



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-178



Trident II (D-5) Sea-Launched Ballistic Missile UGM 133A (Trident II Missile)

As of FY 2011 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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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

Sea Launched Ballistic Missile-UGM 133A TRIDENT II (D-5) Missile (TRIDENT II MISSILE)

DoD Component

Navy

Responsible Office

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References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated July 15, 1987

Approved APB

Navy Acquisition Executive Approved Acquisition Program Baseline (APB) dated June 8, 2002

Mission and Description

The TRIDENT II (D-5) Strategic Weapons System (SWS) program developed an improved Submarine Launched Ballistic Missile (SLBM) with greater accuracy and payload capability at equivalent ranges as compared to the TRIDENT I (C-4) system. TRIDENT II enhances U.S. strategic deterrence by providing a survivable sea-based system capable of engaging the full spectrum of potential targets. It enhances the U.S. position in strategic arms negotiation by providing a weapon system with performance and payload flexibility that accommodates various treaty initiatives. TRIDENT II's increased payload allows the deterrent mission to be achieved with fewer submarines.

Executive Summary

FY 2009 saw the 130th successful flight test for the TRIDENT II missile. The Program Manager continues to ensure that reliability maintenance and surveillance efforts will allow the missile life to match that of the submarine.

Procurement funding for TRIDENT II missile includes program and production support costs (including flight test instrumentation and additional reentry system hardware) and the D-5 Life Extension program. Strategic Systems Programs (SSP) is executing in accordance with the production continuity procurement strategy approved by Congress and the DoD.

The D-5 Life Extension program is in the process of restructuring the program to support the additional redesign efforts for the four missile electronics packages: Flight Control Electronics Assembly; Command Sequencer; Missile Inverter; and Interlocks. The Flight Control Electronics Assembly, the most complex of the four packages, is on schedule and completed its Critical Design Review (CDR) in October 2009. The remaining three packages require an additional system critical design iteration to achieve CDR resulting in an overall estimated four year slip in Initial Operational Capability (IOC) from FY 2013 to FY 2017. In accordance with a component based procurement strategy, the remaining 90% of the missile component procurement remains on track.

TRIDENT II is experiencing cost increases in the area of Solid Rocket Motor (SRM) production. Additional funding was provided to fund unit cost increases as a result of a declining industrial base. In FY 2007, the Air Force issued their last Minuteman remotoring contract and the National Aeronautics and Space Administration (NASA) recently has reduced their solid rocket motor production. NASA and the Air Force have significantly contributed to sharing overhead costs in the past, however the completion of Minuteman, combined with NASA's reduction in SRM demand, has significantly impacted the Navy's cost of production of the TRIDENT II missile.

Funding was provided through FY 2015 for the continuous production of energetic components for rocket motors at minimum sustaining. The D-5 motor life was designed to last 25 years. With the majority of TRIDENT II missile motors being produced between 1987 and 1993, these motors are now approaching their expected designed life. Failure to maintain this low rate production would result in a production gap and significant start-up and redesign costs to ensure TRIDENT II reliability.

Over sixty percent of the strategic deterrent is homeported on the West Coast. Presently, the single Explosive Handling Wharf (EHW) is not able to meet current fleet operational requirements and is experiencing accelerated degradation of major load bearing piles. The requirement for a second EHW was reaffirmed by the Resource Requirements Review Board (R3B) chaired by the Vice Chief of Naval Operations on March 16, 2009.

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

Threshold Breaches

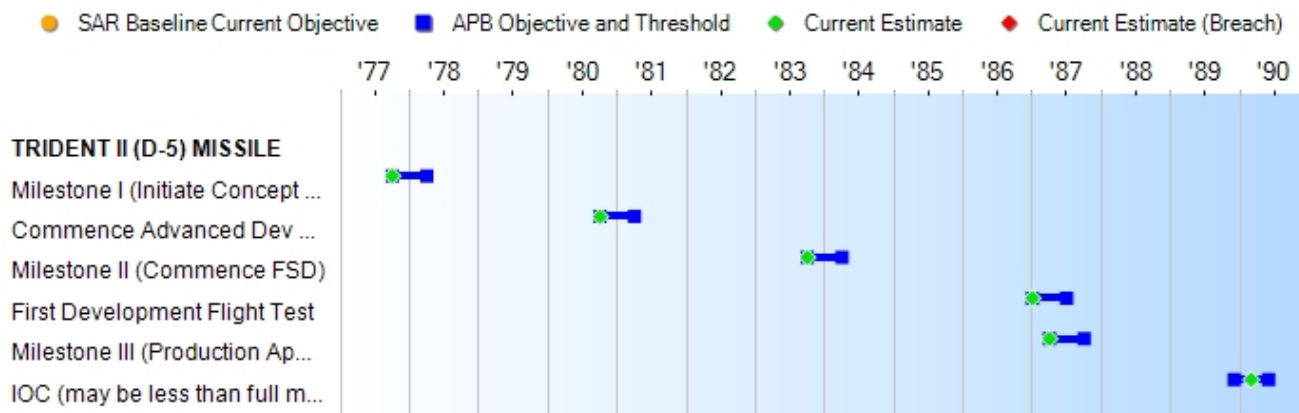
APB Breaches

Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches

Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate
Milestone I (Initiate Concept Definition)	Oct 1977	Oct 1977	Apr 1978	Oct 1977
Commence Advanced Dev Phase	Oct 1980	Oct 1980	Apr 1981	Oct 1980
Milestone II (Commence FSD)	Oct 1983	Oct 1983	Apr 1984	Oct 1983
First Development Flight Test	Jan 1987	Jan 1987	Jul 1987	Jan 1987
Milestone III (Production Approval)/ Award Initial Missile Production	Apr 1987	Apr 1987	Oct 1987	Apr 1987
IOC (may be less than full msl outload)	Dec 1989	Dec 1989	Jun 1990	Mar 1990

Change Explanations

None

Acronyms and Abbreviations

Dev - Development
 FSD - Full Scale Development
 IOC - Initial Operational Capability
 msl - missile

Performance

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

Track to Budget

RDT&E

Appn	BA	PE	
Navy	1319	04	0603371N
	Project	Name	
	0951	TRIDENT II/TRIDENT II (Sunk)	
Navy	1319	04	0604327N
	Project	Name	
	9611	HARD AND DEEPLY BURIED TARGET (Sunk) DEFEAT SYSTEM/Advanced Conventional Strike Capability Demonstration	
Navy	1319	04	0604363N
	Project	Name	
	0951	TRIDENT II/TRIDENT II (Sunk)	

Procurement

Appn	BA	PE	
Navy	1507	01	0101228N
	Line Item	Name	
	1150	TRIDENT II (D-5) Missile (Sunk)	
	1250	TRIDENT MODS	

MILCON

Appn	BA	PE	
Navy	1205	01	0202576N
	Project	Name	
		Facilities Restoration and (Shared) (Sunk) MOD- Grounds	
Navy	1205	01	0203176N
	Project	Name	
		Facilities Restoration and (Shared) (Sunk) MOD- Fleet Ops	
Navy	1205	01	0212576N
	Project	Name	
		Facilities New Footprint (Shared) (Sunk)	
Navy	1205	01	0703676N
	Project	Name	
		Facility Restoration and MOD - (Shared) (Sunk) Maint and Prod	
Navy	1205	01	0805976N
	Project	Name	

Facility Restoration and MOD - (Shared) (Sunk)
Training

Navy 1205 01 0101221N

Project	Name
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Fleet Ballistic Missile (Shared)

Notes: (Projects 321, 945, 955, 903, 964, 965, 978, 618)

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 1983 \$M			BY 1983 \$M	TY \$M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	8434.9	8414.8	9256.3	8445.9	9453.2	9411.3	9430.7
Procurement	17588.5	17155.2	18870.7	17957.5	25396.9	27683.7	29630.6
Flyaway	--	--	--	13769.2	--	--	22797.2
Recurring	--	--	--	13769.2	--	--	22797.2
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	4188.3	--	--	6833.4
Other Support	--	--	--	4164.7	--	--	6798.0
Initial Spares	--	--	--	23.6	--	--	35.4
MILCON	532.9	373.7	411.1	391.8	668.4	448.9	484.7
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	26556.3	25943.7	N/A	26795.2	35518.5	37543.9	39546.0

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E		30	28
Procurement		815	540
Total		845	568

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2011 President's Budget / December 2009 SAR (TY\$ M)									
Appropriation	Prior	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	To Complete	Total
RDT&E	9430.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9430.7
Procurement	21368.6	1052.2	1106.9	1123.3	1019.0	711.7	740.1	2508.8	29630.6
MILCON	470.3	0.0	0.0	0.0	0.0	0.0	14.4	0.0	484.7
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2011 Total	31269.6	1052.2	1106.9	1123.3	1019.0	711.7	754.5	2508.8	39546.0
PB 2009 Total	31295.7	1100.4	1113.3	1137.5	1150.9	675.9	653.1	1690.6	38817.4
Delta	-26.1	-48.2	-6.4	-14.2	-131.9	35.8	101.4	818.2	728.6

Quantity Summary										
FY 2011 President's Budget / December 2009 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	To Complete	Total
Development	28	0	0	0	0	0	0	0	0	28
Production	0	461	24	24	24	0	0	0	0	533
PB 2011 Total	28	461	24	24	24	0	0	0	0	561
PB 2009 Total	28	461	24	24	24	0	0	0	0	561
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
1978	--	--	--	--	--	--	5.0
1979	--	--	--	--	--	--	5.0
1980	--	--	--	--	--	--	25.6
1981	--	--	--	--	--	--	96.7
1982	--	--	--	--	--	--	198.4
1983	--	--	--	--	--	--	351.0
1984	--	--	--	--	--	--	1447.3
1985	--	--	--	--	--	--	1982.6
1986	--	--	--	--	--	--	1942.3
1987	--	--	--	--	--	--	1565.3
1988	--	--	--	--	--	--	1029.7
1989	--	--	--	--	--	--	546.5
1990	--	--	--	--	--	--	169.5
1991	--	--	--	--	--	--	43.0
1992	--	--	--	--	--	--	2.2
1993	--	--	--	--	--	--	0.4
1994	--	--	--	--	--	--	--
1995	--	--	--	--	--	--	0.5
1996	--	--	--	--	--	--	0.3
1997	--	--	--	--	--	--	--
1998	--	--	--	--	--	--	--
1999	--	--	--	--	--	--	--
2000	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--
2002	--	--	--	--	--	--	--
2003	--	--	--	--	--	--	--
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	19.4
Subtotal	28	--	--	--	--	--	9430.7

Annual Funding 1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 1983 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1978	--	--	--	--	--	--	7.2
1979	--	--	--	--	--	--	6.5
1980	--	--	--	--	--	--	30.1
1981	--	--	--	--	--	--	104.2
1982	--	--	--	--	--	--	203.1
1983	--	--	--	--	--	--	343.9
1984	--	--	--	--	--	--	1368.5
1985	--	--	--	--	--	--	1818.1
1986	--	--	--	--	--	--	1731.2
1987	--	--	--	--	--	--	1355.1
1988	--	--	--	--	--	--	862.6
1989	--	--	--	--	--	--	439.3
1990	--	--	--	--	--	--	130.9
1991	--	--	--	--	--	--	32.1
1992	--	--	--	--	--	--	1.6
1993	--	--	--	--	--	--	0.3
1994	--	--	--	--	--	--	--
1995	--	--	--	--	--	--	0.3
1996	--	--	--	--	--	--	0.2
1997	--	--	--	--	--	--	--
1998	--	--	--	--	--	--	--
1999	--	--	--	--	--	--	--
2000	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--
2002	--	--	--	--	--	--	--
2003	--	--	--	--	--	--	--
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	10.7
Subtotal	28	--	--	--	--	--	8445.9

The \$19.4M in FY 2007 supported Conventional TRIDENT Modification (CTM) study efforts as part of an overall DoD study.

This Research, Development, Test and Evaluation, Navy (RDT&EN) funding profile does not match that found in the FY 2011 President's Budget. The funding currently budgeted for RDT&EN is not associated with TRIDENT II missile acquisition and, hence, is not reflected in the SAR.

Annual Funding 1507 Procurement Weapons Procurement, Navy								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
1985	--	--	--	--	--	160.8	160.8	
1986	--	--	--	--	--	508.4	508.4	
1987	21	1051.6	--	--	1051.6	295.3	1346.9	
1988	66	1710.0	--	--	1710.0	323.5	2033.5	
1989	66	1586.8	--	--	1586.8	252.2	1839.0	
1990	41	1114.2	--	--	1114.2	286.4	1400.6	
1991	52	1242.9	--	--	1242.9	269.5	1512.4	
1992	28	817.6	--	--	817.6	279.3	1096.9	
1993	21	719.6	--	--	719.6	258.5	978.1	
1994	24	989.2	--	--	989.2	111.5	1100.7	
1995	18	606.5	--	--	606.5	58.9	665.4	
1996	6	186.5	--	--	186.5	324.2	510.7	
1997	7	209.1	--	--	209.1	108.1	317.2	
1998	5	150.8	--	--	150.8	117.7	268.5	
1999	5	189.3	--	--	189.3	126.4	315.7	
2000	12	362.7	--	--	362.7	122.7	485.4	
2001	12	355.2	--	--	355.2	81.9	437.1	
2002	12	378.8	--	--	378.8	154.0	532.8	
2003	12	553.5	--	--	553.5	19.5	573.0	
2004	12	640.0	--	--	640.0	0.9	640.9	
2005	5	612.9	--	--	612.9	102.4	715.3	
2006	--	708.9	--	--	708.9	196.3	905.2	
2007	--	766.7	--	--	766.7	147.4	914.1	
2008	12	862.7	--	--	862.7	179.1	1041.8	
2009	24	889.2	--	--	889.2	179.0	1068.2	
2010	24	867.7	--	--	867.7	184.5	1052.2	
2011	24	922.9	--	--	922.9	184.0	1106.9	
2012	24	863.6	--	--	863.6	259.7	1123.3	
2013	--	710.9	--	--	710.9	308.1	1019.0	
2014	--	480.2	--	--	480.2	231.5	711.7	
2015	--	510.7	--	--	510.7	229.4	740.1	
2016	--	364.5	--	--	364.5	235.2	599.7	
2017	--	357.9	--	--	357.9	213.7	571.6	
2018	--	218.1	--	--	218.1	171.7	389.8	
2019	--	201.5	--	--	201.5	25.5	227.0	
2020	--	201.9	--	--	201.9	20.7	222.6	
2021	--	181.6	--	--	181.6	34.1	215.7	
2022	--	167.8	--	--	167.8	9.5	177.3	
2023	--	43.2	--	--	43.2	61.9	105.1	
Subtotal	533	22797.2	--	--	22797.2	6833.4	29630.6	

Annual Funding 1507 Procurement Weapons Procurement, Navy								
Fiscal Year	Quantity	BY 1983 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
1985	--	--	--	--	--	137.7	137.7	
1986	--	--	--	--	--	420.7	420.7	
1987	21	839.8	--	--	839.8	235.8	1075.6	
1988	66	1314.1	--	--	1314.1	248.6	1562.7	
1989	66	1173.3	--	--	1173.3	186.5	1359.8	
1990	41	796.4	--	--	796.4	204.7	1001.1	
1991	52	866.5	--	--	866.5	187.8	1054.3	
1992	28	555.9	--	--	555.9	189.9	745.8	
1993	21	480.5	--	--	480.5	172.6	653.1	
1994	24	647.8	--	--	647.8	73.0	720.8	
1995	18	390.9	--	--	390.9	38.0	428.9	
1996	6	118.7	--	--	118.7	206.5	325.2	
1997	7	131.8	--	--	131.8	68.2	200.0	
1998	5	94.0	--	--	94.0	73.3	167.3	
1999	5	116.5	--	--	116.5	77.8	194.3	
2000	12	220.2	--	--	220.2	74.6	294.8	
2001	12	213.0	--	--	213.0	49.1	262.1	
2002	12	224.7	--	--	224.7	91.4	316.1	
2003	12	321.8	--	--	321.8	11.3	333.1	
2004	12	361.3	--	--	361.3	0.5	361.8	
2005	5	336.8	--	--	336.8	56.2	393.0	
2006	--	380.0	--	--	380.0	105.3	485.3	
2007	--	402.3	--	--	402.3	77.4	479.7	
2008	12	446.0	--	--	446.0	92.6	538.6	
2009	24	454.1	--	--	454.1	91.5	545.6	
2010	24	437.5	--	--	437.5	93.0	530.5	
2011	24	458.3	--	--	458.3	91.4	549.7	
2012	24	421.8	--	--	421.8	126.8	548.6	
2013	--	341.4	--	--	341.4	147.9	489.3	
2014	--	226.7	--	--	226.7	109.4	336.1	
2015	--	237.1	--	--	237.1	106.5	343.6	
2016	--	166.4	--	--	166.4	107.4	273.8	
2017	--	160.7	--	--	160.7	95.9	256.6	
2018	--	96.3	--	--	96.3	75.8	172.1	
2019	--	87.5	--	--	87.5	11.0	98.5	
2020	--	86.2	--	--	86.2	8.8	95.0	
2021	--	76.2	--	--	76.2	14.3	90.5	
2022	--	69.2	--	--	69.2	4.0	73.2	
2023	--	17.5	--	--	17.5	25.1	42.6	
Subtotal	533	13769.2	--	--	13769.2	4188.3	17957.5	

The funding profile for Procurement (WPN) does not match that found in the FY 2011 President's Budget for WPN after FY 2013. Beginning in FY 2014, a portion of the WPN funding migrates to Operating and Support (O&S) Costs in the SAR and, hence, is not reflected in the TRIDENT II missile acquisition.

The amounts for O&S costs are as follows:

FY 2014 - \$271.7

FY 2015 - \$263.3

Cost Quantity Information 1507 Procurement Weapons Procurement, Navy		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 1983 \$M
1985	--	--
1986	--	--
1987	21	737.5
1988	66	1068.2
1989	66	927.3
1990	41	796.4
1991	52	901.9
1992	28	541.8
1993	21	480.5
1994	24	647.8
1995	18	390.9
1996	6	118.7
1997	7	131.9
1998	5	94.0
1999	5	116.5
2000	12	220.4
2001	12	213.1
2002	12	224.7
2003	12	321.8
2004	12	779.6
2005	5	827.3
2006	--	--
2007	--	--
2008	12	629.0
2009	24	1015.2
2010	24	1040.4
2011	24	918.0
2012	24	626.3
2013	--	--

2014	--	--
2015	--	--
2016	--	--
2017	--	--
2018	--	--
2019	--	--
2020	--	--
2021	--	--
2022	--	--
2023	--	--
<hr/>		
Subtotal	533	13769.2

Annual Funding 1205 MILCON Military Construction, Navy and Marine Corps	
Fiscal Year	TY \$M
	Total Program
1984	79.3
1985	82.4
1986	126.3
1987	21.0
1988	18.1
1989	15.4
1990	7.6
1991	70.5
1992	--
1993	--
1994	--
1995	--
1996	--
1997	--
1998	--
1999	--
2000	5.7
2001	1.1
2002	4.2
2003	7.2
2004	--
2005	--
2006	2.8
2007	--
2008	28.7
2009	--
2010	--
2011	--
2012	--
2013	--
2014	--
2015	14.4
Subtotal	484.7

Annual Funding 1205 MILCON Military Construction, Navy and Marine Corps	
Fiscal Year	BY 1983 \$M
	Total Program
1984	72.8
1985	73.4
1986	109.3
1987	17.6
1988	14.6
1989	12.0
1990	5.7
1991	51.3
1992	--
1993	--
1994	--
1995	--
1996	--
1997	--
1998	--
1999	--
2000	3.6
2001	0.7
2002	2.6
2003	4.3
2004	--
2005	--
2006	1.6
2007	--
2008	15.4
2009	--
2010	--
2011	--
2012	--
2013	--
2014	--
2015	6.9
Subtotal	391.8

The gap between 1992 to 1999 was due to establishing the Pacific missile processing facilities on the West Coast.

The funding for Military Construction (MILCON) in the SAR does not match that reflected in the FY 2011 President's Budget. TRIDENT II Missile does not directly hold the funding for MILCON as that is managed by the Commander, Naval Installation Command (CNIC) and the Naval Facilities Command (NAVFAC). The projects reflected here are those that directly impact TRIDENT II missile acquisition.

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	10/30/1983	10/30/1983
Approved Quantity	21	21
Reference	Milestone II, ADM	Milestone II, ADM
Start Year	1983	1983
End Year	1987	1987

Foreign Military Sales

None

Nuclear Costs

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

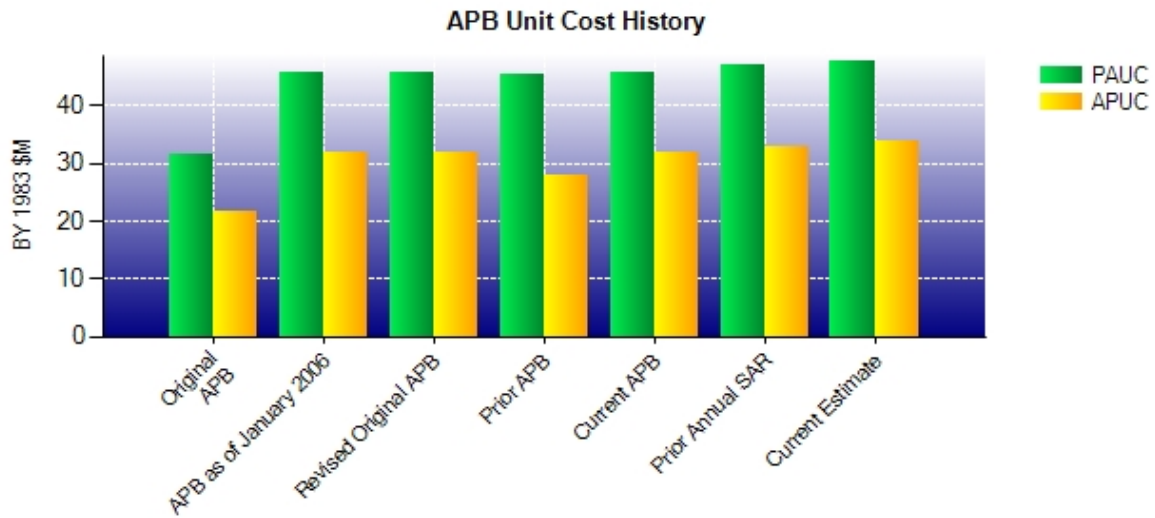
Unit Cost

Unit Cost Report

Item	BY 1983 \$M	BY 1983 \$M	% Change
	Current UCR Baseline (Jun 2002 APB)	Current Estimate (Dec 2009 SAR)	
Program Acquisition Unit Cost			
Cost	25943.7	26795.2	
Quantity	568	561	
Unit Cost	45.676	47.763	+4.57
Average Procurement Unit Cost			
Cost	17155.2	17957.5	
Quantity	540	533	
Unit Cost	31.769	33.691	+6.05

Item	BY 1983 \$M	BY 1983 \$M	% Change
	Revised Original UCR Baseline (Jun 2002 APB)	Current Estimate (Dec 2009 SAR)	
Program Acquisition Unit Cost			
Cost	25943.7	26795.2	
Quantity	568	561	
Unit Cost	45.676	47.763	+4.57
Average Procurement Unit Cost			
Cost	17155.2	17957.5	
Quantity	540	533	
Unit Cost	31.769	33.691	+6.05

Unit Cost History



Item	Date	BY 1983 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Jul 1987	31.428	21.581	42.034	31.162
APB as of January 2006	Jun 2002	45.676	31.769	66.098	51.266
Revised Original APB	Jun 2002	45.676	31.769	66.098	51.266
Prior APB	May 1995	45.200	27.878	60.973	42.213
Current APB	Jun 2002	45.676	31.769	66.098	51.266
Prior Annual SAR	Dec 2007	47.026	32.926	69.193	54.246
Current Estimate	Dec 2009	47.763	33.691	70.492	55.592

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
Initial PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
42.034	-0.854	9.302	3.232	0.180	12.087	0.000	4.511	28.458	70.492

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
31.162	-0.798	3.970	3.359	0.175	12.976	0.000	4.748	24.430	55.592

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	Oct 1977	Oct 1977	Oct 1977
Milestone II	N/A	Oct 1983	Oct 1983	Oct 1983
Milestone III	N/A	Mar 1987	Apr 1987	Apr 1987
IOC	N/A	Dec 1989	Dec 1989	Mar 1990
Total Cost (TY \$M)	N/A	37645.1	35518.5	39546.0
Total Quantity	N/A	740	845	561
PAUC	N/A	50.872	42.034	70.492

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	9453.2	25396.9	668.4	35518.5
Previous Changes				
Economic	-40.0	-182.8	-13.6	-236.4
Quantity	-48.0	-6671.1	--	-6719.1
Schedule	--	+1790.1	+26.4	+1816.5
Engineering	-0.8	+93.1	--	+92.3
Estimating	+66.3	+5851.7	-207.6	+5710.4
Other	--	--	--	--
Support	--	+2635.2	--	+2635.2
Subtotal	-22.5	+3516.2	-194.8	+3298.9
Current Changes				
Economic	+0.1	-242.7	-0.1	-242.7
Quantity	--	--	--	--
Schedule	--	--	-3.3	-3.3
Engineering	--	--	+8.5	+8.5
Estimating	-0.1	+1064.6	+6.0	+1070.5
Other	--	--	--	--
Support	--	-104.4	--	-104.4
Subtotal	--	+717.5	+11.1	+728.6
Total Changes	-22.5	+4233.7	-183.7	+4027.5
Current Estimate	9430.7	29630.6	484.7	39546.0

Summary BY 1983 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	8434.9	17588.5	532.9	26556.3
Previous Changes				
Economic	--	--	--	--
Quantity	-40.0	-3930.8	--	-3970.8
Schedule	--	--	--	--
Engineering	+1.3	+50.4	--	+51.7
Estimating	+49.7	+2726.3	-146.4	+2629.6
Other	--	--	--	--
Support	--	+1115.0	--	+1115.0
Subtotal	+11.0	-39.1	-146.4	-174.5
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	-1.7	-1.7
Engineering	--	--	+4.2	+4.2
Estimating	--	+452.1	+2.8	+454.9
Other	--	--	--	--
Support	--	-44.0	--	-44.0
Subtotal	--	+408.1	+5.3	+413.4
Total Changes	+11.0	+369.0	-141.1	+238.9
Current Estimate	8445.9	17957.5	391.8	26795.2

Previous Estimate: December 2007

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+0.1
Adjustment for current and prior escalation. (Estimating)	0.0	-0.1
RDT&E Subtotal	0.0	0.0

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-242.7
Adjustment for current and prior escalation. (Estimating)	+15.8	+31.3
Correction to align support and flyaway. (Subtotal)	0.0	0.0
(Support)	(+12.3)	(-1.8)
(Estimating)	(-12.3)	(+1.8)
Funding increase for Rocket Motor Unit Cost Increases. (Estimating)	+109.9	+229.0
Funding realigned from Missile procurement to Other Procurement in support of the Electro Static Gyro Navigator Replacement Program. (Estimating)	-61.1	-127.0
Increase in funding for D5 Life Extension (LE) missile electronics redesign (Estimating)	+421.8	+877.3
Realignment of D5 LE Missile and guidance electronics alteration kits for initial operational capability (IOC) shift of FY 2013 to FY 2017. (Estimating)	-22.0	+52.2
Decrease in Other Support. (Support)	-60.2	-110.0
Adjustment for current and prior escalation. (Support)	+3.9	+7.4
Procurement Subtotal	+408.1	+717.5

MILCON	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.1
Adjustment to Prior and Current Year Escalation. (Estimating)	0.0	+0.1
Revised Estimate as a result of realignment of the Transporter Maintenance Bay project (903) from FY 2012 to FY 2015. (Estimating)	+2.8	+5.9
Project 903 - Transporter Maintenance Bay - realigned from FY 2012 to FY 2015. (Schedule)	-1.7	-3.3
Addition of Project 618 - 3 Missile Motor Magazines- for the Strategic Weapons Facility, Pacific. (Engineering)	+4.2	+8.5
MILCON Subtotal	+5.3	+11.1

Contracts

Contract Identification							
--------------------------------	--	--	--	--	--	--	--

Appropriation: Procurement
Contract Name: FY 2006 MISSILE FOLLOW ON PROCUR
Contractor: LOCKHEED MARTIN SPACE SYS
Contractor Location: SUNNYVALE, CA 94088
Contract Number: N00030-05-C-0100
Contract Type: Cost Plus Incentive Fee (CPIF), Cost Plus Fixed Fee (CPFF)
Award Date: October 01, 2005
Definitization Date: December 19, 2005

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
885.7	N/A	0	885.1	N/A	0	935.9	935.9

Target Price Change Explanation							
--	--	--	--	--	--	--	--

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/28/2009)	-15.2	-4.4
Previous Cumulative Variances	-1.3	-5.9
Net Change	-13.9	+1.5

Cost and Schedule Variance Explanations**General Contract Variance Explanation**

The favorable schedule variance net change of \$1.5M was due to several minor miscellaneous changes.

The unfavorable cost variance net change of \$13.9M was due to the following:

- 1) System Acceptance and Checkout Equipment (SACE) integration into D5 Life Extension (LE) and its subsequent removal from the LE Program Plan. This integration required the team to replan the milestones to align with LE, requiring updates to schedules, data products, and processes. The initial integration with LE extended the development by 22 months. When the decision to integrate with LE was reversed, this again caused updates to schedules and data products. The initial program plan called for 1 pre-production unit and 5 production units. To meet end product delivery dates the program made the decision to build 2 pre-production units to allow for parallel development.
- 2) Test Missile Kit (TMK): Late deliveries from the supplier slipped the development effort and resulted in additional production services and program management support costs.
- 3) LE Production Test Console (PTC) and Engineering Test Console (ETC) development issues as well as LE Missile Inverter supplier issues added additional cost growth to this contract.

Notes

The EAC increased \$3.4M due to the New Test Missile Kit cost growth.

The increase in the contract price from the initial contract price is due to the increase in the level of effort for Deployed Systems and Support.

the \$0.6M decrease in the Current Contract Price from the Initial Contract Price was due to not including the level of effort (LOE) modification changes.

The change in program manager's estimated price at completion from the December 2006 SAR to the December 2007 SAR is primarily due to labor efficiencies in missile production.

Current target price is not equal to the Program Manager's Estimated Price at Completion due to efficiencies in motor production.

The Estimated Price does not include \$2.7M for earned Performance incentives, \$9.2M Life Extension Award Fee, and \$1.9M for Alliant Tech Services Motor supplier Performance Incentives which are not included in the Target Price.

The Performance Incentives (\$15.5M) are included in the Estimated Price at Completion.

Contract Identification

Appropriation: Procurement
Contract Name: FY 2007 Follow on Procurement
Contractor: Lockheed Martin Space Systems
Contractor Location: Sunnyvale, CA 94088
Contract Number: N00030-06-C-0100
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: October 01, 2006
Definitization Date: January 12, 2007

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
672.1	N/A	0	851.8	N/A	0	862.4	862.4

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/29/2010)	-7.2	-10.2
Previous Cumulative Variances	--	--
Net Change	-7.2	-10.2

Cost and Schedule Variance Explanations

General Contract Variance Explanation

The unfavorable schedule variance net change of \$10.2M is the result of the Integrated Valve Assemblies (IVA) delivery dates related to a weld contamination issue discovered at the supplier (Lockheed). Upon discovery, a stop-work was issued and caused the delivery delays. The program conducted a root cause analysis. The process was corrected and recertified and production resumed. However, the delivery schedule was impacted. The first deliveries, with the new process, occurred in February 2009. Full recovery from this issue is expected in June 2010.

The unfavorable cost variance net change of \$7.2M was due to Life Extension (LE) and Production cost growth issues:

- 1) Additional systems test support effort for Simulator Flight Test Equipment (SRTE) hardware and software integration rework and Thrust Vector Control console implementation troubleshooting. The additional efforts have been completed, however the cost growth is unrecoverable.
- 2) Production Test Console (PTC) design problems causing the Digital Data Processor (DDP) work to take longer to complete. Also, the PTC console restoration was more complex than originally anticipated, and senior personnel were reassigned to work the replanning efforts which added additional cost. Efforts are now complete however cost growth is unrecoverable.
- 3) Engineering Test Console (ETC) additional software testing effort resulting from LE interlocks and flight controls acceptance test requirements flow down. Reviews of test data resulted in engineering discoveries which led to additional effort to complete the console hardware/software Unit Under Test (UUT) integration. These efforts are now complete. Cost growth is unrecoverable.
- 4) Corrective actions to recover from the Integrated Valve Assembly (IVA) weld contamination required added cost to correct the issue. Cost growth is unrecoverable.
- 5) Test Missile Kit (TMK) had unanticipated issues and resultant rework efforts on the Destruct Interlock and Destruct Acceleration Switch occurred.

Notes

The increase of \$179.7M in the Current Contract Price from the Initial Contract Price is due to contract modifications for Test Missile Kit (TMK) and Life Extension (LE).

The Contractor's Estimated Price at Completion is more than the Current Contract Price by \$10.6M due to the incorporation of the Production Performance Incentives.

The Estimated Price at Completion increased over the Initial Target by \$190.3M due to the following:

- 1) The definitization of the TMK efforts;
- 2) The LE overrun for the additional resources required to complete the Engineering Test Console, the completion of the software coding, and the assembly of the Production Test Consoles; and
- 3) Additional resources required for the completion of the Simulation Flight Test Equipment (SFTE) in support of the system testing.

The Estimated Price at Completion does not include \$2.2M for motor supplier performance incentives which are not included in the Target Price.

Contract Identification

Appropriation: Procurement
Contract Name: FY 2008 Follow on Procurement
Contractor: Lockheed Martin Space Systems
Contractor Location: Sunnyvale, CA 94088
Contract Number: N00030-07-C-0100
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: October 01, 2007
Definitization Date: November 30, 2007

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
849.3	N/A	12	1105.7	N/A	12	1265.8	1265.8

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/29/2010)	+3.6	-3.4
Previous Cumulative Variances	--	--
Net Change	+3.6	-3.4

Cost and Schedule Variance Explanations**General Contract Variance Explanation**

The unfavorable schedule variance net change of \$3.4M is attributed to the Life Extension (LE) Development and LE Production line items as a result of a reprogramming implementation initiated in August 2009. The Program Manager and Lockheed Martin have completed the reprogramming of the FY 2008 contract base and the contract options and have rephased the missile development and production programs to account for the development schedule delays.

The net favorable cost variance of \$3.6M, but unfavorable value at completion of \$4.8M, is due to Production cost growth caused by increased hours in fabrication and assembly, increased computer services, increases in production services for Common Minor Material (CMM), additional delays and efforts in release assemblies, increased efforts in System Engineering, Integration and Test (SEIT), and increased Program Management and Integration disciplines support.

Notes

This is the first report for this contract.

The Contractor's Estimated Price at Completion is more than the Current Price by \$160.1M due to the definitization of the Test Missile Kit (TMK) and the Life Extension (LE) alteration kits line items and the increase to the Performance Incentive Fees as a result of these definitized efforts.

The increase of \$256.4M in the Current Contract Price over the Initial Contract Price is due to contract modifications/definitizations for the following efforts: Linatron storage; TMK; LE Development; LE Alteration Kits; and Igniter Redesign. Also included are the level of effort (LOE) contract modification increases for special programs and deployed systems support.

The Estimated Price at Completion does not include \$2.1M for motor supplier performance incentives which are not included in the target price.

Contract Identification

Appropriation: Procurement
Contract Name: FY 2008 Guidance Production
Contractor: Charles Stark Draper Laboratory
Contractor Location: Cambridge, MA 02139
Contract Number: N00030-08-C-0010
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: November 27, 2007
Definitization Date: November 27, 2007

Contract Price								
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
156.2	N/A	N/A	156.2	N/A	N/A	156.2	156.2	

Contract Variance			
Item	Cost Variance		Schedule Variance
Cumulative Variances To Date (2/27/2009)	-2.8		-4.4
Previous Cumulative Variances	--		--
Net Change	-2.8		-4.4

Cost and Schedule Variance Explanations

General Contract Variance Explanation

The unfavorable schedule variance net change of \$4.4M is the result of late material receipt in support of the accelerometer and gyroscopes. All deliveries should be complete by May 2010.

The unfavorable cost variance net change of \$2.8M is the result of an overrun attributed to a subcontractor's efforts for gyroscope and accelerometer production. The technical and manufacturing issues that resulted in the overrun have been resolved and no further cost changes are expected.

Notes

This is the first and final report for this contract as the total contract is 97% complete and will complete on budget.

Contract Identification

Appropriation: Procurement
Contract Name: FY 2009 Follow On Production
Contractor: Lockheed Martin Space Systems
Contractor Location: Sunnyvale, CA 94088
Contract Number: N00030-08-C-0100
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: October 01, 2008
Definitization Date: December 01, 2008

Contract Price								
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
739.4	N/A	0	769.1	N/A	0	784.8	784.8	

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/29/2009)	+7.4	-0.7
Previous Cumulative Variances	--	--
Net Change	+7.4	-0.7

Cost and Schedule Variance Explanations

General Contract Variance Explanation

The unfavorable schedule variance net change of \$0.7M is due to delays experienced in the Alternate Release Assembly (ARA). They are as follows:

- 1) The Program Manager requested a slip in the ARA Reentry Critical Design Review (CDR) thus resulting in delays in the Reentry Design Compliance Statements;
- 2) Authenticating Reentry documentation, and;
- 3) Authentication and release of Reentry MK4 Simulator drawings.

The favorable cost variance net change of \$7.4M is due to less repair/rework inductions at the missile processing facilities as a result of fewer problems being experienced at the Missile Integrated Support Facilities than had been experienced on previous contracts.

Notes

This is the first report for this contract.

The increase of \$29.7M in the Current Contract Price from the Initial Contract Price is due to the definitization of the Alternate Release Assembly (ARA) Development line item.

The Contractor's Estimated Price at Completion is more than the Current Price by \$15.7M because of the inclusion of the performance incentives.

Contract Identification

Appropriation: Procurement
Contract Name: FY 2009 Guidance Production
Contractor: Charles Stark Draper Laboratory
Contractor Location: Cambridge, MA 02139
Contract Number: N00030-09-C-0011
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: January 31, 2009
Definitization Date: January 31, 2009

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
146.2	N/A	N/A	146.2	N/A	N/A	146.2	146.2

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (11/27/2009)	+0.1	+0.2
Previous Cumulative Variances	--	--
Net Change	+0.1	+0.2

Cost and Schedule Variance Explanations

General Contract Variance Explanation

The cost and schedule variances are considered insignificant for this contract.

Notes

This is the first report for this contract.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	28	28	28	100.00%
Production	425	425	533	79.74%
Total Program Quantity Delivered	453	453	561	80.75%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	39546.0	Years Appropriated	33
Expended to Date	29713.5	Percent Years Appropriated	71.74%
Percent Expended	75.14%	Appropriated to Date	32321.8
Total Funding Years	46	Percent Appropriated	81.73%

Operating and Support Cost

Assumptions and Ground Rules

The Cost Elements are those included for Milestone II providing the Strategic Weapon System (SWS) subsystems' (launcher, fire control, navigation, test instrumentation, missile checkout, missile and guidance) average annual support costs from FY 2000 through FY 2042. The source of the costs displayed is the Program Manager's estimate as reflected in the FY 2011 President's Budget through FY 2015 and extended through FY 2042. The intermediate maintenance costs are for operating the Strategic Weapons Facilities. Depot maintenance costs are for repair of SWS equipments at contractors' facilities. Sustaining support costs are for sustaining engineering and acquisition of replacement support equipment, modification kits and spare parts for shipboard systems and post production flight hardware. Indirect costs are for base operating support (BOS). Responsibility for BOS was transferred to Commander Navy Installations beginning in FY 2004 and therefore is no longer included in FY 2004 and subsequent years. Operating and Support costs and assumptions for the antecedent system TRIDENT I (C-4) have not previously been developed, and, therefore, are not available.

Date of estimate: December 31, 2009

Cost Estimate Reference:

None

Sustainment Strategy:

None

Antecedent Information:

None

Unitized O&S Costs BY1983 \$K		
Cost Element	TRIDENT II (D-5) MISSILE Average Annual Cost For All Missiles	TRIDENT I (C-4) (Antecedent)
Mission Pay & Allowance	--	--
Unit Level Consumption	0.000	--
Intermediate Maintenance	76.600	--
Depot Maintenance	79.800	--
Contractor Support	--	--
Sustaining Support	327.100	--
Indirect	1.900	--
Other	--	--
Total	485.400	--

Unitized Cost Comments:

None

Item	Total O&S Cost \$M				
	TRIDENT II (D-5) MISSILE			TRIDENT I (C-4) (Antecedent)	
	Current Production APB Objective/Threshold		Current Estimate		
Base Year	N/A	N/A	20825.5		N/A
Then Year	N/A	N/A	49055.6		N/A

Total O&S Cost Comment

None

Disposal Estimate Details

Date of Estimate:

Source of Estimate:

Disposal/Demilitarization Total Cost (BY 1983 \$M):