delivered	0	0	3	0.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	11319.4	Years Appropriated	13
Expenditures To Date	2918.9	Percent Years Appropriated	68.42%
Percent Expended	25.79%	Appropriated to Date	6755.9
Total Funding Years	19	Percent Appropriated	59.68%

The above data is current as of 3/5/2013.

Operating and Support Cost

LHA 6

Assumptions and Ground Rules

Cost Estimate Reference:

The Operating and Support Cost Analysis Model (OSCAM) Naval Suite Version 8.0 is the total ship platform Operating & Support (O&S) cost estimating tool used for the LHA 6 and LHA 7 O&S cost estimate. OSCAM is sponsored by the Naval Center for Cost Analysis (NCCA) and provides a means of analyzing O&S costs of Navy shipboard systems and ships. The objective of the OSCAM program is to provide a tool for estimating O&S costs over a ships service life, as well as for assessing the impact of alternative maintenance strategies and operating policies on cost and availability. The OSCAM model comes with annually updated datasets that are based on historical data extracted from the Visibility and Management of Operating and Support Costs (VAMOSC) database that is also managed by the NCCA.

O&S costs for the LHA 6 and LHA 7 were developed between 2010 and 2011in support of the LHA 7 Program Life Cycle Cost Estimate (PLCCE), and the OSCAM dataset utilized in their development included the then-latest data available for the LHD 1 Class, for which VAMOSC included FY 1990-2009 data and the Ships, Maintenance, Material, Management (3-M) Open Architecture Retrieval System (OARS) database included FY 1999-2008 data. The historical datasets were developed in FY 2011 and deflated to BY 2006. The LHA 7 PLCCE was developed in April 2012.

Sustainment Strategy:

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 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 OSCAM historical average dataset for LHD 1. VAMOSC data reflects average O&S return data for active ships (LHD1-7) between FY 1992 and FY 2011. OARS 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 OPNAV 4700 (2011).
The scope of LHD 1 Indirect Support costs, which were first mandated in the OSD 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.

Unitized 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	65.7	63.9
Unit Operations	12.0	18.2
Maintenance	27.9	33.5
Sustaining Support	4.4	4.9
Continuing System Improvements	7.7	7.4
Indirect Support	27.2	31.1
Other	0.0	0.0
Total	144.9	159.0

Unitized Cost Comments:

The total Operating & Support (O&S) cost for one ship across the 40 year life is estimated to be $5.798B (FY 2006). O&S costs reflect LHA 6 and LHA 7 only. LHA 8 cost estimate is being developed.

	Total O&S Cost $M			
	Current Development APB Objective/Threshold		Current Estimate	
	LHA 6		LHA 6	LHD 1 (Antecedent)
Base Year	12095.2	13304.7	11596.3	6360.4
Then Year	24951.0	N/A	23788.5	N/A

Total O&S Costs Comments:

O&S costs for the LHA 6 and LHA 7 have been estimated as an annual cost based on one ship with an expected service life of 40 years. 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 and 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 Document).

Disposal Costs

The CG class of ship was determined by the 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. The total cost estimate for the disposal of LHA(R) is 25.8 TY$M or 9.9 CY06$M.