Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-365

COBRA JUDY REPLACEMENT

As of December 31, 2011

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Program Information	3
Responsible Office	3
References	3
Mission and Description	4
Executive Summary	5
Threshold Breaches	6
Schedule	7
Performance	9
Track To Budget	11
Cost and Funding	12
Low Rate Initial Production	15
Nuclear Cost	15
Foreign Military Sales	15
Unit Cost	16
Cost Variance	19
Contracts	22
Deliveries and Expenditures	23
Operating and Support Cost	24

Program Information

Designation And Nomenclature (Popular Name)

Cobra Judy Replacement (COBRA JUDY REPLACEMENT)

DoD Component

Navy

Responsible Office

Responsible Office

CAPT Roderick Wester
Commander, Naval Sea Systems Command
Attn: PEO IWS 2I (CAPT R. Wester)
1333 Isaac Hall Ave., SE, Stop 2318
Washington Navy, DC 20376-2318
roderick.wester@navy.mil

Phone 202-781-1221
Fax 202-781-4589
DSN Phone --
DSN Fax --

Date Assigned February 11, 2009

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 1, 2003

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated April 8, 2011

Mission and Description

The COBRA JUDY REPLACEMENT (CJR) program replaces the capability of the current United States Naval Ship (USNS) Observation Island (OBIS), its COBRA JUDY radar suite, and other mission essential systems. CJR will fulfill the same mission as the current COBRA JUDY/OBIS. CJR will collect foreign ballistic missile data in support of international treaty verification.

CJR represents an integrated mission solution: ship, radar suite, and other Mission Equipment (ME). CJR will consist of a radar suite including active S-Band and X-Band Phased Array Radars (PARs), weather equipment, and a Mission Communications Suite (MCS). The radar suite will be capable of autonomous volume search and acquisition. The S-Band PAR will serve as the primary search and acquisition sensor and will be capable of tracking and collecting data on a large number of objects in a multi-target complex. The X-Band PAR will provide very high-resolution data on particular objects of interest. Both systems will employ a variety of waveforms and bandwidths to provide operational flexibility and high quality data collection. The Common Back-End (CBE) controls the radars and provides overall data and signal processing and data recording functions for the CJR ME. The CBE provides interfaces to the operator, external systems via the MCS and weather data via weather satellite. The CBE also provides pre-and post-mission processing software for mission profile generation, search volume file generation, scenario generation and mission training, data analysis, mission playback and post-mission reporting. CJR's ME is projected to have a 30-year operating system life-cycle.

The CJR platform, missile range instrumentation ship (T-AGM) USNS Howard O. Lorenzen (T-AGM 25), is a commercially designed and constructed ship, classed to American Bureau of Shipping standards, certified by the U.S. Coast Guard in accordance with Safety of Life at Sea, and in compliance with other commercial regulatory body rules and regulations, and other Military Sealift Command (MSC) standards. The ship is U.S. flagged, operated by a Merchant Marine or MSC Civilian Mariner crew, with a minimum of military specifications. The ship is projected to have a 30-year operating system life-cycle.

The U.S. Navy has procured one CJR for the U.S. Air Force (USAF) using Research, Development, Test and Evaluation-only funding. CJR will be turned over to the USAF at Initial Operational Capability for all operations and maintenance support.

Executive Summary

This is the final SAR for the COBRA JUDY REPLACEMENT (CJR) program. The program is over 90% expended.

Raytheon completed installation of the X and S-band radars on the missile range instrumentation ship (T-AGM) United States Naval Ship (USNS) Howard O. Lorenzen (T-AGM 25) at Kiewit Offshore Services (KOS) in December 2011. The ship sailed away from KOS on January 22, 2012 for a two-week dry dock period in Mobile, Alabama. The ship will sail to Norfolk, Virginia in February 2012 for in-port radar calibration prior to commencing integration and test in the Virginia Capes operating area (VACAPES). The Program Management Office (PMO) plans to conduct final Developmental Test and Operational Test (DT/OT) during the second through fourth quarters of FY 2013, consistent with the program baseline. The program is proceeding to Initial Operational Capability (IOC) and transition to the U.S. Air Force (USAF) in September 2013. The U.S. Navy is coordinating with the USAF to ensure a seamless transition.

Highlights of program progress since the previous SAR follow.

Mission Equipment (ME)

ME installation began shortly after arrival of the ship at KOS on June 20, 2011. The Space and Naval Warfare Systems Command loaded the Mission Communications Suite equipment on-board commencing June 22, 2011. Raytheon began installation of the ME on July 5, 2011. Raytheon and Northrop installed X and S-band wrap room interconnections, antenna servo control system cabinets, prime power systems, and the Common Back End (CBE) equipment in July/August 2011. Raytheon installed the X-band radar antenna and pedestal assembly in July 2011 followed by the S-band radar antenna and pedestal assembly in August 2011. Raytheon successfully demonstrated X and S-band antenna pedestal full rate motion in both azimuth and elevation in October 2011.

Initial shipboard integration is in-process. Raytheon completed initial-light off of the CBE and X and S-band radar power and cooling systems in November 2011. Raytheon loaded CJR software onto the CBE and successfully executed a digital simulation scenario onboard the ship. Raytheon initiated X-band single element testing and verified CBE control of all S-band multi-subarray assemblies in January 2012.

USNS Howard O. Lorenzen (T-AGM 25)

VT Halter Marine, Inc. (VTHM) conducted the final Builder's Trial in June 2011. Two at-sea Acceptance Trials (AT) were conducted in May and June 2011. An in-port AT was completed in September 2011. The ship was provided to Raytheon as Government-Furnished Equipment on July 5, 2011. Contractual delivery of the USNS Howard O. Lorenzen (T-AGM 25) occurred on January 10, 2012, past the November 2011 Acquisition Program Baseline (APB) threshold date. Delivery was delayed until VTHM completed all requirements for contractual delivery. Ship construction and test are complete. The ship is currently manned and operated by a Military Sealift Command crew.

Late ship delivery will not result in a breach in the remaining APB parameters. The PMO decision to commence shipboard installation of ME in July 2011, upon completion of AT and prior to contractual delivery, mitigated the impact of late ship delivery to IOC. PMO estimates for DT/OT are within current APB schedule parameters. The IOC objective date remains September 2013. There is no impact to the program acquisition unit cost. The FY 2013 President's Budget contains sufficient funds to complete the program.

Effective November 1, 2011 the USAF designated the operational name for the CJR radar system as COBRA KING.

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	☐
Unit Cost	PAUC	☐
	APUC	☐

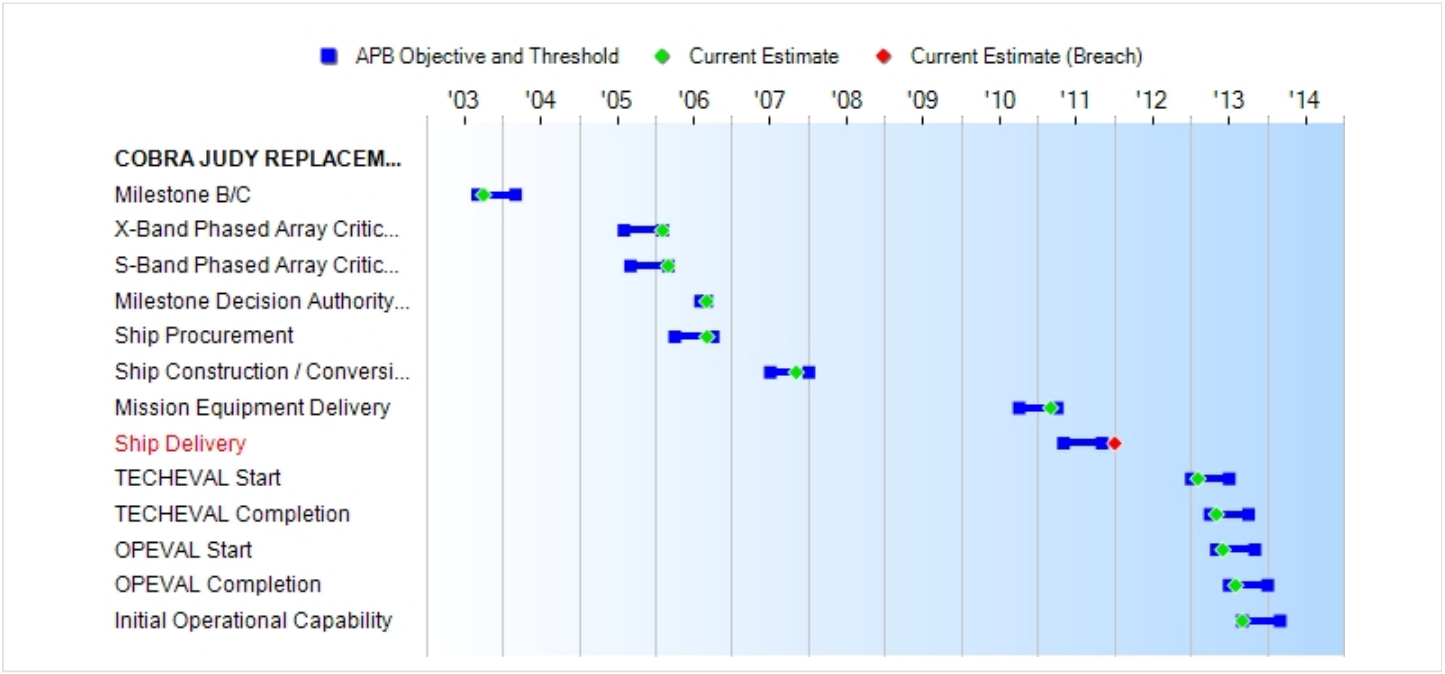
Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Explanation of Breach

VT Halter Marine, Inc. (VTHM) delivered the missile range instrumentation ship (T-AGM) United States Naval Ship Howard O. Lorenzen (T-AGM 25) to the U.S. Navy on January 10, 2012, breaching the November 2011 threshold date. Delivery was delayed until VTHM completed all requirements for contractual delivery. The Program Management Office submitted a Program Deviation Report in December 2011.

Late ship delivery will not result in a breach in the remaining Acquisition Program Baseline (APB) schedule parameters. VTHM sailed the ship to Kiewit Offshore Services for Mission Equipment (ME) installation in June 2011. ME installation is complete. Ship construction and test are complete. Developmental/operational test dates are within current APB parameters. The Initial Operational Capability objective date remains September 2013.

Schedule



Milestones	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	
Milestone B/C	SEP 2003	SEP 2003	MAR 2004	OCT 2003	
X-Band Phased Array Critical Design Review	AUG 2005	AUG 2005	FEB 2006	FEB 2006	
S-Band Phased Array Critical Design Review	SEP 2005	SEP 2005	MAR 2006	MAR 2006	
Milestone Decision Authority (MDA) Review	SEP 2005	AUG 2006	SEP 2006	SEP 2006	
Ship Procurement	APR 2006	APR 2006	OCT 2006	SEP 2006	
Ship Construction / Conversion Start	JUL 2007	JUL 2007	JAN 2008	NOV 2007	
Mission Equipment Delivery	JUN 2009	OCT 2010	APR 2011	MAR 2011	
Ship Delivery	DEC 2009	MAY 2011	NOV 2011	**JAN 2012**[1]	(Ch-1)
TECHEVAL Start	DEC 2009	JAN 2013	JUL 2013	FEB 2013	(Ch-1)
TECHEVAL Completion	JUN 2010	APR 2013	OCT 2013	MAY 2013	(Ch-1)
OPEVAL Start	AUG 2010	MAY 2013	NOV 2013	JUN 2013	(Ch-1)
OPEVAL Completion	FEB 2011	JUL 2013	JAN 2014	AUG 2013	(Ch-1)
Initial Operational Capability	JUN 2011	SEP 2013	MAR 2014	SEP 2013	

[1] *APB Breach*

Acronyms And Abbreviations

OPEVAL - Operational Evaluation
TECHEVAL - Technical Evaluation

Change Explanations

(Ch-1) Ship Delivery was changed from May 2011 to January 2012 to reflect the actual ship contractual delivery, which occurred on January 10, 2012. Ship delivery was delayed until all conditions for contractual delivery were complete.
Late ship delivery will not result in a breach in the remaining Acquisition Program Baseline parameters. The Program Management Office decision to commence shipboard installation of mission equipment in July 2011, upon completion of acceptance trials and prior to contractual delivery, mitigated the impact of late ship delivery to Initial Operational Capability.
The following milestones are impacted by late ship delivery.
TECHEVAL Start was changed from January 2013 to February 2013.
TECHEVAL Completion was changed from April 2013 to May 2013.
OPEVAL Start was changed from May 2013 to June 2013.
OPEVAL Completion was changed from July 2013 to August 2013.

Performance

Characteristics	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Propulsion Plant, Sustained and Loiter Speed	Ship Duration = 12,000 NM. The ship shall be capable of traveling 12,000 NM at 20 knots sustained speed	Ship Duration = 12,000 NM. The ship shall be capable of traveling 12,000 NM at 20 knots sustained speed	Ship Duration = 12,000 NM. The ship shall be capable of traveling 12,000 NM at 20 knots sustained speed	Ship Construction Test and Trials - Acceptance trials included: Full power trial: over a 4 hour period averaged 22 knots / endurance at full power: 14,058 NM; and Endurance trial: maintained 20 knots for 4 hours/ endurance at 20 knots: 18,284 NM	Ship Duration = 12,000 NM. The ship shall be capable of traveling 12,000 NM at 20 knots sustained speed
Mission Capable Rates and Inherent Availability (Ai)	System Availability = 90%. In order to achieve the FMC Ai requirement, the CJR system must be available at least 90% of the time. FMC for the CJR is defined as both the platform and mission equipment functioning as required to achieve the	System Availability = 90%. In order to achieve the FMC Ai requirement, the CJR system must be available at least 90% of the time. FMC for the CJR is defined as both the platform and mission equipment functioning as required to achieve the	System Availability = 90%. In order to achieve the FMC Ai requirement, the CJR system must be available at least 90% of the time. FMC for the CJR is defined as both the platform and mission equipment functioning as required to achieve the	TBD	System Availability = 90%. In order to achieve the FMC Ai requirement, the CJR system must be available at least 90% of the time. FMC for the CJR is defined as both the platform and mission equipment functioning as required to achieve the

	operational mission	operational mission	operational mission		operational mission
Interoperability - All top-level IERs will be satisfied to the standards identified in the threshold and objective values in CJR Top-Level Information Exchange Requirements Matrix	100% of all Top-Level IERs	100% of all Top-Level IERs	100% of Top-Level IERs designated critical (IERs 1-5)	TBD	100% of all Top-Level IERs

Requirements Source: The Joint Requirements Oversight Council approved the COBRA JUDY REPLACEMENT (CJR) Operational Requirements Document (ORD), United States Air Force (USAF) Combat Air Force(CAF) 315-02, on April 24, 2003.

Acronyms And Abbreviations

FMC - Full Mission Capability
IER - Informational Exchange Requirements
NM - Nautical Mile
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 07	PE 0303901N	(Navy)	
	Project 4003	SIRIUS		(Sunk)
APPN 1319	BA 07	PE 0305149N	(Navy)	
	Project 4021	COBRA JUDY		(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2003 $M			BY2003 $M	TY $M		
Appropriation	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	1365.0	1529.6	1682.6	1524.8	1464.0	1716.6	1713.9
Procurement	0.0	0.0	--	0.0	0.0	0.0	0.0
Flyaway	0.0	--	--	0.0	0.0	--	0.0
Recurring	0.0	--	--	0.0	0.0	--	0.0
Non Recurring	0.0	--	--	0.0	0.0	--	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	0.0	--	0.0	0.0	0.0	0.0
Total	1365.0	1529.6	N/A	1524.8	1464.0	1716.6	1713.9

Confidence Level For the Current APB Cost is 50% - The independent cost estimate to support CJR, like all life-cycle cost estimates previously performed by the Cost Assessment and Program Evaluation team, 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 the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for major defense acquisition programs. 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 equally likely that the estimate will prove too low or too high for execution of the program described.

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

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2013 President's Budget / December 2011 SAR (TY$ M)

Appropriation	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
RDT&E	1600.2	80.6	33.1	0.0	0.0	0.0	0.0	0.0	1713.9
Procurement	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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 2013 Total	1600.2	80.6	33.1	0.0	0.0	0.0	0.0	0.0	1713.9
PB 2012 Total	1600.5	80.6	33.1	0.0	0.0	0.0	0.0	0.0	1714.2
Delta	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3

The U.S. Navy (USN) will use Navy Research, Development, Test and Evaluation (RDT&E) funding to develop and deliver CJR. The USN will not receive Procurement, Military Construction, or Operations and Maintenance (O&M) funding. CJR will be transitioned to the U.S. Air Force at Initial Operational Capability for all O&M support.

Only one RDT&E unit will be acquired; no procurement units are planned. The revised Acquisition Program Baseline was approved by the Under Secretary of Defense (Acquisition, Technology and Logistics) on April 8, 2011.

Quantity	Undistributed	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
Development	1	0	0	0	0	0	0	0	0	1
Production	0	0	0	0	0	0	0	0	0	0
PB 2013 Total	1	0	0	0	0	0	0	0	0	1
PB 2012 Total	1	0	0	0	0	0	0	0	0	1
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
2003	--	--	--	--	--	--	101.0
2004	--	--	--	--	--	--	126.0
2005	--	--	--	--	--	--	175.1
2006	--	--	--	--	--	--	236.8
2007	--	--	--	--	--	--	263.2
2008	--	--	--	--	--	--	267.8
2009	--	--	--	--	--	--	243.8
2010	--	--	--	--	--	--	115.8
2011	--	--	--	--	--	--	70.7
2012	--	--	--	--	--	--	80.6
2013	--	--	--	--	--	--	33.1
Subtotal	**1**	**--**	**--**	**--**	**--**	**--**	**1713.9**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2003 $M	Non End Item Recurring Flyaway BY 2003 $M	Non Recurring Flyaway BY 2003 $M	Total Flyaway BY 2003 $M	Total Support BY 2003 $M	Total Program BY 2003 $M
2003	--	--	--	--	--	--	99.8
2004	--	--	--	--	--	--	121.1
2005	--	--	--	--	--	--	163.9
2006	--	--	--	--	--	--	215.0
2007	--	--	--	--	--	--	233.3
2008	--	--	--	--	--	--	233.1
2009	--	--	--	--	--	--	209.5
2010	--	--	--	--	--	--	98.0
2011	--	--	--	--	--	--	58.7
2012	--	--	--	--	--	--	65.8
2013	--	--	--	--	--	--	26.6
Subtotal	**1**	**--**	**--**	**--**	**--**	**--**	**1524.8**

Low Rate Initial Production

There is no Low Rate Initial Production for the CJR program.

Foreign Military Sales

None

Nuclear Cost

None

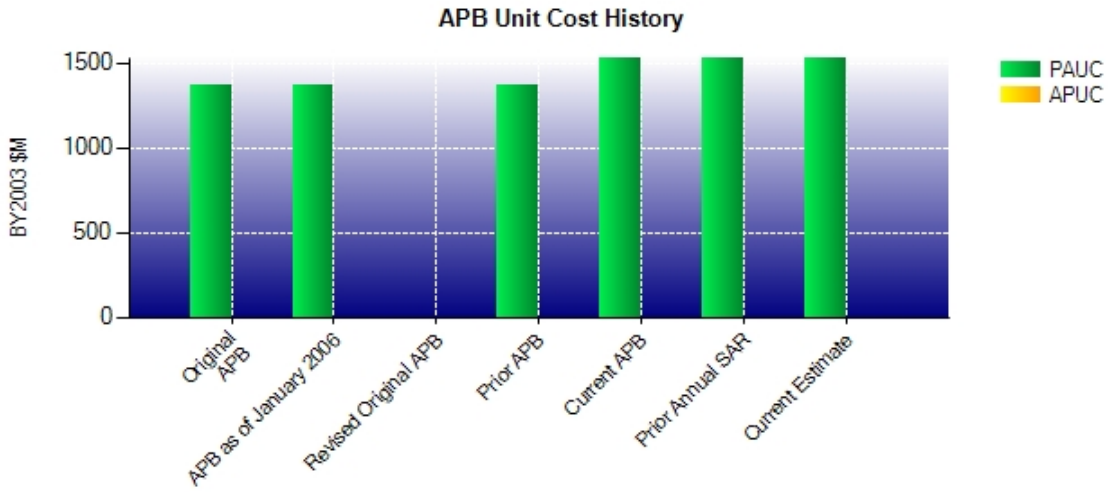
Unit Cost

Unit Cost Report

Unit Cost	BY2003 $M Current UCR Baseline (APR 2011 APB)	BY2003 $M Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1529.6	1524.8	
Quantity	1	1	
Unit Cost	1529.600	1524.800	-0.31
Average Procurement Unit Cost (APUC)			
Cost	0.0	0.0	
Quantity	0	0	
Unit Cost	--	--	--

Unit Cost	BY2003 $M Original UCR Baseline (OCT 2003 APB)	BY2003 $M Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1365.0	1524.8	
Quantity	1	1	
Unit Cost	1365.000	1524.800	+11.71
Average Procurement Unit Cost (APUC)			
Cost	--	0.0	
Quantity	--	0	
Unit Cost	--	--	--

Unit Cost History



		BY2003 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	OCT 2003	1365.000	N/A	1464.000	N/A
APB as of January 2006	OCT 2003	1365.000	N/A	1464.000	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	FEB 2008	1365.000	N/A	1464.000	N/A
Current APB	APR 2011	1529.600	N/A	1716.600	N/A
Prior Annual SAR	DEC 2010	1527.600	N/A	1714.200	N/A
Current Estimate	DEC 2011	1524.800	N/A	1713.900	N/A

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	
1464.000	54.200	0.000	36.300	0.000	159.400	0.000	0.000	249.900	1713.900

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	SEP 2003	N/A	OCT 2003
Milestone C	N/A	N/A	N/A	N/A
IOC	N/A	JUN 2011	N/A	SEP 2013
Total Cost (TY $M)	N/A	1464.0	N/A	1713.9
Total Quantity	N/A	1	N/A	1
Prog. Acq. Unit Cost (PAUC)	N/A	1464.000	N/A	1713.900

On October 1, 2003, the Milestone Decision Authority approved Milestone B/C and allowed the program to enter into the System Development and Demonstration and Production phases.

Cost Variance

Cost Variance Summary

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	1464.0	--	--	1464.0
Previous Changes				
Economic	+51.2	--	--	+51.2
Quantity	--	--	--	--
Schedule	+36.3	--	--	+36.3
Engineering	--	--	--	--
Estimating	+162.7	--	--	+162.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+250.2	--	--	+250.2
Current Changes				
Economic	+3.0	--	--	+3.0
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-3.3	--	--	-3.3
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-0.3	--	--	-0.3
Total Changes	+249.9	--	--	+249.9
CE - Cost Variance	1713.9	--	--	1713.9
CE - Cost & Funding	1713.9	--	--	1713.9

Summary Base Year 2003 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	1365.0	--	--	1365.0
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+30.0	--	--	+30.0
Engineering	--	--	--	--
Estimating	+132.6	--	--	+132.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+162.6	--	--	+162.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-2.8	--	--	-2.8
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-2.8	--	--	-2.8
Total Changes	+159.8	--	--	+159.8
CE - Cost Variance	1524.8	--	--	1524.8
CE - Cost & Funding	1524.8	--	--	1524.8

Previous Estimate: December 2010

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+3.0
Budget decrease due to Navy withholds. (Estimating)	-0.6	-0.7
Adjustment for current and prior escalation. (Estimating)	-2.2	-2.6
RDT&E Subtotal	-2.8	-0.3

Contracts

There are no Contracts data to display.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	1	0.00%
Production	0	0	0	--
Total Program Quantities Delivered	0	0	1	0.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	1713.9	Years Appropriated	10
Expenditures To Date	1560.5	Percent Years Appropriated	90.91%
Percent Expended	91.05%	Appropriated to Date	1680.8
Total Funding Years	11	Percent Appropriated	98.07%

Expenditures are as of December 31, 2011.

Only one Research, Development, Test and Evaluation unit will be acquired; no procurement units are planned.

Operating and Support Cost

Assumptions And Ground Rules

Annual Operating and Support (O&S) costs for CJR reflect the Cost Assessment and Program Evaluation Independent Cost Estimate of May 2003, which is reflected in the Acquisition Program Baseline. Total O&S costs are projected for a 30-year operating system life-cycle and include disposal costs.

Annual O&S costs from the antecedent system, the current COBRA JUDY program owned and managed by the U.S. Air Force, represent an average of actual costs from FY 2003-2011, and estimated costs for FY 2012.

Total O&S costs for the COBRA JUDY program include data from FY 1999-2012. Cost data prior to FY 1999 was not available.

Costs BY2003 $M		
Cost Element	**COBRA JUDY REPLACEMENT Annual Cost**	**COBRA JUDY Annual Cost**
Unit-Level Manpower	11.064	12.889
Unit Operations	5.582	8.216
Maintenance	5.742	12.460
Sustaining Support	2.543	1.283
Continuing System Improvements	4.833	1.421
Indirect Support	0.032	0.910
Other	0.900	1.878
Total Unitized Cost (Base Year 2003 $)	30.696	39.057

Total O&S Costs $M	COBRA JUDY REPLACEMENT	COBRA JUDY
Base Year	950.2	541.2
Then Year	1522.8	588.5