Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-479

Combat Rescue Helicopter (CRH)

As of FY 2017 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

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

Combat Rescue Helicopter (CRH)

DoD Component

Air Force

Responsible Office

Mr. J. David Schairbaum
1895 5th Street
Area B, Bldg 46
Wright-Patterson Air Force Base, OH 45433-7200

james.schairbaum@us.af.mil

Phone: 937-656-8278
Fax: 937-656-7223
DSN Phone: 986-8278
DSN Fax: 986-7223
Date Assigned: June 19, 2011

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated June 18, 2014

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated June 18, 2014

Mission and Description

The Combat Rescue Helicopter (CRH) system will provide Personnel Recovery (PR) forces with a vertical takeoff and landing aircraft that is quickly deployable and capable of main base and austere location operations for worldwide PR missions. CRH system activities may be required during any phase of a service/joint/coalition operation, across the full range of military operations, in any land or sea location, within the areas covered by the relevant defense planning scenarios.

The United States Air Force (USAF) has 12 Core Functions that address its unique capabilities in support of the Joint Functional Capabilities (JFC) across the full spectrum of political and military operations in all environments. The USAF has demonstrated its commitment to the Joint Force by making PR one of the 12 USAF Core Functions. The Air Force recognizes the inherent interdependence of PR, although established as an individual Core Function, with the other Core Functions as well as with the JFCs.

The CRH shall be capable of employment day or night, in adverse weather, and in a variety of threat spectrums from terrorist attacks to chemical, biological, radiological, and nuclear threats. A single pilot must be able to fly and operate all electronic/sensor weapons systems including countermeasures, leaving the second pilot to navigate, communicate, and manage mission execution. Onboard defensive capabilities will permit the CRH system to operate in an increased threat environment. An in-flight air refueling capability will provide an airborne alert capability and extend its combat mission range. The CRH system may conduct combat search and rescue airborne mission commander duties. The aircraft will be self-supporting to the maximum extent practical.

The CRH system may also conduct other collateral missions inherent in its capabilities to conduct PR, such as non-conventional assisted recovery, national emergency operations, civil search and rescue, international aid, emergency aero medical evacuation, disaster/humanitarian relief, counter drug activities, support for National Aeronautics and Space Administration flight operations, and insertion/extraction of combat forces.

Executive Summary

The CRH program addresses the need to replace the USAF's aging HH-60G Pave Hawk helicopters (air vehicles, training systems, and product support) with a new system. The CRH program will replace the aging fleet by leveraging in-production air vehicles and training systems and integrating existing technologies to acquire a new system.

Since the time of the last report, the Air Vehicle and Training Systems System Requirements Reviews and System Functional Reviews (SRR/SFR) were completed in April 2015 and July 2015, respectively, establishing the functional baselines. The program completed the Integrated Baseline Review (IBR) and established the Performance Measurement Baseline in July 2015. An IBR update was held in October 2015 and focused on training systems, recently detail planned accounts, and schedule compliance. In September 2015, Air Combat Command completed coordination on the aircrew and maintenance Training System Requirements Analysis and provided it to the program office. This analysis identified clarified requirements that will help to facilitate a successful fielding of the HH-60W training system. Also in September 2015, OUSD(AT&L) approved the program office's request for a waiver of Title 10, USC, Section 2366(c)(1) to conduct Full-Up System Level ballistic testing of the HH-60W. Site activation task force meetings were held at Moody and Kirtland Air Force Bases (EMD bed down locations.) Quarterly joint Risk Management Boards were conducted. No high risks have been identified and mitigation plans are being tracked.

At Milestone B, four 2366b provisions were waived by the USD(AT&L). Two of the four provisions were due to sequestration and reprogramming of funds in the FY 2015 budget process, thus (a)(1)(B) (now(a)(3)(B)) Cost/Schedule/Performance Tradeoff and (a)(1)(D) (now (a)(3)(D)) Full Funding were not able to be satisfied at the point of milestone approval. To meet these two certification provisions, the USAF realigned funding in the FY 2016 budget process to fund the program to the Milestone B SCP. Relative to the third waived provision, (a)(2), (now (a)(1)), the program will satisfy the certification requirement upon completion of the Air Vehicle and Training System Preliminary Design Reviews, which are scheduled to occur in April 2016 and August 2016, respectively. For the fourth and final waived provision, (a)(3)(D),(now(a)(2)), the USD (AT&L) determined that a Technology Readiness Assessment (TRA) was not required for milestone approval based upon the maturity of the required technology. A TRA was initiated in July 2015 and is ongoing. The Department will continue to review the CRH program at least annually until this last certification component is satisfied.

As of the FY 2017 PB, $100M of FY 2017 CRH funding was re-phased with the payback split evenly between FY 2019 and FY 2020. The re-phasing addresses low execution on the program caused by initial forward financing in the budget and Federal Acquisition Regulation (FAR) Subpart 32.5 progress payment restrictions on the contract. Currently there is a 25% progress payment withhold against Sikorsky. The FAR mandates a 20% withhold for fixed price incentive type contracts, and there is an additional 5% withhold due to DCMA disapproval of Sikorsky's estimating systems.

The MILCON total cost is reported at $26.2M (BY 2014) which exceeds the cost threshold amount of $26.1M, resulting in a cost breach. This is due to an application of the most recent DoD Facilities Pricing Guide (July 2015). There is no increase in program scope or risk.

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

Threshold Breaches

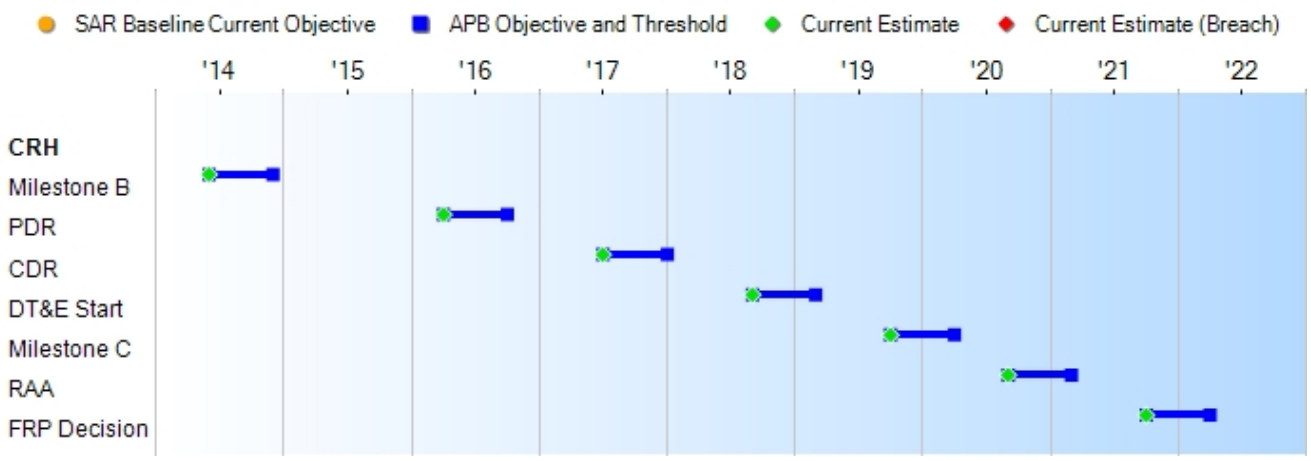
APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☑
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

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

Explanation of Breach

The MILCON total cost is reported at $26.2M (BY 2014) which exceeds the cost threshold amount of $26.1M, resulting in a cost breach. This is due to an application of the most recent DoD Facilities Pricing Guide (July 2015). There is no increase in program scope or risk.

Schedule



Schedule Events				
Events	**SAR Baseline Development Estimate**	**Current APB Development Objective/Threshold**		**Current Estimate**
Milestone B	Jun 2014	Jun 2014	Dec 2014	Jun 2014
PDR	Apr 2016	Apr 2016	Oct 2016	Apr 2016
CDR	Jul 2017	Jul 2017	Jan 2018	Jul 2017
DT&E Start	Sep 2018	Sep 2018	Mar 2019	Sep 2018
Milestone C	Oct 2019	Oct 2019	Apr 2020	Oct 2019
RAA	Sep 2020	Sep 2020	Mar 2021	Sep 2020
FRP Decision	Oct 2021	Oct 2021	Apr 2022	Oct 2021

Change Explanations

None

Notes

RAA is defined as delivery of eight production configuration aircraft (four mission & four training) with all required training devices, spares, support equipment, technical manuals, and sustainment support in place to support IOC .

Acronyms and Abbreviations

CDR - Critical Design Review
DT&E - Development Test & Evaluation
PDR - Preliminary Design Review
RAA - Required Assets Available

Performance

Performance Characteristics				
SAR Baseline Development Estimate	**Current APB Development Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
Hover Performance				
A combat configured HH-60 Recap with SCL shall have an OGE hover capability at mid-mission gross weights at 6,000' PA, 35°C.	A combat configured HH-60 Recap with SCL shall have an OGE hover capability at mid-mission gross weights at 6,000' PA, 35°C.	A combat configured HH-60 Recap with SCL shall have an OGE hover capability at mid-mission gross weights at 4,000' PA, 35°C.	TBD	A combat configured HH-60 Recap with SCL shall have an OGE hover capability at mid-mission gross weights at 4,000' PA, 35°C.
Survivability				
(Objective= Threshold) HH-60 Recap aircraft shall provide vulnerability reduction at least equal to existing HH-60G vulnerability reduction features - protection for the pilot, copilot and all flight critical components or subsystems against ground-fired 7.62 mm armor piercing projectiles at 100 meters.	(Objective= Threshold) HH-60 Recap aircraft shall provide vulnerability reduction at least equal to existing HH-60G vulnerability reduction features - protection for the pilot, copilot and all flight critical components or subsystems against ground-fired 7.62 mm armor piercing projectiles at 100 meters.	HH-60 Recap aircraft shall provide vulnerability reduction at least equal to existing HH-60G vulnerability reduction features - protection for the pilot, copilot and all flight critical components or subsystems against ground-fired 7.62 mm armor piercing projectiles at 100 meters.	TBD	HH-60 Recap aircraft shall provide vulnerability reduction at least equal to existing HH-60G vulnerability reduction features - protection for the pilot, copilot and all flight critical components or subsystems against ground-fired 7.62 mm armor piercing projectiles at 100 meters.
Force Protection				
Pilot and copilot seating to 14.5 mm AP projectiles at 500 meters. Walls around the primary cabin crew member positions and the entire cabin floor to 14.5 mm AP at 500 meters.	Pilot and copilot seating to 14.5 mm AP projectiles at 500 meters. Walls around the primary cabin crew member positions and the entire cabin floor to 14.5 mm AP at 500 meters.	Pilot and copilot seating will incorporate ballistic hardening to defeat 7.62 mm AP projectiles at 100 meters. The cabin walls around the primary cabin crew member positions and the entire cabin floor will have the capability to defeat 7.62 mm AP projectiles at 100 meters.	TBD	Pilot and copilot seating will incorporate ballistic hardening to defeat 7.62 mm AP projectiles at 100 meters. The cabin walls around the primary cabin crew member positions and the entire cabin floor will have the capability to defeat 7.62 mm AP projectiles at 100 meters
Net Ready				
Execution of all operational activities and information	Execution of all operational activities and information	The capability, system, and/or service shall fully support execution of	TBD	The capability, system, and/or service shall fully support execution of

exchanges identified and information assurance requirements including availability, integrity, authentic-ation, confident-iality, and non-repudiation, and issuance of an ATO by the DAA.	exchanges identified and information assurance requirements including availability, integrity, authentic-ation, confident-iality, and non-repudiation, and issuance of an ATO by the DAA.	joint critical operational activities and information exchanges identified in the DoD Enterprise Architecture and solution architectures based on integrated DoDAF content, and shall satisfy the technical requirements for transition to Net-Centric military operations. Issuance of an IATO or ATO by the DAA.		joint critical operational activities and information exchanges identified in the DoD Enterprise Architecture and solution architectures based on integrated DoDAF content, and shall satisfy the technical requirements for transition to Net-Centric military operations. Issuance of an IATO or ATO by the DAA.
Sustainment (Material Availability)				
(Objective= Threshold) MC rate of 83 percent at IOC	(Objective= Threshold) MC rate of 83 percent at IOC	MC rate of 83 percent at IOC	TBD	MC rate of 83 percent at IOC
System Training Process				
(Objective= Threshold) HH-60 Recap shall provide operations and maintenance training systems	(Objective= Threshold) HH-60 Recap shall provide operations and maintenance training systems	HH-60 Recap shall provide operations and maintenance training systems	TBD	HH-60 Recap shall provide operations and maintenance training systems

Requirements Reference

CDD for HH-60 Recapitalization Aircraft dated July 6, 2010
CDD Supplement for HH-60 Recapitalization Aircraft dated July 20, 2012

Change Explanations

None

Notes

CRH referred to as HH-60 Recap in CDD.

Acronyms and Abbreviations

AP - Armor Piercing
ATO - Authorization to Operate
C - Celsius
DAA - Designated Accrediting Authority
DoDAF - Department of Defense Air Force
IATO - Interim Authorization to Operate
MC - Mission Capable
mm - Millimeter
OGE - Out of Ground Effect
PA - Pressure Altitude
SCL - Standard Combat Load

Track to Budget

RDT&E

Appn	BA	PE
Air Force	05	0605229F

Project	Name
654364	Combat Rescue Helicopter

Procurement

Appn	BA	PE
Air Force	04	0207229F

Line Item	Name
H060WH	Combat Rescue Helicopter

MILCON

Appn	BA	PE
Air Force	01	0207229F

Project	Name
VARIOUS	Combat Rescue Helicopter Simulator

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2014 $M			BY 2014 $M	TY $M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	1958.8	1958.8	2154.7	1947.7	2118.6	2118.6	2070.1
Procurement	6108.4	6108.4	6719.2	6217.2	7708.7	7708.7	7696.5
Flyaway	--	--	--	4549.8	--	--	5643.9
Recurring	--	--	--	4522.0	--	--	5611.7
Non Recurring	--	--	--	27.8	--	--	32.2
Support	--	--	--	1667.4	--	--	2052.6
Other Support	--	--	--	1265.9	--	--	1556.1
Initial Spares	--	--	--	401.5	--	--	496.5
MILCON	23.7	23.7	26.1	**26.2**[1]	28.9	28.9	31.1
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	8090.9	8090.9	N/A	8191.1	9856.2	9856.2	9797.7

[1] *APB Breach*

Current APB Cost Estimate Reference

SCP dated June 18, 2014

Confidence Level

Confidence Level of cost estimate for current APB: 61%

The SCP represents the expected value for both the RDT&E and production estimates. This portion of the estimate takes into consideration relevant risks, including ordinary levels of external and unforeseen events. It aims to provide sufficient resources to execute the program under normal conditions encountering average levels of technical, schedule and programmatic risk.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	9	9	9
Procurement	103	103	103
Total	112	112	112

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2017 President's Budget / December 2015 SAR (TY$ M)									
Appropriation	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
RDT&E	472.4	156.1	319.3	453.5	460.9	183.3	21.2	3.4	2070.1
Procurement	0.0	0.0	0.0	0.0	88.9	623.1	913.3	6071.2	7696.5
MILCON	0.0	0.0	7.3	0.0	3.8	0.0	4.1	15.9	31.1
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2017 Total	472.4	156.1	326.6	453.5	553.6	806.4	938.6	6090.5	9797.7
PB 2016 Total	477.4	156.1	422.5	465.2	507.8	763.0	944.2	6107.3	9843.5
Delta	-5.0	0.0	-95.9	-11.7	45.8	43.4	-5.6	-16.8	-45.8

Quantity Summary										
FY 2017 President's Budget / December 2015 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Development	9	0	0	0	0	0	0	0	0	9
Production	0	0	0	0	0	0	8	10	85	103
PB 2017 Total	9	0	0	0	0	0	8	10	85	112
PB 2016 Total	9	0	0	0	0	0	8	10	85	112
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2012	--	--	--	--	--	--	6.0
2013	--	--	--	--	--	--	32.8
2014	--	--	--	--	--	--	333.6
2015	--	--	--	--	--	--	100.0
2016	--	--	--	--	--	--	156.1
2017	--	--	--	--	--	--	319.3
2018	--	--	--	--	--	--	453.5
2019	--	--	--	--	--	--	460.9
2020	--	--	--	--	--	--	183.3
2021	--	--	--	--	--	--	21.2
2022	--	--	--	--	--	--	3.4
Subtotal	9	--	--	--	--	--	2070.1

Annual Funding 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2014 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2012	--	--	--	--	--	--	6.1
2013	--	--	--	--	--	--	32.9
2014	--	--	--	--	--	--	330.3
2015	--	--	--	--	--	--	98.0
2016	--	--	--	--	--	--	150.7
2017	--	--	--	--	--	--	302.5
2018	--	--	--	--	--	--	421.8
2019	--	--	--	--	--	--	420.1
2020	--	--	--	--	--	--	163.8
2021	--	--	--	--	--	--	18.6
2022	--	--	--	--	--	--	2.9
Subtotal	9	--	--	--	--	--	1947.7

Annual Funding 3010 | Procurement | Aircraft Procurement, Air Force							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2019	--	--	--	--	--	88.9	88.9
2020	8	475.5	--	24.2	499.7	123.4	623.1
2021	10	568.1	--	8.0	576.1	337.2	913.3
2022	14	735.6	--	--	735.6	234.8	970.4
2023	14	745.6	--	--	745.6	286.9	1032.5
2024	14	757.6	--	--	757.6	275.7	1033.3
2025	14	760.0	--	--	760.0	214.4	974.4
2026	14	768.3	--	--	768.3	219.6	987.9
2027	15	801.0	--	--	801.0	270.6	1071.6
2028	--	--	--	--	--	1.1	1.1
Subtotal	103	5611.7	--	32.2	5643.9	2052.6	7696.5

Annual Funding 3010 | Procurement | Aircraft Procurement, Air Force							
Fiscal Year	Quantity	BY 2014 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2019	--	--	--	--	--	78.7	78.7
2020	8	412.8	--	21.0	433.8	107.1	540.9
2021	10	483.3	--	6.8	490.1	286.9	777.0
2022	14	613.5	--	--	613.5	195.9	809.4
2023	14	609.9	--	--	609.9	234.7	844.6
2024	14	607.5	--	--	607.5	221.1	828.6
2025	14	597.7	--	--	597.7	168.6	766.3
2026	14	592.3	--	--	592.3	169.2	761.5
2027	15	605.0	--	--	605.0	204.4	809.4
2028	--	--	--	--	--	0.8	0.8
Subtotal	103	4522.0	--	27.8	4549.8	1667.4	6217.2

Annual Funding 3300 | MILCON | Military Construction, Air Force	
Fiscal Year	**TY $M**
	Total Program
2017	7.3
2018	--
2019	3.8
2020	--
2021	4.1
2022	4.5
2023	2.2
2024	--
2025	6.5
2026	2.7
Subtotal	31.1

Annual Funding 3300 | MILCON | Military Construction, Air Force	
Fiscal Year	**BY 2014 $M**
	Total Program
2017	6.7
2018	--
2019	3.3
2020	--
2021	3.5
2022	3.7
2023	1.8
2024	--
2025	5.1
2026	2.1
Subtotal	26.2

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	6/18/2014	6/18/2014
Approved Quantity	18	18
Reference	Milestone B ADM	Milestone B ADM
Start Year	2019	2019
End Year	2021	2021

The Current Total LRIP Quantity is more than 10% of the total production quantity due to 18 aircraft being the minimum quantity necessary to establish an initial production base for the system as permitted by section 2400 of title 10, United States Code, subsection (b).

The APB was approved based on six full-rate production lots. The relatively small total quantity of aircraft produced will require an LRIP quantity of more than 10 percent.

Foreign Military Sales

None

Nuclear Costs

None

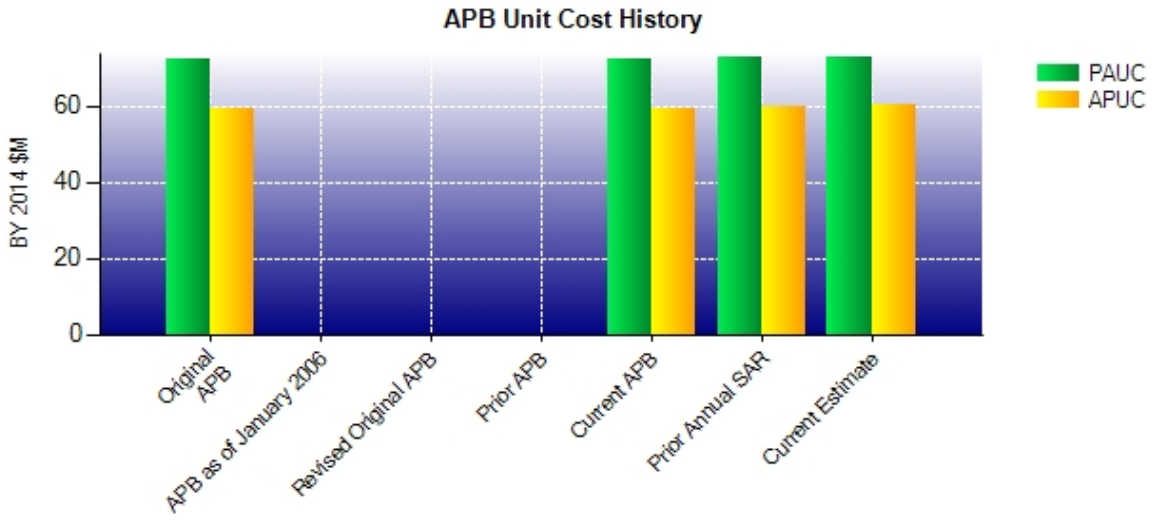
Unit Cost

Unit Cost Report

Item	BY 2014 $M Current UCR Baseline (Jun 2014 APB)	BY 2014 $M Current Estimate (Dec 2015 SAR)	% Change
Program Acquisition Unit Cost			
Cost	8090.9	8191.1	
Quantity	112	112	
Unit Cost	72.240	73.135	+1.24
Average Procurement Unit Cost			
Cost	6108.4	6217.2	
Quantity	103	103	
Unit Cost	59.305	60.361	+1.78

Item	BY 2014 $M Original UCR Baseline (Jun 2014 APB)	BY 2014 $M Current Estimate (Dec 2015 SAR)	% Change
Program Acquisition Unit Cost			
Cost	8090.9	8191.1	
Quantity	112	112	
Unit Cost	72.240	73.135	+1.24
Average Procurement Unit Cost			
Cost	6108.4	6217.2	
Quantity	103	103	
Unit Cost	59.305	60.361	+1.78

Unit Cost History



Item	Date	BY 2014 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Jun 2014	72.240	59.305	88.002	74.842
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	Jun 2014	72.240	59.305	88.002	74.842
Prior Annual SAR	Dec 2014	73.023	60.018	87.888	74.842
Current Estimate	Dec 2015	73.135	60.361	87.479	74.723

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)									
Initial PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
88.002	-1.637	0.000	0.000	0.000	0.868	0.000	0.246	-0.523	87.479

Current SAR Baseline to Current Estimate (TY $M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
74.842	-1.441	0.000	0.000	0.000	1.055	0.000	0.267	-0.119	74.723

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	Jun 2014	N/A	Jun 2014
Milestone C	N/A	Oct 2019	N/A	Oct 2019
IOC	N/A	Sep 2020	N/A	Sep 2020
Total Cost (TY $M)	N/A	9856.2	N/A	9797.7
Total Quantity	N/A	112	N/A	112
PAUC	N/A	88.002	N/A	87.479

Required Assets Available is used in lieu of IOC and is defined as delivery of eight production configuration aircraft (four mission & four training) with all required training devices, spares, support equipment, technical manuals, and sustainment support in place to support IOC.

Cost Variance

Summary TY $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Development Estimate)	2118.6	7708.7	28.9	9856.2
Previous Changes				
Economic	-21.9	-91.7	-0.1	-113.7
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+9.2	+67.2	+0.1	+76.5
Other	--	--	--	--
Support	--	+24.5	--	+24.5
Subtotal	-12.7	--	--	-12.7
Current Changes				
Economic	-12.5	-56.7	-0.3	-69.5
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-23.3	+41.5	+2.5	+20.7
Other	--	--	--	--
Support	--	+3.0	--	+3.0
Subtotal	-35.8	-12.2	+2.2	-45.8
Total Changes	-48.5	-12.2	+2.2	-58.5
CE - Cost Variance	2070.1	7696.5	31.1	9797.7
CE - Cost & Funding	2070.1	7696.5	31.1	9797.7

Summary BY 2014 $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Development Estimate)	1958.8	6108.4	23.7	8090.9
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+14.1	+53.8	+0.1	+68.0
Other	--	--	--	--
Support	--	+19.7	--	+19.7
Subtotal	+14.1	+73.5	+0.1	+87.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	-4.4	--	+0.1	-4.3
Engineering	--	--	--	--
Estimating	-20.8	+33.4	+2.3	+14.9
Other	--	--	--	--
Support	--	+1.9	--	+1.9
Subtotal	-25.2	+35.3	+2.4	+12.5
Total Changes	-11.1	+108.8	+2.5	+100.2
CE - Cost Variance	1947.7	6217.2	26.2	8191.1
CE - Cost & Funding	1947.7	6217.2	26.2	8191.1

Previous Estimate: December 2014

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-12.5
Adjustment for current and prior escalation. (Estimating)	+2.3	+2.3
Re-phased a portion of FY 2017 funds with even payback in FY 2019 - FY 2020 to align with SCP. (Schedule)	-4.4	0.0
Revised estimate to reflect application of Department-wide inflationary adjustments. (Estimating)	-3.6	-3.8
Revised estimate for Development, Test and Evaluation based on refined requirements. (Estimating)	-14.4	-16.8
Revised estimate to reflect actuals. (Estimating)	-5.1	-5.0
RDT&E Subtotal	-25.2	-35.8

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-56.7
Revised estimate to reflect application of Department-wide inflation indices. (Estimating)	+33.4	+41.5
Decrease in Other Support to reflect application of Department-wide inflationary adjustments. (Support)	-0.9	-0.7
Increase in Initial Spares to reflect application of Department-wide inflationary adjustments. (Support)	+2.8	+3.7
Procurement Subtotal	+35.3	-12.2

MILCON	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.3
Kirtland Air Force Base re-phased from FY 2018 to FY 2017 to enable completion in FY 2019. (Schedule)	+0.1	0.0
Revised estimate based on updated DOD Facilities Pricing Guide. (Estimating)	+2.3	+2.5
MILCON Subtotal	+2.4	+2.2

Contracts

General Notes

Estimated Price at Completion if all Contract Line Item Number options over 15 years are executed is $7.9B (at target).

Contract Identification

Appropriation: RDT&E
Contract Name: Combat Rescue Helicopter
Contractor: Sikorsky Aircraft Corp.
Contractor Location: 6900 Main Street
Stratford, CT 06614
Contract Number: FA8629-14-C-2403
Contract Type: Fixed Price Incentive(Firm Target) (FPIF), Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)
Award Date: June 26, 2014
Definitization Date: June 26, 2014

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1277.6	1380.0	N/A	1277.6	1380.0	N/A	1150.4	1233.4

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2015)	-0.3	-7.1
Previous Cumulative Variances	-1.4	-3.5
Net Change	+1.1	-3.6

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to Airframe efforts in the Cabin Preliminary Design, Transition Preliminary Design, and the Fuselage Integration Preliminary Design's rate differentials between planned Sikorsky labor and utilization of design center offload personnel. In some cases, less design hours were required.

The unfavorable net change in the schedule variance is due to 1) level loading of the System Integration Lab budget versus the value of buys in the proper months and 2) the Mission Computer Processing subcontractor delay in getting sub-tier supplier on contract.

Deliveries and Expenditures

Deliveries				
Delivered to Date	**Planned to Date**	**Actual to Date**	**Total Quantity**	**Percent Delivered**
Development	0	0	9	0.00%
Production	0	0	103	0.00%
Total Program Quantity Delivered	0	0	112	0.00%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	9797.7	Years Appropriated	5
Expended to Date	142.9	Percent Years Appropriated	29.41%
Percent Expended	1.46%	Appropriated to Date	628.5
Total Funding Years	17	Percent Appropriated	6.41%

The above data is current as of February 29, 2016.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	June 18, 2014
Source of Estimate:	SCP
Quantity to Sustain:	112
Unit of Measure:	Aircraft
Service Life per Unit:	27.00 Years
Fiscal Years in Service:	FY 2020 - FY 2054

Sustainment Strategy

The Product Support Strategy for CRH is 2-level maintenance, organic at both Organizational and Depot levels. The prime contractor, Sikorsky Aircraft Corporation, will develop, implement and maintain an Integrated Logistics Support (ILS) Plan in conjunction with the Program Office.

- Primary Aerospace Vehicle Inventory (PAI): 91
- Mission Capability Goal: 83%
- Materiel Availability Goal: 67.4%
- Mean Time Between Critical Failure Goal: $\geq$ 28.5 hours
- Mean Time Between Maintenance Goal: $\geq$ 0.30 hours
- Mean Down Time Goal: $\geq$ 20.8 hours
- Service Life: 8,000 hour life

Antecedent Information

(As of May 1, 2014)
- HH-60G
- Total Quantity: 97
- PAI: 87
  -- Note: 21 Operational Loss Replacement (OLR) aircraft are not included, currently being acquired. Anticipate additional HH-60G aircraft retirements due to excessive flying hours.
  -- The HH-60Us are not included
- Mission Capability Rate: 73.4%
- Materiel Availability Rate: 57.1%
- Mean Time Between Critical Failure Rate: 15.4 hrs
- Mean Time Between Maintenance Rate: 0.18 hrs
- Mean Down Time Rate: 21.4 hrs

CRH costs shown in comparison to the antecedent system, HH-60G, reflect estimated average annual cost per primary authorized aircraft (PAA). The HH-60G was normalized for comparison to the CRH to reflect programmatic differences and estimating methodologies. The cost per PAA of the HH-60G was projected using Air Force Total Ownership Cost (AFTOC) system historical data. Costs for the HH-60G were normalized to reflect the CRH assumption of 360 annual flying hours per aircraft. This cost comparison excludes Indirect Support costs for the HH-60G antecedent system because the costs captured in the AFTOC database are incomplete and do not provide a meaningful comparison to those estimated for CRH.

Annual O&S Costs BY2014 $M		
Cost Element	**CRH Average Annual Cost Per Aircraft**	**HH-60G (Antecedent) Average Annual Cost Per Aircraft**
Unit-Level Manpower	3.100	3.500
Unit Operations	1.100	1.000
Maintenance	2.600	2.600
Sustaining Support	0.500	0.300
Continuing System Improvements	0.700	0.600
Indirect Support	1.500	--
Other	--	--
Total	9.500	8.000

CRH average annual cost per aircraft assumes full funding of program requirements (unconstrained), whereas the HH-60G reflects projected actual costs reported in the AFTOC system (constrained). Also, the cost of extending the life of the HH-60G is not reflected. The comparison is not adjusted for any capability differences, costs savings or efficiencies that may exist between the two systems.

Item	Total O&S Cost $M			
	CRH			HH-60G (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	24529.5	26982.5	24529.5	N/A
Then Year	40982.5	N/A	40982.5	N/A

Equation to Translate Annual Cost to Total Cost

The CRH O&S annual unitized cost of $9.5M is calculated based on a steady state PAA fleet of 91 aircraft beginning in FY 2030 and ending in FY 2043. It is not possible to extrapolate this cost to a total O&S cost as it does not capture ramp up (FY 2020-2029) or ramp down (FY 2044-2054) years.

O&S Cost Variance		
Category	**BY 2014 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2014 SAR	24529.5	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	0.0	
Current Estimate	24529.5	

Disposal Estimate Details

Date of Estimate:	June 18, 2014
Source of Estimate:	SCP
Disposal/Demilitarization Total Cost (BY 2014 $M):	Total costs for disposal of all Aircraft are 29.3

TY$M: 76.2 (Total Cost)