Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-390

CH-53K Heavy Lift Replacement Helicopter (CH-53K)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Program Information

Program Name

CH-53K Heavy Lift Replacement Helicopter (CH-53K)

DoD Component

Navy

Responsible Office

Responsible Office

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References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 22, 2005

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated April 24, 2013

Mission and Description

The CH-53K program mission is to generate and support a robust United States Marine Corps (USMC) heavy-lift capability. The primary mission**,** is vertical heavy lift**.** The Program includes improvements in lift and range capabilities, commonality, reliability, maintainability, interoperability, ship integration, survivability, and force protection. The CH-53K helicopter will be a replacement for the CH-53E.

Executive Summary

Development of the helicopter has continued and shows a maturing and technically sound design that is currently projected to meet all Key Performance Parameters (KPPs). Critical Technology Elements (CTEs) are maturing to plan, and sub-system ground test activities have begun. First flight is planned for third quarter FY 2014. The program office reviewed and validated the System Development and Demonstration (SDD) contract cost Estimate at Completion (EAC) with Naval Air Systems Command (NAVAIR) leadership. Based on this estimate, a Program Deviation Report for beyond-threshold Unit Cost estimates was submitted on June 20, 2012. The Program Life Cycle Cost Estimate (PLCCE) was completed in November 2012. The Service Cost Position (SCP) was released January 24, 2013 and is included in the revised Acquisition Program Baseline (APB).

Since the last submission, the CH-53K program accomplishments include:

- Final assembly of the Ground Test Vehicle (GTV) was completed and it was moved off the production line and into the test hangar on October 5, 2012. The GTV was mounted to the test fixture on January 16, 2013.

- The Static Test Article (STA) is undergoing initial load checks in preparation to run the first Proof Load Test at Sikorsky, Stratford, CT.

- All flight test vehicles, Engineering Development Models (EDMs #1 - 4), are in assembly at the Sikorsky Florida Assembly and Flight Operations (FAFO) facility.

- The System Demonstration Test Article (SDTA) contract negotiations are in progress. Contract award is projected for third quarter Fiscal Year 2013.

- Aircraft software continues to be updated at the System Integration Lab (SIL) and is currently in test.

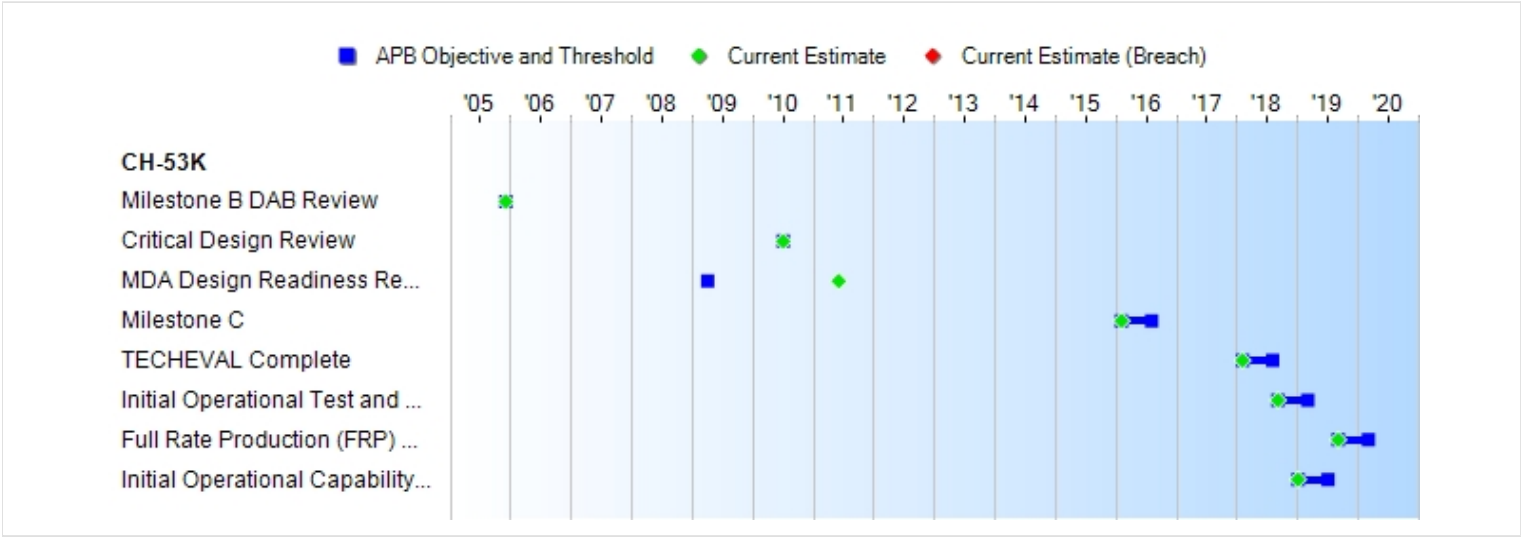
There are no significant software-related issues with this program at this time.

Threshold Breaches

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

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

Schedule



Milestones	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	
Milestone B DAB Review	OCT 2005	DEC 2005	DEC 2005	DEC 2005	
Critical Design Review	MAR 2009	JUL 2010	JUL 2010	JUL 2010	
MDA Design Readiness Review	APR 2009	N/A	N/A	JUN 2011	
Milestone C	DEC 2012	FEB 2016	AUG 2016	FEB 2016	(Ch-1)
TECHEVAL Complete	OCT 2014	FEB 2018	AUG 2018	FEB 2018	
Initial Operational Test and Evaluation (OPEVAL) Complete	JUN 2015	SEP 2018	MAR 2019	SEP 2018	(Ch-1)
Full Rate Production (FRP) Decision Review	DEC 2015	SEP 2019	MAR 2020	SEP 2019	(Ch-2)
Initial Operational Capability (IOC)	SEP 2015	JAN 2019	JUL 2019	JAN 2019	

Acronyms And Abbreviations

DAB - Defense Acquisition Board
IOT&E - Initial Operational Test and Evaluation. Used interchangeably with Opeational Evaluation (OPEVAL).
MDA - Milestone Decision Authority
OPEVAL - Operational Evaluation. Used interchangeably with Initial Operational Test and Evaluation (IOT&E).
TECHEVAL - Technical Evaluation

Change Explanations

(Ch-1) The current estimate for Milestone C and OPEVAL changed from August 2015 to February 2016 and August 2018 to September 2018, respectively, to align with current estimated program schedule and sequence of events leading to IOC.

(Ch-2) The current estimate for FRP changed from May 2019 to September 2019 due to a budget-driven stretch-out of the Low Rate Initial Production (LRIP) quantities.

Performance

Characteristics	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Net Ready (NR)	Satisfy 100% of NR reqts in Joint Integrated Architecture (JIA)	Satisfy 100% of NR reqts in JIA	Satisfy 100% of NR reqts designated as enterprise-level or critical in JIA	TBD	Satisfy 100% of NR reqts in JIA
Range and Payload (nm)	110 w/30,000 lbs external load no refuel	110 w/30,000 lbs external load, no refuel	110 w/27,000 lbs external load, no refuel	TBD	110 w/27,000 lbs external load no refuel
Mission Reliability (MR)	90%	90%	89%	TBD	89%
Logistics Footprint	10% reduction from current CH-53E	10% reduction from current CH-53E	<= current CH-53E	TBD	<= current CH-53E
Sortie Generation Rate (SGR)/Average Sortie Duration (ASD)	2.6 sorties/ 2.25 hrs	2.6 sorties/ 2.25 hrs	2.6 sorties/ 2.25 hrs	TBD	2.6 sorties/ 2.25 hrs

Requirements Source: Operational Requirements Document (ORD) Change 4 dated July 15, 2010

Acronyms And Abbreviations

hrs - Hours
lbs - Pounds
nm - Nautical Miles
reqts - Requirements
TBD - To Be Determined

Change Explanations

None

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

Memo

Net Ready Key Performance Parameter (KPP): Joint Variable Message Format (JVMF), Link-16, and Mode 5 capabilities were approved for deferral by Joint Requirements Oversight Council Memorandum (JROCM) 142-10 of September 10, 2010 until Initial Operational Capabilities (IOC) + 6 months for Mode 5 and IOC+2 years for JVMF and Link-16.

Track To Budget

RDT&E			
APPN 1319	BA 05	PE 0605212N	(Navy)
	Project 3059	CH-53K Development	
Procurement			
APPN 1506	BA 01	PE 0206122M	(Navy)
	ICN 0158	CH-53K (Heavy Lift)	
APPN 1506	BA 06	PE 0206122M	(Navy)
	ICN 0605	Initial Spares - CH-53K	
MILCON			
APPN 1205	BA 01	PE 0202176M	(Navy)
	Project 00318891	CH-53 Infrastructure Upgrades (Kanehoe Bay, HI)	
	Project 62573676	CH-53K Maintenance Training Facility (New River, NC)	

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2006 $M			BY2006 $M	TY $M		
	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	3962.0	5535.9	6089.5	5502.5	4366.4	6273.7	6297.9
Procurement	11018.9	16118.3	17730.0	15800.4	14399.9	22178.8	22178.4
Flyaway	8751.1	--	--	13478.2	11459.8	--	18964.8
Recurring	8557.5	--	--	13061.8	11220.6	--	18387.8
Non Recurring	193.6	--	--	416.4	239.2	--	577.0
Support	2267.8	--	--	2322.2	2940.1	--	3213.6
Other Support	1485.6	--	--	1704.8	1947.7	--	2368.2
Initial Spares	782.2	--	--	617.4	992.4	--	845.4
MILCON	0.0	39.6	43.6	37.8	0.0	48.1	48.1
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	14980.9	21693.8	N/A	21340.7	18766.3	28500.6	28524.4

Confidence Level for Current APB Cost 51% -
The cost estimate recommendation aims to provide sufficient resources to execute the program under normal conditions, encountering average levels of technical, schedule, and programmatic risk and external interference. It is consistent with average resource expenditures on historical efforts of similar size, scope, and complexity.

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	4	4	4
Procurement	152	196	196
Total	156	200	200

Cost and Funding

Funding Summary

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

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	3297.4	606.2	503.2	597.4	478.2	368.9	184.8	261.8	6297.9
Procurement	0.0	0.0	0.0	47.2	480.0	749.1	1152.9	19749.2	22178.4
MILCON	0.0	0.0	13.2	0.0	0.0	34.9	0.0	0.0	48.1
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2014 Total	3297.4	606.2	516.4	644.6	958.2	1152.9	1337.7	20011.0	28524.4
PB 2013 Total	3315.6	606.2	549.5	583.3	921.4	860.7	1645.2	18144.9	26626.8
Delta	-18.2	0.0	-33.1	61.3	36.8	292.2	-307.5	1866.1	1897.6

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

Quantity	Undistributed	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
Development	4	0	0	0	0	0	0	0	0	4
Production	0	0	0	0	0	2	4	7	183	196
PB 2014 Total	4	0	0	0	0	2	4	7	183	200
PB 2013 Total	4	0	0	0	0	2	2	9	183	200
Delta	0	0	0	0	0	0	2	-2	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
2002	--	--	--	--	--	--	2.0
2003	--	--	--	--	--	--	2.7
2004	--	--	--	--	--	--	4.7
2005	--	--	--	--	--	--	99.3
2006	--	--	--	--	--	--	252.0
2007	--	--	--	--	--	--	338.1
2008	--	--	--	--	--	--	386.3
2009	--	--	--	--	--	--	543.9
2010	--	--	--	--	--	--	503.9
2011	--	--	--	--	--	--	558.2
2012	--	--	--	--	--	--	606.3
2013	--	--	--	--	--	--	606.2
2014	--	--	--	--	--	--	503.2
2015	--	--	--	--	--	--	597.4
2016	--	--	--	--	--	--	478.2
2017	--	--	--	--	--	--	368.9
2018	--	--	--	--	--	--	184.8
2019	--	--	--	--	--	--	261.8
Subtotal	**4**	**--**	**--**	**--**	**--**	**--**	**6297.9**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2006 $M	Non End Item Recurring Flyaway BY 2006 $M	Non Recurring Flyaway BY 2006 $M	Total Flyaway BY 2006 $M	Total Support BY 2006 $M	Total Program BY 2006 $M
2002	--	--	--	--	--	--	2.2
2003	--	--	--	--	--	--	2.9
2004	--	--	--	--	--	--	4.9
2005	--	--	--	--	--	--	100.5
2006	--	--	--	--	--	--	247.4
2007	--	--	--	--	--	--	323.9
2008	--	--	--	--	--	--	363.5
2009	--	--	--	--	--	--	505.2
2010	--	--	--	--	--	--	461.1
2011	--	--	--	--	--	--	497.8
2012	--	--	--	--	--	--	530.2
2013	--	--	--	--	--	--	519.9
2014	--	--	--	--	--	--	423.5
2015	--	--	--	--	--	--	493.5
2016	--	--	--	--	--	--	387.6
2017	--	--	--	--	--	--	293.5
2018	--	--	--	--	--	--	144.3
2019	--	--	--	--	--	--	200.6
Subtotal	**4**	**--**	**--**	**--**	**--**	**--**	**5502.5**

Annual Funding TY$
1506 | Procurement | Aircraft 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
2015	--	--	47.2	--	47.2	--	47.2
2016	2	297.6	--	1.7	299.3	180.7	480.0
2017	4	508.2	--	12.2	520.4	228.7	749.1
2018	7	802.3	--	101.7	904.0	248.9	1152.9
2019	14	1612.5	--	116.5	1729.0	414.7	2143.7
2020	21	1989.0	--	105.9	2094.9	416.2	2511.1
2021	24	2143.6	--	20.4	2164.0	356.1	2520.1
2022	24	2149.8	--	20.0	2169.8	226.4	2396.2
2023	24	2168.4	--	19.8	2188.2	254.2	2442.4
2024	24	2202.5	--	19.8	2222.3	250.0	2472.3
2025	24	2247.1	--	48.1	2295.2	219.8	2515.0
2026	24	1859.9	--	48.6	1908.5	201.5	2110.0
2027	4	359.7	--	62.3	422.0	95.0	517.0
2028	--	--	--	--	--	61.4	61.4
2029	--	--	--	--	--	60.0	60.0
Subtotal	**196**	**18340.6**	**47.2**	**577.0**	**18964.8**	**3213.6**	**22178.4**

Annual Funding BY$
1506 | Procurement | Aircraft Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2006 $M	Non End Item Recurring Flyaway BY 2006 $M	Non Recurring Flyaway BY 2006 $M	Total Flyaway BY 2006 $M	Total Support BY 2006 $M	Total Program BY 2006 $M
2015	--	--	38.3	--	38.3	--	38.3
2016	2	237.3	--	1.4	238.7	144.0	382.7
2017	4	397.6	--	9.5	407.1	179.0	586.1
2018	7	616.0	--	78.1	694.1	191.1	885.2
2019	14	1215.1	--	87.8	1302.9	312.4	1615.3
2020	21	1470.8	--	78.3	1549.1	307.8	1856.9
2021	24	1555.6	--	14.8	1570.4	258.4	1828.8
2022	24	1531.0	--	14.2	1545.2	161.3	1706.5
2023	24	1515.4	--	13.8	1529.2	177.7	1706.9
2024	24	1510.6	--	13.6	1524.2	171.4	1695.6
2025	24	1512.4	--	32.4	1544.8	147.9	1692.7
2026	24	1228.5	--	32.1	1260.6	133.1	1393.7
2027	4	233.2	--	40.4	273.6	61.5	335.1
2028	--	--	--	--	--	39.1	39.1
2029	--	--	--	--	--	37.5	37.5
Subtotal	**196**	**13023.5**	**38.3**	**416.4**	**13478.2**	**2322.2**	**15800.4**

Annual Funding TY$
1205 | MILCON | Military Construction, Navy and Marine Corps

Fiscal Year	Total Program TY $M
2014	13.2
2015	--
2016	--
2017	34.9
Subtotal	**48.1**

Annual Funding BY$
1205 | MILCON | Military Construction, Navy and Marine Corps

Fiscal Year	Total Program BY 2006 $M
2014	10.8
2015	--
2016	--
2017	27.0
Subtotal	**37.8**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	11/22/2005	1/18/2012
Approved Quantity	29	27
Reference	Milestone B Acquisition Strategy (AS)	AS
Start Year	2012	2016
End Year	2015	2019

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the need to plan for an efficient production ramp-up.

LRIP previously included 29 CH-53K helicopters (Four (4) Research, Development, Test, and Evaluation (RDT&E) and 25 Aircraft Procurement, Navy (APN) from FY 2016 to FY 2018). A delay in the ramp-up of the procurement buy profile increased the APN total to 27 from FY 2016 to FY 2019. Additionally, the revised AS, approved January 18, 2012, removes the LRIP designation for the four RDT&E helicopters. This results in 27 total LRIP aircraft, which is 13.5% of the estimated 200 fielded CH-53K helicopters. The Full Operational Capability (FOC) requirement was used to plan Full Rate Production (FRP) capacity and the associated production ramp-up, driving total LRIP quantities above the 10% guidance.

Foreign Military Sales

None

Nuclear Cost

None

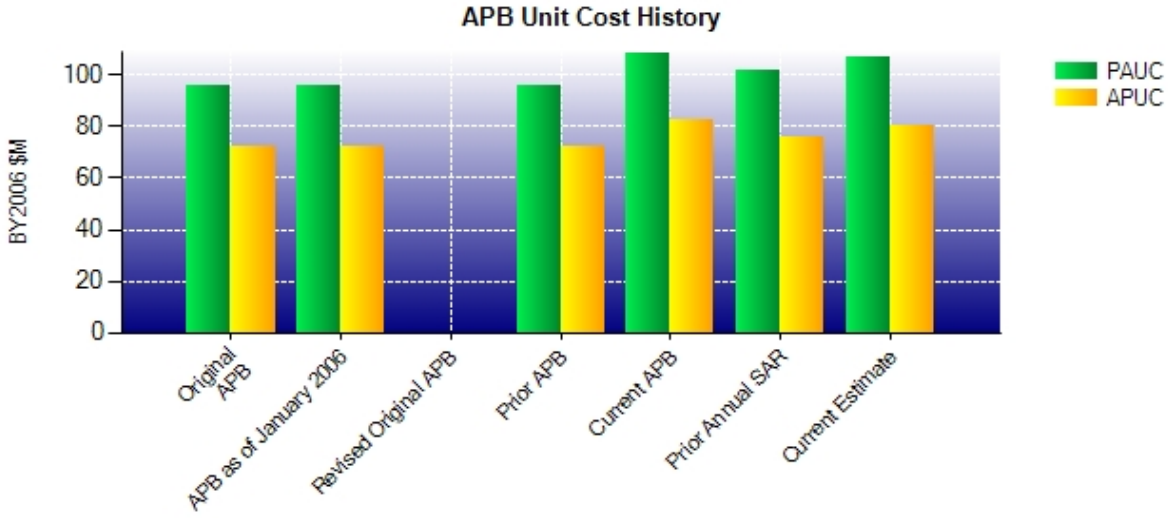
Unit Cost

Unit Cost Report

Unit Cost	BY2006 $M Current UCR Baseline (APR 2013 APB)	BY2006 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	21693.8	21340.7	
Quantity	200	200	
Unit Cost	108.469	106.704	-1.63
Average Procurement Unit Cost (APUC)			
Cost	16118.3	15800.4	
Quantity	196	196	
Unit Cost	82.236	80.614	-1.97

Unit Cost	BY2006 $M Original UCR Baseline (DEC 2005 APB)	BY2006 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	14980.9	21340.7	
Quantity	156	200	
Unit Cost	96.031	106.704	+11.11
Average Procurement Unit Cost (APUC)			
Cost	11018.9	15800.4	
Quantity	152	196	
Unit Cost	72.493	80.614	+11.20

Unit Cost History



		BY2006 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	DEC 2005	96.031	72.493	120.297	94.736
APB as of January 2006	DEC 2005	96.031	72.493	120.297	94.736
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	DEC 2005	96.031	72.493	120.297	94.736
Current APB	APR 2013	108.469	82.236	142.503	113.157
Prior Annual SAR	DEC 2011	101.868	76.129	133.134	104.355
Current Estimate	DEC 2012	106.704	80.614	142.622	113.155

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	
120.297	1.411	-10.920	11.753	0.140	18.507	0.000	1.434	22.325	142.622

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
94.736	1.179	-5.406	8.107	0.000	13.406	0.000	1.133	18.419	113.155

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	OCT 2005	N/A	DEC 2005
Milestone C	N/A	DEC 2012	N/A	FEB 2016
IOC	N/A	SEP 2015	N/A	JAN 2019
Total Cost (TY $M)	N/A	18766.3	N/A	28524.4
Total Quantity	N/A	156	N/A	200
Prog. Acq. Unit Cost (PAUC)	N/A	120.297	N/A	142.622

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	4366.4	14399.9	--	18766.3
Previous Changes				
Economic	-0.5	-257.1	--	-257.6
Quantity	--	+3108.9	--	+3108.9
Schedule	+741.4	+1580.1	--	+2321.5
Engineering	--	--	--	--
Estimating	+1046.4	+146.7	+19.6	+1212.7
Other	--	--	--	--
Support	--	+1475.0	--	+1475.0
Subtotal	+1787.3	+6053.6	+19.6	+7860.5
Current Changes				
Economic	+51.2	+488.2	+0.4	+539.8
Quantity	--	--	--	--
Schedule	+20.3	+8.8	--	+29.1
Engineering	--	--	+28.1	+28.1
Estimating	+7.8	+2480.9	--	+2488.7
Other	--	--	--	--
Support	+64.9	-1253.0	--	-1188.1
Subtotal	+144.2	+1724.9	+28.5	+1897.6
Total Changes	+1931.5	+7778.5	+48.1	+9758.1
CE - Cost Variance	6297.9	22178.4	48.1	28524.4
CE - Cost & Funding	6297.9	22178.4	48.1	28524.4

Summary Base Year 2006 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	3962.0	11018.9	--	14980.9
Previous Changes				
Economic	--	--	--	--
Quantity	--	+2326.4	--	+2326.4
Schedule	+564.3	+420.5	--	+984.8
Engineering	--	--	--	--
Estimating	+909.7	+223.9	+16.3	+1149.9
Other	--	--	--	--
Support	--	+931.5	--	+931.5
Subtotal	+1474.0	+3902.3	+16.3	+5392.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+15.6	+11.4	--	+27.0
Engineering	--	--	+21.5	+21.5
Estimating	-2.7	+1744.9	--	+1742.2
Other	--	--	--	--
Support	+53.6	-877.1	--	-823.5
Subtotal	+66.5	+879.2	+21.5	+967.2
Total Changes	+1540.5	+4781.5	+37.8	+6359.8
CE - Cost Variance	5502.5	15800.4	37.8	21340.7
CE - Cost & Funding	5502.5	15800.4	37.8	21340.7

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+51.2
Adjustment for current and prior escalation. (Estimating)	-14.6	-16.7
Increase to estimate for System Demonstration Test Article estimating methodology. (Estimating)	+2.9	+10.9
Revised estimate to reflect the application of new inflation indices (Estimating)	-29.3	-34.5
Slip in development schedule due to funding constraints FY 2014 to FY 2018. (Schedule)	+15.6	+20.3
Reprice based on Net-Ready Key Performance Parameter. (Estimating)	+38.3	+48.1
Increase in Support Equipment, Repair of Repairables, and Spares due to detailed System Demonstration Test Article support plan vice previous analogy-based Cost Estimating Relationship. (Support)	+53.6	+64.9
RDT&E Subtotal	+66.5	+144.2

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+488.2
Acceleration of procurement buy profile from FY 2018 to FY2017. (Schedule)	0.0	-3.9
Additional schedule variance associated with rate impact of fewer aircraft in FY 2018. (Schedule)	+11.4	+12.7
Increase to estimate due to utilizing supplier bottom-up methodology vice analogy-based Cost Estimating Relationship. (Estimating)	+1267.8	+1796.6
Increase to estimate due to using commercial indices for material escalation. (Estimating)	+669.8	+948.9
Increase to Production Line Shutdown cost estimate. (Estimating)	+79.6	+120.7
Revised estimate to reflect the application of new inflation indices (Estimating)	-272.3	-385.3
Decrease in Other Support cost estimating methodology. (Support)	-441.4	-664.0
Decrease in Initial Spares required to support fleet assets cost estimating methodologies. (Support)	-435.7	-589.0
Procurement Subtotal	+879.2	+1724.9

MILCON	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+0.4
Increase to include costs for a maintenance facility at Kanoehoe Bay. (Engineering)	+21.5	+28.1
MILCON Subtotal	+21.5	+28.5

Contracts

Appropriation: RDT&E	
Contract Name	**System Development and Demonstration**
Contractor	Sikorsky Aircraft Corporation
Contractor Location	6900 Main Street Stratford, CT 06615-9129
Contract Number, Type	N00019-06-C-0081, CPIF
Award Date	January 03, 2006
Definitization Date	April 05, 2006

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
3052.2	N/A	5	3019.2	N/A	5	3694.3	3845.5

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/28/2013)	-27.6	-131.8
Previous Cumulative Variances	-9.6	-8.9
Net Change	-18.0	-122.9

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to delayed component testing and late part deliveries.

The unfavorable net change in the schedule variance is due to qualification test failures and late parts deliveries from subcontractors, resulting in delayed component testing (i.e., Main Gear Box, Hydraulic Transfer Modules).

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to a reduction in target fee associated with contract type conversion from Contract Plus Award Fee (CPAF) to Contract Plus Incentive Fee (CPIF) and scope adjustments.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	4	0.00%
Production	0	0	196	0.00%
Total Program Quantities Delivered	0	0	200	0.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	28524.4	Years Appropriated	12
Expenditures To Date	3251.6	Percent Years Appropriated	42.86%
Percent Expended	11.40%	Appropriated to Date	3903.6
Total Funding Years	28	Percent Appropriated	13.69%

The above data is current as of 3/26/2013.

Operating and Support Cost

CH-53K

Assumptions and Ground Rules

Cost Estimate Reference:
- Estimate Source: NAVAIR-4.2 November 2012 Program Life Cycle Cost Estimate.

Sustainment Strategy:
- Organizational, Intermediate, and Depot level maintenance capabilities.
- Organizational and Intermediate level military maintenance support.
- Depot level government and contractor mixed maintenance support.
- Helicopter Service Life: 30 years.
- Estimate Duration: Fiscal Year (FY) 2018 to 2059.
- Aircraft Attrition Rate: 0.5% of Total Aircraft Inventory (TAI) per year.
- Aircraft Pipeline Factor: 15.5% of TAI.
- Total Helicopter Procurement: 200.
- Squadrons: 10 Marine Heavy Helicopter (HMH) squadrons (8 active / 1 reserve) / 1 Marine Training (HMHT) squadron.
- Helicopters per HMH (active) squadron: 16.
- Helicopters per HMH (reserve) squadron: 16.
- Helicopters per HMHT squadron: 21.
- Monthly Flight Hours (FH) per Helicopter (TAI): 17.9.
- Total Operating Helicopter Years: 4,942.

Antecedent Information:
- CH-53E (further details in Unitized Cost and Total O&S Cost comments below).

Unitized O&S Costs BY2006 $K		
Cost Element	**CH-53K Avg Annual Cost Per Helicopter**	**CH-53E (Antecedent) Avg Annual Cost Per Helicopter**
Unit-Level Manpower	1165.2	1239.7
Unit Operations	360.3	308.8
Maintenance	4789.8	3247.4
Sustaining Support	221.7	106.4
Continuing System Improvements	552.0	703.6
Indirect Support	498.2	564.4
Other	0.0	0.0
Total	7587.2	6170.3

Unitized Cost Comments:
- Antecedent CH-53E data representative of FY 2009 to 2011 average of VAMOSC (Visibility And Management of Operating and Support Cost) reported cost data.
- CH-53K Average Annual Cost per Helicopter = Total O&S Costs (Base Year) / Total Operating Helicopter Years.
- CH-53E is not capable of meeting Joint Requirements Oversight Council (JROC) Key Performance Parameter (KPP) requirements established for the CH-53K. (CH-53K provides three times the lift capability compared to CH-53E).

	Total O&S Cost $M			
	Current Development APB Objective/Threshold		Current Estimate	
	CH-53K		CH-53K	CH-53E (Antecedent)
Base Year	37520.3	41272.3	37496.2	30494.1
Then Year	78156.7	N/A	78103.5	N/A

Total O&S Costs Comments:

- CH-53E Total Operating and Sustainment (O&S) Cost (Base Year 2006$) = CH-53E Annual O&S Cost per Helicopter * CH-53K Total Operating Helicopter Years
- Cost Variance Explanation: The updated estimate is roughly a 3% decrease from the 2011 Selected Acquisition Report (SAR) O&S estimate, from $38,618.3 to $37,496.2 (BY2006$M). Estimate changes were as follow. Cost Estimating Methodologies, +14.4%; Cost Data Updates, -0.1%; Rates, 0.0%; Technical Inputs, +1.6%; Programmatics / Planning Factors, -18.8%. O&S cost variance primarily due to Cost Estimating Methodologies and Programmatics / Planning Factors. Planning factor for platform service life changed from 40 years (with 30 years of O&S reporting) to 30 years.

Disposal Costs

Based on the identified programmatic baseline, the estimated cost of the Demil/Disposal phase for the CH-53K is $23.9 (BY2006$M) The estimate will be refined at Milestone C based on the System Disposal Plan Annex to the Life Cycle Sustainment Plan.