Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-516

SSN 774

As of December 31, 2010

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Designation And Nomenclature (Popular Name)

VIRGINIA CLASS SUBMARINE (SSN 774)

DoD Component

Navy

Responsible Office

Responsible Office

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Date Assigned September 5, 2008

References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated September 3, 2010

Approved APB

DAE Approved Acquisition Program Baseline (APB) dated September 3, 2010

Mission and Description

The VIRGINIA Class (SSN 774) Submarine Program is bringing forward a critical national security asset designed to flexibly address the unique multi-mission requirements of the post-Cold War era. Capable of performing traditional submarine missions, dominating the littoral battle space and adapting to future requirements, the VIRGINIA Class Submarine will satisfy any assigned role well into the Twenty-First Century. Intended to replace the fleet of SSN 688 Class submarines, the VIRGINIA Class Submarine is characterized by state-of-the-art stealth, enhanced features for special operations forces, and cost effective Command, Control, Communication and Intelligence capability. With an array of armament including the MK48 Advanced Capability (ADCAP) torpedo and cruise missile vertical launch capability, the VIRGINIA Class Submarine maintains total undersea superiority at an affordable cost.

Executive Summary

As of December 2010, the first seven ships of the VIRGINIA Class have been delivered to the Navy, the most recent being USS MISSOURI (SSN 780) which was delivered and commissioned in July 2010. There are five additional submarines under construction and six more under contract. As reported in the September 2010 SAR, the achievement of Milestone III on September 3, 2010 coincided with the program transitioning to the construction of two submarines per year beginning in Fiscal Year 2011. With the Milestone decision and authorization to proceed to Full Rate Production, the program will continue construction of VIRGINIA Class Submarines beyond the Low Rate Initial Production quantity of fourteen submarines through the remainder of the class. The program achieved Full Operational Capability coincident with the Milestone III decision.

The VIRGINIA Class began construction in September 1998. Each of the seven delivered submarines has demonstrated improved performance and an overall reduction in production schedule. The remaining ships under construction are demonstrating improved cost and schedule efficiency resulting from construction performance initiatives incorporated over the last several years. Significant improvements in production processes continue to drive cost reduction progress and acceleration of delivery schedules. To illustrate the impact of shipbuilder learning and improved production processes, USS MISSOURI (SSN 780) achieved a construction span of 65 months compared with USS HAWAII (SSN 776) at 86 months, delivered just three and a half years earlier.

In addition to reducing production costs, the program is also looking to reduce life cycle costs. The Reduction of Total Ownership Cost (RTOC) initiative has been focusing on maximizing operational availability (Ao) while minimizing Operating and Support (O&S) costs. A primary objective of RTOC is to increase the number of deployments the Navy can expect from Block IV and later VIRGINIA Class Ships. To achieve this objective, the number of major maintenance availabilities will be reduced from four to three to limit the total time spent in depot. This is a major logistical effort which requires the RTOC team to review all existing depot level maintenance requirements with the goal of pushing depot periodicities to a minimum of 96 months.

Recent production and testing milestones include the completion of the USS NEW HAMPSHIRE (SSN 778) Post-Shakedown Availability (PSA) on December 2, 2010. Shortly thereafter, NEW HAMPSHIRE became the fifth VIRGINIA Class ship to transition to the Strategic and Attack Submarine Program Office (PMS 392). CALIFORNIA, the eighth ship of the class, was christened in Newport News, Virginia on November 6, 2010. CALIFORNIA is scheduled to be delivered to the Navy in Summer 2011, several months ahead of the contracted delivery date. Other upcoming key events include the scheduled completion of MISSISSIPPI’s (SSN 782) pressure hull in May 2011 and the completion of USS NEW MEXICO's (SSN 779) year-long Post Shakedown Availability in July. Lastly, SSN 786 and SSN 787 will commence construction in 2011.

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

Threshold Breaches

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

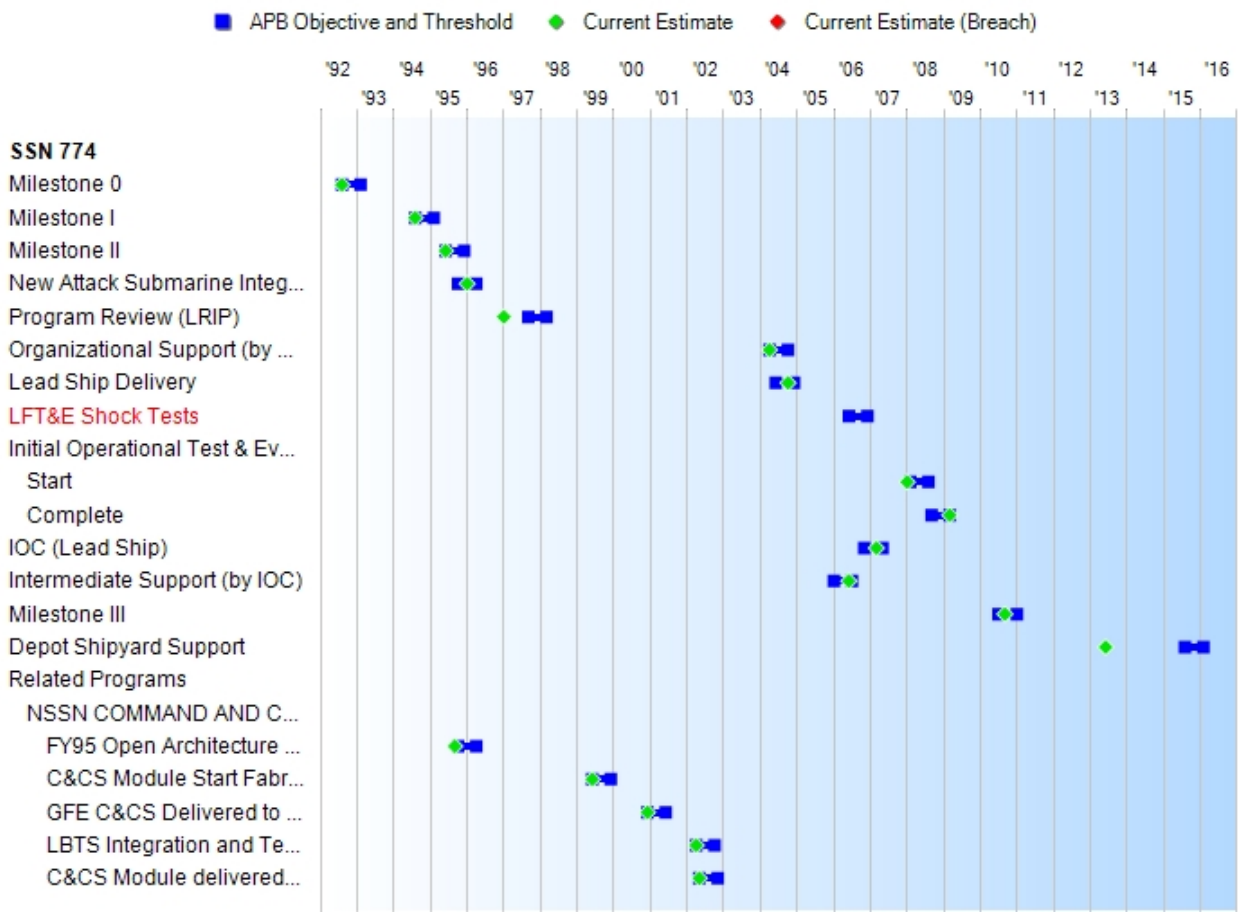
Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	Significant
	APUC	Significant

Explanation of Breach

Schedule -- On December 4, 2006, the Under Secretary of Defense (Acquisition Technology & Logistics) notified Congress of the decision to eliminate the VIRGINIA Class Ship Shock Test from the Live Fire Test and Evaluation portion of the VIRGINIA Class Test and Evaluation Master Plan (TEMP).

Cost -- This program reflects a significant Nunn-McCurdy breach to the original baseline that was first reported in the December 2005 SAR. The supporting breach information and explanations can be found in the Unit Cost Report section of that SAR.

Schedule


APB Objective and Threshold
Current Estimate
Current Estimate (Breach)
'92
'93
'94
'95
'96
'97
'98
'99
'00
'01
'02
'03
'04
'05
'06
'07
'08
'09
'10
'11
'12
'13
'14
'15
'16
SSN 774
Milestone 0
Milestone I
Milestone II
New Attack Submarine Integ...
Program Review (LRIP)
Organizational Support (by ...
Lead Ship Delivery
LFT&E Shock Tests
Initial Operational Test & Ev...
Start
Complete
IOC (Lead Ship)
Intermediate Support (by IOC)
Milestone III
Depot Shipyard Support
Related Programs
NSSN COMMAND AND C...
FY95 Open Architecture ...
C&CS Module Start Fabr...
GFE C&CS Delivered to ...
LBTS Integration and Te...
C&CS Module delivered...

Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	
Milestone 0	AUG 1992	AUG 1992	FEB 1993	AUG 1992	
Milestone I	AUG 1994	AUG 1994	FEB 1995	AUG 1994	
Milestone II	JUN 1995	JUN 1995	DEC 1995	JUN 1995	
New Attack Submarine Integrated Product and Process Development Contract Award	OCT 1995	OCT 1995	APR 1996	JAN 1996	
Program Review (LRIP)	SEP 1997	SEP 1997	MAR 1998	JAN 1997	
Organizational Support (by Fast Cruise)	APR 2004	APR 2004	OCT 2004	APR 2004	
Lead Ship Delivery	JUN 2004	JUN 2004	DEC 2004	OCT 2004	
LFT&E Shock Tests	JUN 2006	JUN 2006	DEC 2006	N/A [1]	
Initial Operational Test & Evaluation					
Start	FEB 2008	FEB 2008	AUG 2008	JAN 2008	
Complete	SEP 2008	SEP 2008	MAR 2009	MAR 2009	
IOC (Lead Ship)	NOV 2006	NOV 2006	MAY 2007	MAR 2007	
Intermediate Support (by IOC)	JAN 2006	JAN 2006	JUL 2006	JUN 2006	
Milestone III	JUL 2010	JUL 2010	JAN 2011	SEP 2010	
Depot Shipyard Support	AUG 2015	AUG 2015	FEB 2016	JUN 2013	(Ch-1)
Related Programs					
NSSN COMMAND AND CONTROL SYSTEM					
FY95 Open Architecture Demo Complete	OCT 1995	OCT 1995	APR 1996	SEP 1995	
C&CS Module Start Fabrication	JUN 1999	JUN 1999	DEC 1999	JUN 1999	
GFE C&CS Delivered to Shipyard	DEC 2000	DEC 2000	JUN 2001	DEC 2000	
LBTS Integration and Test Complete	APR 2002	APR 2002	OCT 2002	APR 2002	
C&CS Module delivered to ship	MAY 2002	MAY 2002	NOV 2002	MAY 2002	

[1] *APB Breach*

Acronyms And Abbreviations

C&CS - Command and Control System
GFE - Government Furnished Equipment
IOC - Initial Operational Capability
LBTS - Land Based Test Site
LFT&E - Live Fire Test and Evaluation
LRIP - Low Rate Initial Production
NSSN - New Attack Submarine

Change Explanations

(Ch-1) The Current Estimate for Depot Shipyard Support changed from August 2015 to June 2013 to reflect the program's actual depot maintenance schedule.

Memo

On December 4, 2006, the Undersecretary of Defense (Acquisition, Technology and Logistics) (USD (AT&L))

notified Congress of the decision to eliminate the VIRGINIA Class Ship Shock Test from the Live Fire Test and Evaluation portion of the VIRGINIA Class Test and Evaluation Master Plan (TEMP).

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

Performance

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

Track To Budget

RDT&E				
APPN 1319	BA 03	PE 0603561N	(Navy)	
	Project F2177	NEW DESIGN SSN HM&E (NSSN UNIQUE)		(Sunk)
APPN 1319	BA 03	PE 0603564N	(Navy)	
	Project F2200	Ship Preliminary Design		(Sunk)
APPN 1319	BA 03	PE 0603570N	(Navy)	
	Project S2158	NUCLEAR PROPULSION		(Sunk)
APPN 1319	BA 05	PE 0604558N	(Navy)	
	Project F1947	NEW DESIGN SSN HM&E and Combat Systems		
	Project F1950	NEW DESIGN SSN HM&E and Combat Systems		
	Project F2429	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)
	Project F2430	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)
	Project F2644	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)
	Project F2645	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)
	Project F2887	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)
	Project F2888	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)
	Project F3062	NEW DESIGN SSN HM&E and Combat Systems	(Shared)	(Sunk)
	Project F9231	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)
	Project F9232	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)
	Project F9386	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)
	Project F9387	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)
	Project F9999	NEW DESIGN SSN HM&E and Combat Systems		(Sunk)

APPN 1319	BA 04	PE 0604567N	(Navy)	
	Project F2199	Ship Contract Design		(Sunk)

Future Years Defense Program funding includes the following projects from BA 05 PE 0604558: Project F1947 New Design Hull Mechanical & Electrical (HM&E), Project F1950 New Design Combat Systems. PE 0604558, Project 3062, Multi-mission Team Trainer, is not included as part of the VIRGINIA Class baseline acquisition cost for Research, Development Test & Evaluation.

Procurement

APPN 1611	BA 02	PE 0204281N	(Navy)	
	ICN 2013	New SSN (NSSN-1)		
APPN 1611	BA 05	PE 0204281N	(Navy)	
	ICN 5110	Outfitting and Post Delivery	(Shared)	
	ICN 5300	Completion of PY Shipbuilding Programs	(Shared)	(Sunk)
APPN 1810	BA 01	PE 0204281N	(Navy)	
	ICN 0920	Repair Parts	(Shared)	(Sunk)
	ICN 0942	VA Class Support Equipment	(Shared)	

VIRGINIA Class program acquisition costs include a portion of OPN budget ICN 0942. Programs included in VIRGINIA Class acquisition costs are: VA Class Special Operations Forces Support, Test and Evaluation Measuring Equipment, Exterior Communication System (ECS) Trainer, Virginia Ship Control OperatorTrainer (VSCOT) and Major Shore Spares. The balance of the OPN budget is captured in program Operating and Support Costs.

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY1995 $M			BY1995 $M	TY $M		
Appropriation	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	5420.4	5420.4	5962.4	5410.1	6351.2	6351.2	6319.6
Procurement	58933.2	58933.2	64826.5	57809.4	86856.1	86856.1	86749.5
Flyaway	58279.0	--	--	57193.5	85890.1	--	85828.1
Recurring	56764.1	--	--	55678.7	84249.0	--	84187.0
Non Recurring	1514.9	--	--	1514.8	1641.1	--	1641.1
Support	654.2	--	--	615.9	966.0	--	921.4
Other Support	0.0	--	--	0.0	0.0	--	0.0
Initial Spares	654.2	--	--	615.9	966.0	--	921.4
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	64353.6	64353.6	N/A	63219.5	93207.3	93207.3	93069.1

The VIRGINIA Class uses a fifty-fifty confidence interval for the current APB cost estimate. This level is standard for major shipbuilding programs.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	0	0	0
Procurement	30	30	30
Total	30	30	30

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2012 President's Budget / December 2010 SAR (TY$ M)

Appropriation	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
RDT&E	4696.3	150.0	94.2	89.1	116.5	147.6	150.3	875.6	6319.6
Procurement	35185.6	5219.5	4828.9	4976.3	6543.9	6418.7	5391.7	18184.9	86749.5
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2012 Total	39881.9	5369.5	4923.1	5065.4	6660.4	6566.3	5542.0	19060.5	93069.1
PB 2011 Total	39915.0	5369.4	4981.5	5070.4	6358.3	6561.4	6167.7	16970.2	91393.9
Delta	-33.1	0.1	-58.4	-5.0	302.1	4.9	-625.7	2090.3	1675.2

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	12	2	2	2	2	2	2	6	30
PB 2012 Total	0	12	2	2	2	2	2	2	6	30
PB 2011 Total	0	12	2	2	2	2	2	2	6	30
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
1992	--	--	--	--	--	--	22.7
1993	--	--	--	--	--	--	66.3
1994	--	--	--	--	--	--	363.7
1995	--	--	--	--	--	--	453.4
1996	--	--	--	--	--	--	429.0
1997	--	--	--	--	--	--	452.3
1998	--	--	--	--	--	--	382.4
1999	--	--	--	--	--	--	308.4
2000	--	--	--	--	--	--	275.4
2001	--	--	--	--	--	--	237.3
2002	--	--	--	--	--	--	218.8
2003	--	--	--	--	--	--	242.2
2004	--	--	--	--	--	--	155.4
2005	--	--	--	--	--	--	153.1
2006	--	--	--	--	--	--	166.3
2007	--	--	--	--	--	--	191.2
2008	--	--	--	--	--	--	233.5
2009	--	--	--	--	--	--	180.5
2010	--	--	--	--	--	--	164.4
2011	--	--	--	--	--	--	150.0
2012	--	--	--	--	--	--	94.2
2013	--	--	--	--	--	--	89.1
2014	--	--	--	--	--	--	116.5
2015	--	--	--	--	--	--	147.6
2016	--	--	--	--	--	--	150.3
2017	--	--	--	--	--	--	155.8
2018	--	--	--	--	--	--	141.9
2019	--	--	--	--	--	--	139.1
2020	--	--	--	--	--	--	143.5
2021	--	--	--	--	--	--	32.7
2022	--	--	--	--	--	--	41.5
2023	--	--	--	--	--	--	52.7
2024	--	--	--	--	--	--	57.9
2025	--	--	--	--	--	--	64.7
2026	--	--	--	--	--	--	22.9
2027	--	--	--	--	--	--	22.9

Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**6319.6**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1995 $M	Non End Item Recurring Flyaway BY 1995 $M	Non Recurring Flyaway BY 1995 $M	Total Flyaway BY 1995 $M	Total Support BY 1995 $M	Total Program BY 1995 $M
1992	--	--	--	--	--	--	23.8
1993	--	--	--	--	--	--	68.0
1994	--	--	--	--	--	--	365.9
1995	--	--	--	--	--	--	447.5
1996	--	--	--	--	--	--	416.4
1997	--	--	--	--	--	--	433.7
1998	--	--	--	--	--	--	363.7
1999	--	--	--	--	--	--	289.9
2000	--	--	--	--	--	--	255.1
2001	--	--	--	--	--	--	216.9
2002	--	--	--	--	--	--	198.0
2003	--	--	--	--	--	--	216.0
2004	--	--	--	--	--	--	134.8
2005	--	--	--	--	--	--	129.4
2006	--	--	--	--	--	--	136.3
2007	--	--	--	--	--	--	153.0
2008	--	--	--	--	--	--	183.5
2009	--	--	--	--	--	--	140.2
2010	--	--	--	--	--	--	126.2
2011	--	--	--	--	--	--	113.6
2012	--	--	--	--	--	--	70.3
2013	--	--	--	--	--	--	65.4
2014	--	--	--	--	--	--	84.0
2015	--	--	--	--	--	--	104.7
2016	--	--	--	--	--	--	104.8
2017	--	--	--	--	--	--	106.8
2018	--	--	--	--	--	--	95.7
2019	--	--	--	--	--	--	92.2
2020	--	--	--	--	--	--	93.5
2021	--	--	--	--	--	--	21.0
2022	--	--	--	--	--	--	26.2
2023	--	--	--	--	--	--	32.7
2024	--	--	--	--	--	--	35.3
2025	--	--	--	--	--	--	38.8
2026	--	--	--	--	--	--	13.5
2027	--	--	--	--	--	--	13.3
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**5410.1**

FYDP funding includes the following projects from BA 05 PE 0604558: Project F1947 New Design Hull Mechanical & Electrical (HM&E), Project F1950 New Design Combat Systems. PE 0604558, Project 3062, Multi-mission

Team Trainer, is not included as part of the VIRGINIA Class baseline acquisition cost for RDT&E.

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
1996	--	571.0	--	219.3	790.3	--	790.3
1997	--	533.2	--	242.5	775.7	--	775.7
1998	1	1628.7	--	840.9	2469.6	--	2469.6
1999	1	1882.0	--	165.6	2047.6	--	2047.6
2000	--	744.6	--	--	744.6	--	744.6
2001	1	1598.3	--	90.8	1689.1	0.2	1689.3
2002	1	2423.2	--	60.8	2484.0	15.9	2499.9
2003	1	2402.0	--	14.3	2416.3	8.3	2424.6
2004	1	2715.6	--	6.9	2722.5	11.0	2733.5
2005	1	2601.5	--	--	2601.5	4.3	2605.8
2006	1	2585.6	--	--	2585.6	15.1	2600.7
2007	1	2627.9	--	--	2627.9	8.4	2636.3
2008	1	3228.2	--	--	3228.2	19.5	3247.7
2009	1	3652.5	--	--	3652.5	17.9	3670.4
2010	1	4034.7	--	--	4034.7	9.8	4044.5
2011	2	5182.8	--	--	5182.8	13.0	5195.8
2012	2	4806.2	--	--	4806.2	17.4	4823.6
2013	2	4902.9	--	--	4902.9	25.8	4928.7
2014	2	6507.1	--	--	6507.1	26.7	6533.8
2015	2	6327.7	--	--	6327.7	33.8	6361.5
2016	2	5344.3	--	--	5344.3	38.4	5382.7
2017	2	5443.0	--	--	5443.0	25.1	5468.1
2018	1	3442.5	--	--	3442.5	28.3	3470.8
2019	2	5586.0	--	--	5586.0	33.8	5619.8
2020	1	2615.2	--	--	2615.2	35.3	2650.5
2021	--	129.3	--	--	129.3	29.0	158.3
2022	--	134.8	--	--	134.8	36.6	171.4
2023	--	136.6	--	--	136.6	25.3	161.9
2024	--	116.6	--	--	116.6	19.1	135.7
2025	--	96.2	--	--	96.2	7.9	104.1
2026	--	132.1	--	--	132.1	2.0	134.1
2027	--	54.7	--	--	54.7	0.9	55.6
Subtotal	**30**	**84187.0**	**--**	**1641.1**	**85828.1**	**508.8**	**86336.9**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1995 $M	Non End Item Recurring Flyaway BY 1995 $M	Non Recurring Flyaway BY 1995 $M	Total Flyaway BY 1995 $M	Total Support BY 1995 $M	Total Program BY 1995 $M
1996	--	548.1	--	210.6	758.7	--	758.7
1997	--	504.1	--	229.3	733.4	--	733.4
1998	1	1506.1	--	777.5	2283.6	--	2283.6
1999	1	1713.0	--	150.8	1863.8	--	1863.8
2000	--	661.0	--	--	661.0	--	661.0
2001	1	1371.6	--	77.9	1449.5	0.2	1449.7
2002	1	2067.7	--	51.8	2119.5	13.6	2133.1
2003	1	1937.5	--	11.5	1949.0	6.7	1955.7
2004	1	2113.8	--	5.4	2119.2	8.5	2127.7
2005	1	1941.0	--	--	1941.0	3.2	1944.2
2006	1	1865.9	--	--	1865.9	10.9	1876.8
2007	1	1823.5	--	--	1823.5	5.9	1829.4
2008	1	2181.0	--	--	2181.0	13.2	2194.2
2009	1	2416.8	--	--	2416.8	11.9	2428.7
2010	1	2624.9	--	--	2624.9	6.3	2631.2
2011	2	3320.6	--	--	3320.6	8.3	3328.9
2012	2	3030.0	--	--	3030.0	11.0	3041.0
2013	2	3039.8	--	--	3039.8	16.0	3055.8
2014	2	3966.9	--	--	3966.9	16.3	3983.2
2015	2	3793.1	--	--	3793.1	20.2	3813.3
2016	2	3150.0	--	--	3150.0	22.7	3172.7
2017	2	3154.6	--	--	3154.6	14.5	3169.1
2018	1	1961.8	--	--	1961.8	16.1	1977.9
2019	2	3130.1	--	--	3130.1	19.0	3149.1
2020	1	1440.9	--	--	1440.9	19.5	1460.4
2021	--	70.1	--	--	70.1	15.7	85.8
2022	--	71.8	--	--	71.8	19.5	91.3
2023	--	71.6	--	--	71.6	13.2	84.8
2024	--	60.1	--	--	60.1	9.8	69.9
2025	--	48.7	--	--	48.7	4.0	52.7
2026	--	65.8	--	--	65.8	1.0	66.8
2027	--	26.8	--	--	26.8	0.4	27.2
Subtotal	**30**	**55678.7**	**--**	**1514.8**	**57193.5**	**307.6**	**57501.1**

Cost Quantity Information
1611 | Procurement | Shipbuilding and Conversion, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 1995 $M
1996	--	--
1997	--	--
1998	1	2144.6
1999	1	2369.8
2000	--	--
2001	1	1918.5
2002	1	2025.3
2003	1	1826.1
2004	1	1812.7
2005	1	1747.5
2006	1	1781.6
2007	1	1873.5
2008	1	1846.8
2009	1	1940.6
2010	1	1845.7
2011	2	3539.6
2012	2	3346.4
2013	2	3382.3
2014	2	3536.6
2015	2	3565.2
2016	2	3578.3
2017	2	3625.3
2018	1	1930.7
2019	2	3980.5
2020	1	2061.1
2021	--	--
2022	--	--
2023	--	--
2024	--	--
2025	--	--
2026	--	--
2027	--	--
Subtotal	**30**	**55678.7**

Annual Funding TY$
1810 | Procurement | Other Procurement, 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	--	--	--	--	--	12.5	12.5
2006	--	--	--	--	--	44.1	44.1
2007	--	--	--	--	--	47.0	47.0
2008	--	--	--	--	--	39.7	39.7
2009	--	--	--	--	--	48.0	48.0
2010	--	--	--	--	--	13.8	13.8
2011	--	--	--	--	--	23.7	23.7
2012	--	--	--	--	--	5.3	5.3
2013	--	--	--	--	--	47.6	47.6
2014	--	--	--	--	--	10.1	10.1
2015	--	--	--	--	--	57.2	57.2
2016	--	--	--	--	--	9.0	9.0
2017	--	--	--	--	--	26.1	26.1
2018	--	--	--	--	--	25.7	25.7
2019	--	--	--	--	--	2.8	2.8
Subtotal	**--**	**--**	**--**	**--**	**--**	**412.6**	**412.6**

Annual Funding BY$
1810 | Procurement | Other Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1995 $M	Non End Item Recurring Flyaway BY 1995 $M	Non Recurring Flyaway BY 1995 $M	Total Flyaway BY 1995 $M	Total Support BY 1995 $M	Total Program BY 1995 $M
2005	--	--	--	--	--	10.4	10.4
2006	--	--	--	--	--	35.7	35.7
2007	--	--	--	--	--	37.2	37.2
2008	--	--	--	--	--	30.9	30.9
2009	--	--	--	--	--	37.0	37.0
2010	--	--	--	--	--	10.5	10.5
2011	--	--	--	--	--	17.8	17.8
2012	--	--	--	--	--	3.9	3.9
2013	--	--	--	--	--	34.6	34.6
2014	--	--	--	--	--	7.2	7.2
2015	--	--	--	--	--	40.2	40.2
2016	--	--	--	--	--	6.2	6.2
2017	--	--	--	--	--	17.7	17.7
2018	--	--	--	--	--	17.2	17.2
2019	--	--	--	--	--	1.8	1.8
Subtotal	**--**	**--**	**--**	**--**	**--**	**308.3**	**308.3**

VIRGINIA Class program acquisition costs include a portion of OPN budget ICN 0942. Programs included in VIRGINIA Class acquisition costs are: VA Class Special Operations Forces Support, Test and Evaluation Measuring Equipment, Exterior Communication System (ECS) Trainer, Virginia Ship Control OperatorTrainer (VSCOT) and Major Shore Spares. The balance of the OPN budget is captured in program Operating and Support Costs.

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	6/30/1995	6/30/1995
Approved Quantity	14	14
Reference	MS II ADM	MS II ADM
Start Year	1998	1998
End Year	2007	2011

Low Rate Initial Production (LRIP) quantity of 14 exceeds 10%, which is standard for shipbuilding programs.

Foreign Military Sales

None

Nuclear Cost

$14,450.2M (TY$). These costs are included in this report.

Unit Cost

Unit Cost Report

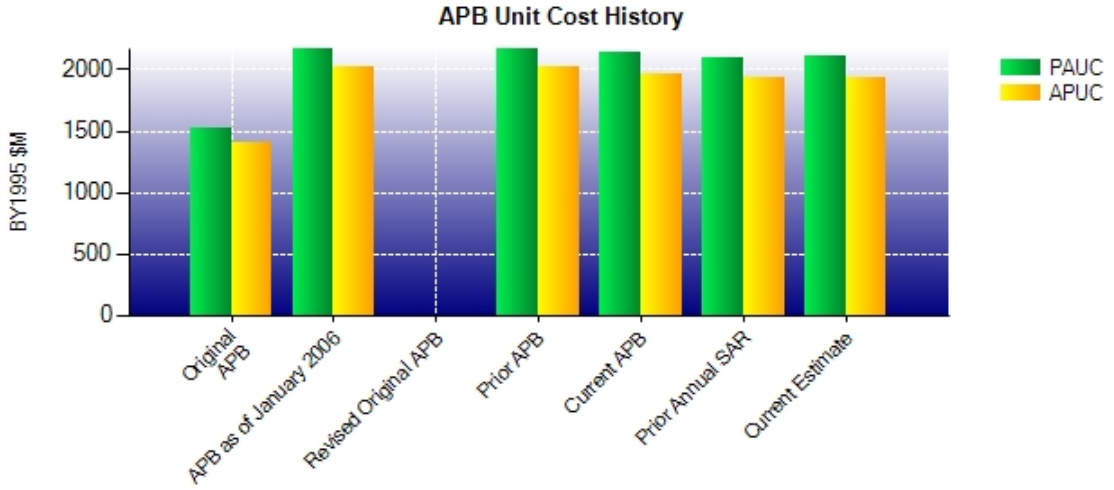
Unit Cost	BY1995 $M Current UCR Baseline (SEP 2010 APB)	BY1995 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	64353.6	63219.5	
Quantity	30	30	
Unit Cost	2145.120	2107.317	-1.76
Average Procurement Unit Cost (APUC)			
Cost	58933.2	57809.4	
Quantity	30	30	
Unit Cost	1964.440	1926.980	-1.91

Unit Cost	BY1995 $M Original UCR Baseline (JUN 1995 APB)	BY1995 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	45633.1	63219.5	
Quantity	30	30	
Unit Cost	1521.103	2107.317	**+38.54** [1]
Average Procurement Unit Cost (APUC)			
Cost	42228.1	57809.4	
Quantity	30	30	
Unit Cost	1407.603	1926.980	**+36.90** [1]

[1] **Nunn-McCurdy Breach**

This program reflects a significant Nunn-McCurdy breach to the original baseline that was first reported in the December 2005 SAR. The supporting breach information and explanations can be found in the Unit Cost Report section of that SAR.

Unit Cost History



		BY1995 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	JUN 1995	1521.103	1407.603	2369.360	2242.227
APB as of January 2006	MAY 2005	2174.943	2021.430	2749.060	2578.850
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	MAY 2005	2174.943	2021.430	2749.060	2578.850
Current APB	SEP 2010	2145.120	1964.440	3106.910	2895.203
Prior Annual SAR	DEC 2009	2099.480	1937.433	3046.463	2864.410
Current Estimate	DEC 2010	2107.317	1926.980	3102.303	2891.650

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY $M)

Initial PAUC Dev Est	Changes								PAUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2369.360	-110.543	0.000	259.820	42.410	505.596	9.333	26.327	732.943	3106.910

Current SAR Baseline to Current Estimate (TY $M)

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
3106.910	55.860	0.000	0.000	0.000	-58.707	0.000	-1.760	-4.607	3102.303

Initial SAR Baseline to Current SAR Baseline (TY $M)

Initial APUC Dev Est	Changes								APUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2242.227	-103.557	0.000	259.820	36.360	421.140	9.333	26.327	649.423	2895.203

Current SAR Baseline to Current Estimate (TY $M)

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2895.203	56.507	0.000	0.000	0.000	-58.300	0.000	-1.760	-3.553	2891.650

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	N/A	AUG 1994	AUG 1994	AUG 1994
Milestone II	N/A	JUN 1995	JUN 1995	JUN 1995
Milestone III	N/A	OCT 2007	JUL 2010	SEP 2010
IOC	N/A	OCT 2005	NOV 2006	MAR 2007
Total Cost (TY $M)	N/A	71080.8	93207.3	93069.1
Total Quantity	N/A	30	30	30
Prog. Acq. Unit Cost (PAUC)	N/A	2369.360	3106.910	3102.303

Cost Variance

Cost Variance Summary

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	6351.2	86856.1	--	93207.3
Previous Changes				
Economic	-16.1	+502.7	--	+486.6
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+16.1	-502.5	--	-486.4
Other	--	--	--	--
Support	--	-0.2	--	-0.2
Subtotal	--	--	--	--
Current Changes				
Economic	-3.3	+1192.5	--	+1189.2
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-28.3	-1246.5	--	-1274.8
Other	--	--	--	--
Support	--	-52.6	--	-52.6
Subtotal	-31.6	-106.6	--	-138.2
Total Changes	-31.6	-106.6	--	-138.2
CE - Cost Variance	6319.6	86749.5	--	93069.1
CE - Cost & Funding	6319.6	86749.5	--	93069.1

Summary Base Year 1995 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	5420.4	58933.2	--	64353.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+11.1	-324.5	--	-313.4
Other	--	--	--	--
Support	--	-0.1	--	-0.1
Subtotal	+11.1	-324.6	--	-313.5
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-21.4	-761.0	--	-782.4
Other	--	--	--	--
Support	--	-38.2	--	-38.2
Subtotal	-21.4	-799.2	--	-820.6
Total Changes	-10.3	-1123.8	--	-1134.1
CE - Cost Variance	5410.1	57809.4	--	63219.5
CE - Cost & Funding	5410.1	57809.4	--	63219.5

Previous Estimate: September 2010

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-3.3
Adjustment for current and prior escalation. (Estimating)	-0.2	-0.2
Revised estimates due to refinement of requirements. (Estimating)	-21.2	-28.1
RDT&E Subtotal	-21.4	-31.6

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+1192.5
Adjustment for current and prior escalation. (Estimating)	-211.7	-320.9
Revised estimates for Post Delivery SCN (Estimating)	+6.6	+8.0
Revised estimates for ship endcost (Estimating)	-44.5	-69.3
Revised estimate for labor and material. Pricing of construction material and labor is at higher, industry specific rates. Savings due to increase in OMB/OSD inflation indices between FY 2011 and FY 2012 narrowing the gap between OMB/OSD and VIRGINIA Class pricing (Estimating)	-511.4	-864.3
Adjustment for current and prior escalation. (Support)	-1.0	-1.2
Revised estimate for Outfitting Spares (APPN 1611) (Support)	-13.4	-19.7
Revised estimate for OPN Spares (APPN 1810) (Support)	-23.8	-31.7
Procurement Subtotal	-799.2	-106.6

Contracts

Appropriation: Procurement	
Contract Name	**SSN 781**
Contractor	Gen Dyn, EB Corp
Contractor Location	Groton, CT 06340
Contract Number, Type	N00024-03-C-2101/4, FPIF
Award Date	August 14, 2003
Definitization Date	August 14, 2003

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1465.0	1615.6	N/A	1505.2	1660.9	N/A	1500.0	1500.0

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/25/2010)	-16.2	-21.7
Previous Cumulative Variances	-41.3	-36.0
Net Change	+25.1	+14.3

Cost And Schedule Variance Explanations

There was favorable net change in cost variance of $25.1M and a favorable net change in schedule variance of $14.3M. These provide evidence that the shipbuilder's recovery plan may be taking effect. The plan of action going forward will continue to include bi-weekly production meetings and quarterly production progress conferences with the shipbuilders.

Contract Comments

Current Contract Price increases as contract changes are authorized.

Appropriation: Procurement

Contract Name	**SSN 782**
Contractor	Gen Dyn, EB Corp
Contractor Location	Groton, CT 06340
Contract Number, Type	N00024-03-C-2101/5, FPIF
Award Date	August 14, 2003
Definitization Date	August 14, 2003

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1368.3	1552.4	1	1520.0	1675.7	1	1512.1	1516.3

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/25/2010)	+17.3	-11.8
Previous Cumulative Variances	+4.3	-4.2
Net Change	+13.0	-7.6

Cost And Schedule Variance Explanations

The favorable net change in cost variance of $13.0M was due, in part, to the shipbuilder turning around labor issues in quality and workmanship. Corrective action plans implemented in the past year seem to be working. There was an unfavorable net change in schedule variance of $7.6M. The plan of action will included continual interface with the shipbuilders through bi-weekly production meetings and quarterly production progress conferences.

Contract Comments

Current Contract Price increases as contract changes are authorized.

Appropriation: Procurement

Contract Name	**SSN 783**
Contractor	Gen Dyn, EB Corp
Contractor Location	Groton, CT 06340
Contract Number, Type	N00024-03-C-2101/6, FPIF
Award Date	August 14, 2003
Definitization Date	August 14, 2003

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1349.9	1532.6	1	1508.7	1663.4	1	1539.8	1596.8

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/25/2010)	-33.8	-15.3
Previous Cumulative Variances	-69.5	-34.3
Net Change	+35.7	+19.0

Cost And Schedule Variance Explanations

There was a favorable net change in cost variance of $35.7M as well as a favorable net change in schedule variance of $19.0M. These are due, in large part to the shipbuilder resolving some of the earlier workmanship and quality issues and making significant production progress. Corrective action plans implemented in the past year seem to be working.

Contract Comments

Current Contract Price increases as contract changes are authorized.

Appropriation: Procurement

Contract Name	**SSN 784**
Contractor	Gen Dyn, EB Corp
Contractor Location	Groton, CT 06340
Contract Number, Type	N00024-09-C-2104/1, FPIF
Award Date	December 22, 2008
Definitization Date	December 22, 2008

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1717.1	1899.5	1	1858.0	2007.1	1	1852.5	1873.2

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/25/2010)	-34.2	-10.0
Previous Cumulative Variances	-62.2	-12.1
Net Change	+28.0	+2.1

Cost And Schedule Variance Explanations

There is a favorable net cost variance of $28.0M and a favorable net schedule variance of $2.1M, which, along with very good CPI and SPI, demonstrate that shipbuilder performance is moving in the right direction, although still early in production.

Contract Comments

Current Contract Price increases as contract changes are authorized.

Appropriation: Procurement

Contract Name	**SSN 785**
Contractor	Gen Dyn, EB Corp
Contractor Location	Groton, CT 06340
Contract Number, Type	N00024-09-C-2104/2, FPIF
Award Date	December 22, 2008
Definitization Date	December 22, 2008

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1646.7	1821.6	1	1760.6	1898.7	1	1759.4	1820.2

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/25/2010)	-9.8	+5.9
Previous Cumulative Variances	-2.9	-23.8
Net Change	-6.9	+29.7

Cost And Schedule Variance Explanations

This contract has an unfavorable net change in cost variance of $6.9M and a favorable net change in schedule variance of $29.7M. This hull is at an early stage of construction and most of the cost at this point is attributed to the procurement of long lead time material.

Contract Comments

Current Contract Price increases as contract changes are authorized.

Appropriation: Procurement

Contract Name	**Lead Yard Services**
Contractor	Gen Dyn, EB Corp
Contractor Location	Groton, CT 06340
Contract Number, Type	N00024-10-C-2118, CPFF
Award Date	July 02, 2010
Definitization Date	July 02, 2010

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
171.9	N/A	N/A	107.0	N/A	N/A	107.0	107.0

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this CPFF contract.

Contract Comments

The Lead Yard Services contract provides design studies, engineering, material and logistics support and research and development activities on the baseline VIRGINIA design. This is an incrementally funded level of effort contract and not subject to earned value performance reporting. This is the first report for this contract.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	6	7	30	23.33%
Total Program Quantities Delivered	6	7	30	23.33%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	93069.1	Years Appropriated	20
Expenditures To Date	31883.8	Percent Years Appropriated	55.56%
Percent Expended	34.26%	Appropriated to Date	45251.4
Total Funding Years	36	Percent Appropriated	48.62%

The seventh ship of the VIRGINIA Class, USS MISSOURI (SSN 780), was delivered in July 2010, nine months ahead of contract delivery.

Expenditure data as of December 30, 2010.

Operating and Support Cost

Assumptions And Ground Rules

Operating and Support Cost for the VIRGINIA Class estimates the anticipated cost to operate a representative, deployable total force of 30 submarines over a service life of 33 years per hull. The analysis includes description of input data and detailed Cost Element Structure reporting in the format recommended by the Office of the Secretary of Defense (OSD), Cost Analysis Improvement Group (CAIG).

Visibility and Management of Operation and Support Cost (VAMOSC) data for LOS ANGELES Class and VIRGINIA Class actuals were used to construct the estimate. The estimate includes costs for Unit Level Manpower, Unit Operations, Maintenance, Sustaining Support, Continuing System Improvements, and Indirect Support. Unit Level Manpower was estimated based on the crew description contained in the Manning Estimate Report (MER) (15 officers, 120 enlisted), and the direct personnel costs using VIRGINIA Class rates factored for VIRGINIA Class crew size. Unit Operations was based on historical LOS ANGELES Class data and factored by power, weight, or crew size. Maintenance was estimated based on historical LOS ANGELES Class maintenance costs factored for the VIRGINIA Class based on weight. Public and private shipyard data was used, as well as the maintenance schedule provided in the CARD to appropriately phase maintenance costs over the service life of the submarines. Sustaining Support was estimated based on historical LOS ANGELES Class data factored by weight or crew size, depending on the individual element. Continuing System Improvements were estimated based on historical LOS ANGELES Class data factored by weight. The Software Maintenance portion was based on the analysis of DDG 51 cost per line of code and factored by the total Source Lines of Code count contained in the CARD. Indirect Support was based on historical infrastructure costs from U.S. Naval Submarine Bases, as well as historical personnel costs from LOS ANGELES Class which were factored for the VIRGINIA Class crew size.

The source of this data is the VIRGINIA Class MSIII Program Life Cycle Cost Estimate (PLCCE) dated June 2010, which uses the CAIG's six element cost classification system. The source of antecedent data is VAMOSC data for LOS ANGELES Class (SSN 688) submarines for the years 1984-2008, however, this data must be adjusted due to significant differences between the two classes, to achieve a comparable estimate. The 688 Class was comprised of 62 ships with major design changes in blocks of ships that had an original planned life of 30 years. Some of these 62 ships were retired at mid-life and, therefore, did not incur normal life of ship maintenance and operating costs.

There are several factors contributing to an apparent anomaly between the SSN 774 and SSN 688 per ship Unit Level Manpower costs. The costs for SSN 688 are lower than SSN 774 despite a larger crew size for SSN 688 due to the source and timing of the data. SSN 688 costs are extracted from VAMOSC using class average data 1984 - 2008. Manpower costs for the first several years of the data were approximately 65% of the most recent costs for the SSN 688 Class indicating real growth in pay and allowances (i.e., above inflation) over the period. The overall average, however, is significantly influenced by the lower initial costs. Further, 688 VAMOSC data reflect the average annual cost of ships in the fleet. VIRGINIA estimates were built using a ramp up/ramp down methodology and reflect the total annual manpower costs for the program from assignment of the first pre-commissioning crew of the lead ship through decommisioning of the last ship.

Costs BY1995 $M		
Cost Element	**SSN 774 Average Annual Cost per Ship**	**LOS ANGELES CLASS Average Annual Cost per Ship**
Unit-Level Manpower	8.98	5.45
Unit Operations	0.74	0.70
Maintenance	13.98	15.03
Sustaining Support	0.96	0.99
Continuing System Improvements	6.37	4.24
Indirect Support	4.37	4.11
Other	1.19	1.17
Total Unitized Cost (Base Year 1995 $)	36.59	31.69

Total O&S Costs $M	SSN 774	LOS ANGELES CLASS
Base Year	36216.6	--
Then Year	98758.7	--

The Other category depicts estimated disposal costs for each class.