Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-101

H-1 Upgrades (4BW/4BN) (H-1 Upgrades)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Program Name

H-1 Upgrades (4BW/4BN) (H-1 Upgrades)

DoD Component

Navy

Responsible Office

Responsible Office

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Date Assigned January 31, 2013

References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 22, 2008

Approved APB

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated February 11, 2011

Mission and Description

The mission of the AH-1Z attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance and fire support coordination capabilities under day/night and adverse weather conditions for the United States Marine Corps (USMC). The mission of the UH-1Y utility helicopter is to provide command, control and assault support under day/night and adverse weather conditions. Both the AH-1Z and UH-1Y aircraft incorporate state-of-the-art designs, which serve to improve capability, lethality, and survivability. Major modifications include a new four-bladed rotor system with semi-automatic blade fold of the new composite rotor blades, new performance matched transmissions, a new four-bladed tail rotor and drive system, upgraded landing gear, and pylon structural modifications. The H-1 Upgrades aircraft have increased maneuverability, speed, and payload capability. Both aircraft have fully integrated common cockpits/avionics that reduce operator workload and improve situational awareness, thus increasing safety.

Executive Summary

Both the UH-1Y and AH-1Z continue to meet all Key Performance Parameters (KPPs). The UH-1Y is actively engaged in Operation Enduring Freedom (OEF) deployments. Aircraft utilization rates continue to be two to three times the planned rate, and the UH-1Y has exceeded 18,000 combat flight hours. All west coast Marine Expeditionary Units (MEU) are combined UH-1Y and AH-1Z aircraft.

H-1 helicopter production deliveries by Bell Helicopter out of its Amarillo, Texas, final assembly and flight operations facility continue to be ahead of the contract delivery schedule. There have been 181 helicopters procured to date (119 UH-1Y, 37 AH-1Z Remanufacture, and 25 AH-1Z Build New) with 102 aircraft delivered through March 1, 2013 (72 UH-1Y and 30 AH-1Z Remanufacture).

The AH-1Z Build New program is experiencing manufacturing start up delays at the Kaman Aerospace facility located in Jacksonville, Florida. Kaman is the AH-1Z Build New cabin supplier to Bell Helicopter. The first AH-1Z Build New cabin is approximately one year late and is experiencing a cost overrun. Bell has implemented mitigation efforts with Kaman, and also at its Amarillo final assembly plant, to minimize aircraft delivery schedule impacts. Although Bell has mitigation efforts in place to address schedule risks, the late AH-1Z Build New cabin from Kaman is increasing the schedule risk for the initial AH-1Z Build New aircraft deliveries. Overall impact to the United States Marine Corps (USMC) attack helicopter transition plan is minimal.

The program is aggressively pursuing Foreign Military Sales opportunities and has received interest from multiple countries.

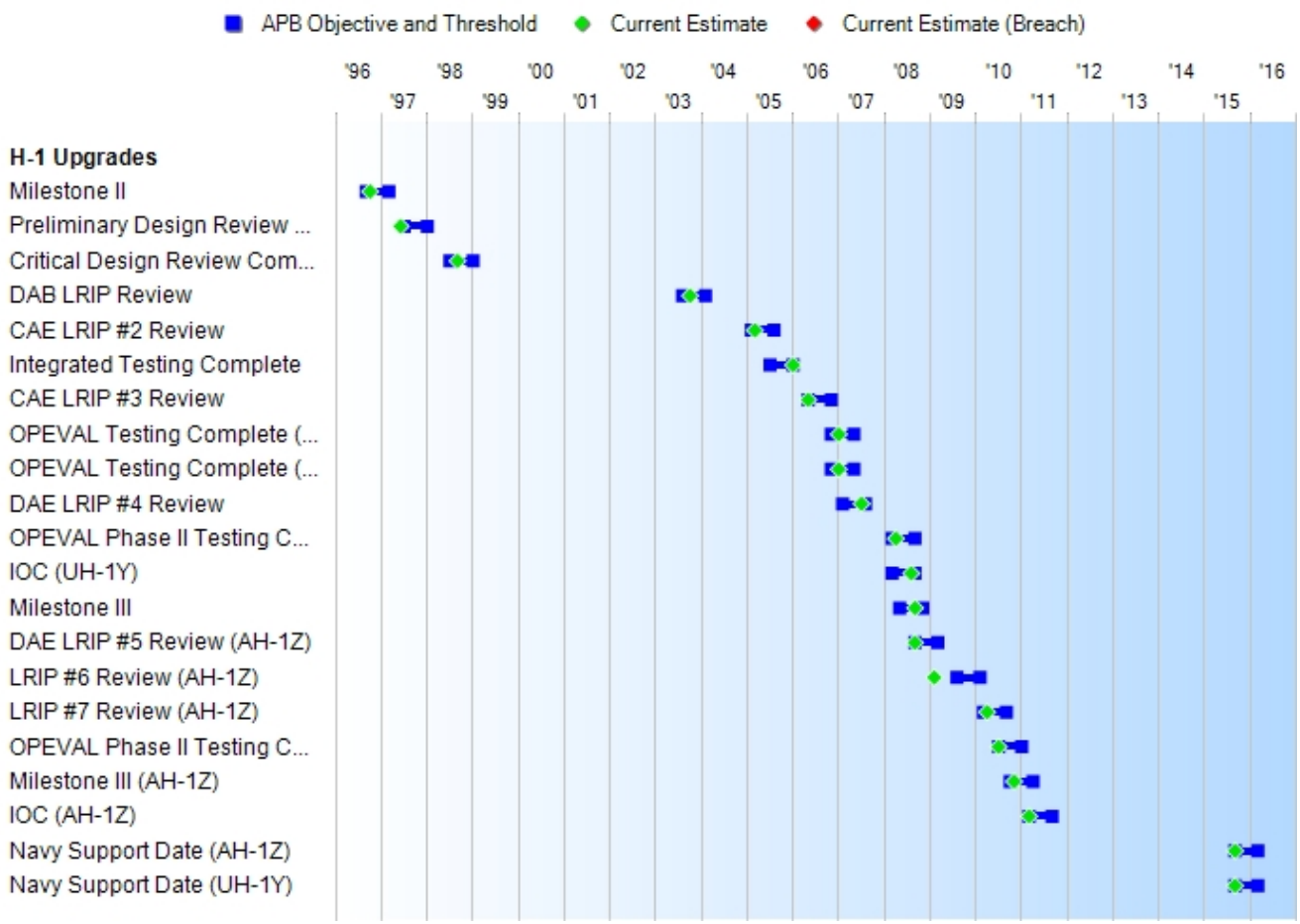
There are no significant software-related issues with this program at this time.

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


APB Objective and Threshold
Current Estimate
Current Estimate (Breach)
'96
'97
'98
'99
'00
'01
'02
'03
'04
'05
'06
'07
'08
'09
'10
'11
'12
'13
'14
'15
'16
H-1 Upgrades
Milestone II
Preliminary Design Review ...
Critical Design Review Com...
DAB LRIP Review
CAE LRIP #2 Review
Integrated Testing Complete
CAE LRIP #3 Review
OPEVAL Testing Complete (...
OPEVAL Testing Complete (...
DAE LRIP #4 Review
OPEVAL Phase II Testing C...
IOC (UH-1Y)
Milestone III
DAE LRIP #5 Review (AH-1Z)
LRIP #6 Review (AH-1Z)
LRIP #7 Review (AH-1Z)
OPEVAL Phase II Testing C...
Milestone III (AH-1Z)
IOC (AH-1Z)
Navy Support Date (AH-1Z)
Navy Support Date (UH-1Y)

Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate
Milestone II	SEP 1996	SEP 1996	MAR 1997	OCT 1996
Preliminary Design Review Complete	JUL 1997	JUL 1997	JAN 1998	JUN 1997
Critical Design Review Complete	JUL 1998	JUL 1998	JAN 1999	SEP 1998
DAB LRIP Review	AUG 2003	AUG 2003	FEB 2004	OCT 2003
CAE LRIP #2 Review	FEB 2005	FEB 2005	AUG 2005	MAR 2005
Integrated Testing Complete	JUL 2005	JUL 2005	JAN 2006	JAN 2006
CAE LRIP #3 Review	MAY 2006	MAY 2006	NOV 2006	MAY 2006
OPEVAL Testing Complete (AH-1Z)	NOV 2006	NOV 2006	MAY 2007	JAN 2007
OPEVAL Testing Complete (UH-1Y)	NOV 2006	NOV 2006	MAY 2007	JAN 2007
DAE LRIP #4 Review	FEB 2007	FEB 2007	AUG 2007	JUL 2007
OPEVAL Phase II Testing Complete (UH-1Y)	MAR 2008	MAR 2008	SEP 2008	APR 2008
IOC (UH-1Y)	MAR 2008	MAR 2008	SEP 2008	AUG 2008
Milestone III	MAY 2008	MAY 2008	NOV 2008	SEP 2008
DAE LRIP #5 Review (AH-1Z)	SEP 2008	SEP 2008	MAR 2009	SEP 2008
LRIP #6 Review (AH-1Z)	AUG 2009	AUG 2009	FEB 2010	FEB 2009
LRIP #7 Review (AH-1Z)	MAR 2010	MAR 2010	SEP 2010	APR 2010
OPEVAL Phase II Testing Complete (AH-1Z)	JUL 2010	JUL 2010	JAN 2011	JUL 2010
Milestone III (AH-1Z)	OCT 2010	OCT 2010	APR 2011	NOV 2010
IOC (AH-1Z)	MAR 2011	MAR 2011	SEP 2011	MAR 2011
Navy Support Date (AH-1Z)	MAR 2012	SEP 2015	MAR 2016	SEP 2015
Navy Support Date (UH-1Y)	MAR 2012	SEP 2015	MAR 2016	SEP 2015

Acronyms And Abbreviations

CAE - Component Acquisition Executive
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
IOC - Initial Operational Capability
LRIP - Low Rate Initial Production
OPEVAL - Operational Evaluation

Change Explanations

None

Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate	
4BW (AH-1W/AH-1Z)						
MFHBA (hrs)	35.0	35.0	24.0	51.6	51.6	(Ch-1)
MMH/FH (hrs)	3.6	3.6	4.3	2.6	2.6	(Ch-1)
Cruise Speed (kts)	165	165	135	137	137	
Payload (Hot Day) (lbs)	3500 lbs	3500 lbs	2500 lbs 6 Wing Stations 4 Universal Under Wing Stations	3179	3179	
Weapon Stations						
Universal Mounts	6	6	4	4	4	
Precision Guided Munitions	16	16	12	16	16	
Maneuverability/Agility (G's)	-0.5 to +2.5	-0.5 to +2.5	-0.5 to +2.5	-.5 to +2.5	-.5 to +2.5	
Mission Radius (NM)	200 NM	200 NM	110 NM	135NM x 1	135NM x 1	
Shipboard Compatibility	Fully compatible to include blade fold.	Fully compatible to include blade fold.	Fully compatible to include blade fold.	Fully compatible to include blade fold.	Fully compatible to include blade fold.	
Interoperability	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net Centric	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net Centric	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net Centric	

	military operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability,	military operations to include: 1) DISR-mandated GIG IT standards and profiles identified in the TV-1, 2) DISR-mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability,	Centric military operations to include: 1) DISR-mandated GIG IT standards and profiles identified in the TV-1, 2) DISR-mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an IATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data	military operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability,	military operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability,

	and consistent data processing specified in the applicable joint and system integrated architecture views.	and consistent data processing specified in the applicable joint and system integrated architecture views.	availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	and consistent data processing specified in the applicable joint and system integrated architecture views.	and consistent data processing specified in the applicable joint and system integrated architecture views.	
Force Protection (Seating)	Two AH-1Z pilots that are stroking, crashworthy, and capable of sustaining 20Gs longitudinal, 20Gs vertical, and 10 Gs laterally.	Two AH-1Z pilot seats that are stroking, crashworthy, and capable of sustaining 20Gs longitudinal, 20Gs vertical, and 10 Gs laterally.	Two AH-1Z pilot seats that are stroking, crashworthy, and capable of sustaining 20Gs longitudinal, 20Gs vertical, and 10 Gs laterally.	Two AH-1Z pilot seats that are stroking, crashworthy, and capable of sustaining 20Gs longitudinal, 20Gs vertical, and 10 Gs laterally.	Two AH-1Z pilot seats that are stroking, crashworthy, and capable of sustaining 20Gs longitudinal, 20Gs vertical, and 10 Gs laterally.	(Ch-2)
Survivability (Ballistic Tolerance/Hardening)	Airframe structure and flight critical systems shall be ballistic tolerant/hard-ened against 23 mm HEI.	Airframe structure and flight critical systems shall be ballistic tolerant/hard-ened against 23 mm HEI.	Airframe structure and flight critical systems shall be ballistic tolerant/hard-ened against 12.7 mm API.	Airframe structure and flight critical systems shall be ballistic tolerant/hard-ened against 12.7 mm API.	Airframe structure and flight critical systems shall be ballistic tolerant/hard-ened against 12.7 mm API.	
4BN (UH-1N/UH-1Y)						
MFHBA (hrs)	40.2	40.2	33.1	58.9	58.9	(Ch-1)
MMH/FH (hrs)	2.9	2.9	3.9	1.7	1.7	(Ch-1)
Cruise Speed (kts)	165	165	140	152	152	
Payload (Hot Day) (lbs)	4500	4500	2800	3079	3079	
Weapon Stations	2 Univ. Mounts	2 Univ. Mounts	2 Hard Mounts	2 Hard Mounts	2 Hard Mounts	
Maneuverability/Agility (G's)	-0.5 to +2.5	-0.5 to +2.5	-0.5 to +2.3	-0.5 to +2.3	-0.5 to +2.3	
Mission Radius (NM)	200 NM	200 NM	110 NM	129NM	129NM	
Shipboard Compatibility	Fully compatible to include blade fold.	Fully compatible to include blade fold.	Fully compatible to include blade fold.	Fully compatible to include blade fold.	Fully compatible to include blade fold.	

Interoperability	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net Centric military operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity, and non-	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include: 1) DISR-mandated GIG IT standards and profiles identified in the TV-1, 2) DISR-mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticatio n, confidentiality , and non-	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include: 1) DISR-mandated GIG IT standards and profiles identified in the TV-1, 2) DISR-mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticatio n, confidentiality	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net Centric military operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity, and non-	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net Centric military operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity, and non-

	repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	, and non-repudiation, and issuance of an IATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.
Force Protection (Seating)	Two UH-1Y pilot seats and ten UH-1Y cabin seats that are stroking, crash-worthy, and capable of sustain-ing 20Gs longitudinal, 20Gs vertical, and 10 Gs laterally.	Two UH-1Y pilot seats and ten UH-1Y cabin seats that are stroking, crash-worthy, and capable of sustaining 20Gs longitudinal, 20Gs vertical, and 10 Gs laterally.	Two UH-1Y pilot seats and ten UH-1Y cabin seats that are stroking, crash-worthy, and capable of sustaining 20Gs longitudinal, 20Gs vertical, and 10 Gs laterally.	Two UH-1Y pilot seats and ten UH-1Y cabin seats that are stroking, crash-worthy, and capable of sustaining 20Gs longitudinal, 20Gs vertical, and 10 Gs laterally.	Two UH-1Y pilot seats and ten UH-1Y cabin seats that are stroking, crash-worthy, and capable of sustaining 20Gs longitudinal, 20Gs vertical, and 10 Gs laterally.
Survivability (Ballistic	Airframe	Airframe	Airframe	Airframe	Airframe

Tolerance/Hardening)	structure and flight critical systems shall be ballistic tolerant/hard ened against 23 mm HEI.	structure and flight critical systems shall be ballistic tolerant/hard ened against 23 mm HEI.	structure and flight critical systems shall be ballistic tolerant/hard ened against 12.7 mm API.	structure and flight critical systems shall be ballistic tolerant/hard- ened against 12.7 mm API.	structure and flight critical systems shall be ballistic tolerant/hard- ened against 12.7 mm API.

Requirements Source: UH-1Y Capability Production Document (CPD) and AH-1Z CPD dated June 11, 2007 as modified by Joint Requirements Oversight Council Memorandum 195-08 dated October 14, 2008

Acronyms And Abbreviations

API - Armor Piercing Incendiary
ATO - Authority to Operate
DAA - Designated Approving Authority
DISR - DoD Information Technology Standards Registry
GIG - Global Information Grid
G's - Gravitational forces
HEI - High Explosive Incendiary
hrs - Hours
IATO - Interim Authority to Operate
IT - Information Technology
KIP - Key Interface Protocol
kts - Knots
lbs - Pounds
MFHBA - Mean Flight Hours Between Abort
mm - Millimeter
MMH/FH - Maintenance Man Hours per Flight Hours
NCOW - Net-Centric Operation and Warfare
NM - Nautical Miles
RM - Reference Model
TV-1 - Technical Standards Profile
Univ. - Universal

Change Explanations

(Ch-1) The current estimate values for Reliability and Maintainability (R&M) have changed as follows based on the Naval Air Systems Command (NAVAIR) R&M Review Board #60 in October 2012: 4BW (AH-1W/AH-1Z) MFHBA from 49.7 to 51.6 and MMH/FH from 2.9 to 2.6; 4BN (UH-1N/UH-1Y) MFHBA from 54.6 to 58.9 and MMH/FH from 1.6 to 1.7.

(Ch-2) To align with the Acquisition Program Baseline (APB) language, the current estimate and demonstrated performance verbiage for 4BW (AH-1W/AH-1Z) Force Protection (Seating) was updated to add the word "seats."

Track To Budget

RDT&E			
APPN 1319	BA 05	PE 0604245N	(Navy)
	Project 2279	H-1 Upgrades	

Procurement			
APPN 1506	BA 01	PE 0206131M	(Navy)
	ICN 0178	4BW/4BN UH-1Y/AH-1Z	
	ICN 0605	4BW/4BN UH-1Y/AH-1Z Initial Spares	

Aircraft Procurement, Navy - Budget Activity (BA) 05 for Item Control Number (ICN) 0532, Program Element (PE) 0206131M is incorporated into the program as a subset of total Operations and Support.

MILCON				
APPN 1205	BA 01	PE 02166490M	(Navy)	
	Project 991	H-1 Y/Z Gearbox Repair & Test Facility		(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2008 $M			BY2008 $M	TY $M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	1799.2	1848.3	2033.1	1701.8	1644.1	1696.2	1537.8
Procurement	9404.2	10088.4	11097.2	9985.1	10542.7	11022.1	11169.0
Flyaway	7821.8	--	--	8311.6	8831.3	--	9362.7
Recurring	7537.2	--	--	7358.2	8537.6	--	8288.9
Non Recurring	284.6	--	--	953.4	293.7	--	1073.8
Support	1582.4	--	--	1673.5	1711.4	--	1806.3
Other Support	1252.0	--	--	1425.6	1371.0	--	1555.7
Initial Spares	330.4	--	--	247.9	340.4	--	250.6
MILCON	0.0	16.3	17.9	15.8	0.0	17.6	17.6
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	11203.4	11953.0	N/A	11702.7	12186.8	12735.9	12724.4

Confidence Level for Current APB Cost 50% - The 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 and represents a 50% confidence level.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	4	4	4
Procurement	349	349	349
Total	353	353	353

The four Research, Development, Test, and Evaluation (RDT&E) aircraft include two UH-1Ys and two AH-1Zs. The 349 Procurement aircraft include 37 AH-1W helicopters remanufactured into AH-1Zs, 152 AH-1Z Build New (ZBN) models, 10 UH-1N helicopters remanufactured into UH-1Ys, and 150 new UH-1Y models.

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	1506.7	31.1	0.0	0.0	0.0	0.0	0.0	0.0	1537.8
Procurement	4997.1	824.1	822.2	818.3	847.8	926.1	962.6	970.8	11169.0
MILCON	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.6
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2014 Total	6521.4	855.2	822.2	818.3	847.8	926.1	962.6	970.8	12724.4
PB 2013 Total	6513.3	855.2	892.1	889.7	876.0	1023.6	913.3	882.1	12845.3
Delta	8.1	0.0	-69.9	-71.4	-28.2	-97.5	49.3	88.7	-120.9

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	156	28	25	26	27	28	30	29	349
PB 2014 Total	4	156	28	25	26	27	28	30	29	353
PB 2013 Total	4	156	28	26	27	26	31	28	27	353
Delta	0	0	0	-1	-1	1	-3	2	2	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
1996	--	--	--	--	--	--	10.9
1997	--	--	--	--	--	--	67.9
1998	--	--	--	--	--	--	81.3
1999	--	--	--	--	--	--	116.8
2000	--	--	--	--	--	--	174.5
2001	--	--	--	--	--	--	133.3
2002	--	--	--	--	--	--	167.4
2003	--	--	--	--	--	--	232.9
2004	--	--	--	--	--	--	99.1
2005	--	--	--	--	--	--	168.2
2006	--	--	--	--	--	--	58.6
2007	--	--	--	--	--	--	26.4
2008	--	--	--	--	--	--	12.6
2009	--	--	--	--	--	--	4.4
2010	--	--	--	--	--	--	28.1
2011	--	--	--	--	--	--	58.7
2012	--	--	--	--	--	--	65.6
2013	--	--	--	--	--	--	31.1
Subtotal	**4**	**--**	**--**	**--**	**--**	**--**	**1537.8**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 $M	Non End Item Recurring Flyaway BY 2008 $M	Non Recurring Flyaway BY 2008 $M	Total Flyaway BY 2008 $M	Total Support BY 2008 $M	Total Program BY 2008 $M
1996	--	--	--	--	--	--	13.3
1997	--	--	--	--	--	--	82.0
1998	--	--	--	--	--	--	97.4
1999	--	--	--	--	--	--	138.3
2000	--	--	--	--	--	--	203.6
2001	--	--	--	--	--	--	153.4
2002	--	--	--	--	--	--	190.7
2003	--	--	--	--	--	--	261.5
2004	--	--	--	--	--	--	108.3
2005	--	--	--	--	--	--	179.0
2006	--	--	--	--	--	--	60.5
2007	--	--	--	--	--	--	26.6
2008	--	--	--	--	--	--	12.5
2009	--	--	--	--	--	--	4.3
2010	--	--	--	--	--	--	27.0
2011	--	--	--	--	--	--	55.0
2012	--	--	--	--	--	--	60.3
2013	--	--	--	--	--	--	28.1
Subtotal	**4**	**--**	**--**	**--**	**--**	**--**	**1701.8**

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
2001	--	--	--	--	--	6.0	6.0
2002	--	--	--	--	--	--	--
2003	--	--	--	--	--	--	--
2004	9	197.8	--	23.8	221.6	105.9	327.5
2005	7	136.9	--	18.7	155.6	78.3	233.9
2006	7	150.9	--	42.2	193.1	162.0	355.1
2007	11	228.8	--	136.5	365.3	170.1	535.4
2008	15	315.5	--	25.2	340.7	154.3	495.0
2009	24	514.0	--	42.6	556.6	80.5	637.1
2010	27	655.7	--	34.8	690.5	70.7	761.2
2011	31	694.3	--	77.6	771.9	127.0	898.9
2012	25	575.8	--	46.4	622.2	124.8	747.0
2013	28	672.6	--	68.0	740.6	83.5	824.1
2014	25	613.3	--	44.2	657.5	164.7	822.2
2015	26	647.7	--	48.4	696.1	122.2	818.3
2016	27	689.0	--	67.6	756.6	91.2	847.8
2017	28	725.0	--	119.6	844.6	81.5	926.1
2018	30	786.4	--	120.5	906.9	55.7	962.6
2019	29	685.2	--	157.7	842.9	127.9	970.8
Subtotal	**349**	**8288.9**	**--**	**1073.8**	**9362.7**	**1806.3**	**11169.0**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 $M	Non End Item Recurring Flyaway BY 2008 $M	Non Recurring Flyaway BY 2008 $M	Total Flyaway BY 2008 $M	Total Support BY 2008 $M	Total Program BY 2008 $M
2001	--	--	--	--	--	6.8	6.8
2002	--	--	--	--	--	--	--
2003	--	--	--	--	--	--	--
2004	9	212.6	--	25.6	238.2	113.8	352.0
2005	7	143.1	--	19.6	162.7	81.8	244.5
2006	7	153.5	--	42.9	196.4	164.8	361.2
2007	11	227.5	--	135.7	363.2	169.1	532.3
2008	15	309.0	--	24.7	333.7	151.1	484.8
2009	24	496.3	--	41.1	537.4	77.7	615.1
2010	27	619.0	--	32.9	651.9	66.7	718.6
2011	31	640.1	--	71.5	711.6	117.1	828.7
2012	25	520.7	--	42.0	562.7	112.8	675.5
2013	28	596.7	--	60.3	657.0	74.1	731.1
2014	25	534.0	--	38.5	572.5	143.3	715.8
2015	26	553.4	--	41.4	594.8	104.4	699.2
2016	27	577.7	--	56.7	634.4	76.5	710.9
2017	28	596.6	--	98.3	694.9	67.1	762.0
2018	30	635.0	--	97.3	732.3	45.0	777.3
2019	29	543.0	--	124.9	667.9	101.4	769.3
Subtotal	**349**	**7358.2**	**--**	**953.4**	**8311.6**	**1673.5**	**9985.1**

Cost Quantity Information
1506 | Procurement | Aircraft Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2008 $M
2001	--	--
2002	--	--
2003	--	--
2004	9	212.6
2005	7	143.1
2006	7	153.5
2007	11	227.5
2008	15	308.9
2009	24	496.3
2010	27	619.0
2011	31	640.0
2012	25	520.7
2013	28	534.9
2014	25	534.0
2015	26	553.6
2016	27	572.5
2017	28	601.4
2018	30	635.0
2019	29	605.2
Subtotal	**349**	**7358.2**

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

Fiscal Year	Total Program TY $M
2012	17.6
Subtotal	**17.6**

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

Fiscal Year	Total Program BY 2008 $M
2012	15.8
Subtotal	**15.8**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	10/22/2003	6/7/2010
Approved Quantity	28	55
Reference	ADM	ADM
Start Year	2004	2004
End Year	2005	2010

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the need to permit an orderly increase in the production rate and efficiency until successful completion of operational testing.

Foreign Military Sales

None

Nuclear Cost

None

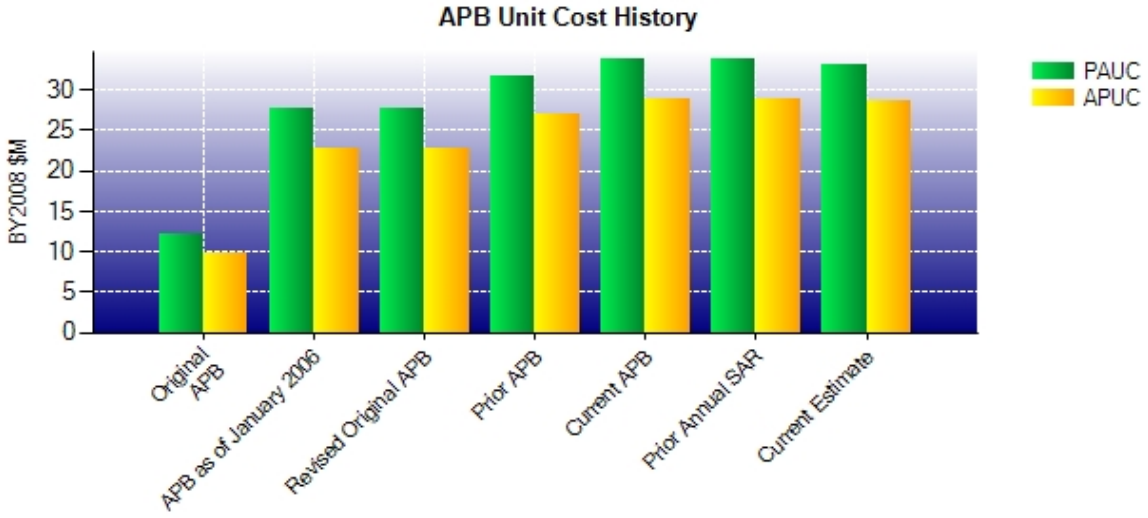
Unit Cost

Unit Cost Report

Unit Cost	BY2008 $M Current UCR Baseline (FEB 2011 APB)	BY2008 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	11953.0	11702.7	
Quantity	353	353	
Unit Cost	33.861	33.152	-2.09
Average Procurement Unit Cost (APUC)			
Cost	10088.4	9985.1	
Quantity	349	349	
Unit Cost	28.907	28.611	-1.02

Unit Cost	BY2008 $M Revised Original UCR Baseline (APR 2005 APB)	BY2008 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	7852.2	11702.7	
Quantity	284	353	
Unit Cost	27.649	33.152	+19.90
Average Procurement Unit Cost (APUC)			
Cost	6352.9	9985.1	
Quantity	280	349	
Unit Cost	22.689	28.611	+26.10

Unit Cost History



		BY2008 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	OCT 1996	12.089	9.903	12.491	10.554
APB as of January 2006	APR 2005	27.649	22.689	28.172	23.843
Revised Original APB	APR 2005	27.649	22.689	28.172	23.843
Prior APB	DEC 2008	31.738	26.946	34.524	30.208
Current APB	FEB 2011	33.861	28.907	36.079	31.582
Prior Annual SAR	DEC 2011	33.792	28.772	36.389	31.799
Current Estimate	DEC 2012	33.152	28.611	36.046	32.003

SAR Unit Cost History

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

Initial PAUC Dev Est	Changes								PAUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
12.491	-0.078	-1.056	1.772	2.351	15.397	0.000	3.647	22.033	34.524

Current SAR Baseline to Current Estimate (TY $M)

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
34.524	-0.152	0.000	-0.440	0.274	1.548	0.000	0.292	1.522	36.046

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

Initial APUC Dev Est	Changes								APUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
10.554	-0.003	-0.686	1.722	1.632	13.299	0.000	3.690	19.654	30.208

Current SAR Baseline to Current Estimate (TY $M)

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
30.208	-0.164	0.000	-0.445	0.000	2.108	0.000	0.295	1.794	32.003

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	SEP 1996	SEP 1996	OCT 1996
Milestone III	N/A	FEB 2004	MAY 2008	SEP 2008
IOC	N/A	JUN 2005	MAR 2008	AUG 2008
Total Cost (TY $M)	N/A	3547.5	12186.8	12724.4
Total Quantity	N/A	284	353	353
Prog. Acq. Unit Cost (PAUC)	N/A	12.491	34.524	36.046

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	1644.1	10542.7	--	12186.8
Previous Changes				
Economic	-0.8	-188.0	+0.3	-188.5
Quantity	--	--	--	--
Schedule	--	-160.2	--	-160.2
Engineering	+96.7	--	--	+96.7
Estimating	-10.2	+797.0	+17.3	+804.1
Other	--	--	--	--
Support	--	+106.4	--	+106.4
Subtotal	+85.7	+555.2	+17.6	+658.5
Current Changes				
Economic	+4.0	+130.8	+0.2	+135.0
Quantity	--	--	--	--
Schedule	--	+4.8	--	+4.8
Engineering	--	--	--	--
Estimating	-196.0	-61.2	-0.2	-257.4
Other	--	--	--	--
Support	--	-3.3	--	-3.3
Subtotal	-192.0	+71.1	--	-120.9
Total Changes	-106.3	+626.3	+17.6	+537.6
CE - Cost Variance	1537.8	11169.0	17.6	12724.4
CE - Cost & Funding	1537.8	11169.0	17.6	12724.4

Summary Base Year 2008 $M				
	RDT&E	**Proc**	**MILCON**	**Total**
SAR Baseline (Prod Est)	1799.2	9404.2	--	11203.4
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	-138.9	--	-138.9
Engineering	+83.6	--	--	+83.6
Estimating	-11.9	+683.6	+16.0	+687.7
Other	--	--	--	--
Support	--	+92.7	--	+92.7
Subtotal	+71.7	+637.4	+16.0	+725.1
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-169.1	-54.9	-0.2	-224.2
Other	--	--	--	--
Support	--	-1.6	--	-1.6
Subtotal	-169.1	-56.5	-0.2	-225.8
Total Changes	-97.4	+580.9	+15.8	+499.3
CE - Cost Variance	1701.8	9985.1	15.8	11702.7
CE - Cost & Funding	1701.8	9985.1	15.8	11702.7

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+4.0
Decrease in estimate due to realignment of all H-1 Research, Development, Test, and Evaluation funds beginning in FY 2014 to a new Project Unit called "H-1 Improvements." (Estimating)	-166.1	-192.8
Decrease in estimate to reflect actuals. (Estimating)	-1.7	-1.9
Adjustment for current and prior escalation. (Estimating)	-1.3	-1.3
RDT&E Subtotal	-169.1	-192.0

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+130.8
Stretch-out of procurement buy profile between FY 2014 to FY 2019. (Schedule)	0.0	+4.8
Increase due to updated labor rates. (Estimating)	+62.7	+77.1
Adjustment for current and prior escalation. (Estimating)	-26.2	-29.1
Decrease in non-recurring flyaway costs due to reduction in avionics obsolescence estimate. (Estimating)	-48.6	-57.5
Decrease in engineering change orders due to budget constraints. (Estimating)	-4.0	-4.8
Revised estimate to reflect the application of new inflation indices. (Estimating)	-38.8	-46.9
Adjustment for current and prior escalation. (Support)	-4.2	-4.5
Decrease in Other Support due to budget contraints. (Support)	-2.3	-4.3
Increase in Initial Spares to reflect revised cost estimate. (Support)	+4.9	+5.5
Procurement Subtotal	-56.5	+71.1

MILCON	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+0.2
Adjustment for current and prior escalation. (Estimating)	-0.2	-0.2
MILCON Subtotal	-0.2	0.0

Contracts

Appropriation: RDT&E	
Contract Name	**AH-1Z BUILD NEW (ZBN) UPGRADES**
Contractor	Bell Helicopter Textron
Contractor Location	600 Hurst Blvd Hurst, TX 76053
Contract Number, Type	N00019-06-G-0001/24, CPFF
Award Date	December 20, 2007
Definitization Date	November 04, 2008

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1.3	N/A	N/A	80.7	N/A	N/A	80.7	80.7

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (3/2/2013)	-11.4	-13.7
Previous Cumulative Variances	-4.8	-9.0
Net Change	-6.6	-4.7

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to manufacturing start up issues at the supplier, Kaman Aerospace Structures, as well as increased Bell management oversight onsite at Kaman.

The unfavorable net change in the schedule variance is due to manufacturing start up issues at the supplier, Kaman Aerospace Structures, specifically part shortages and first article inspection requirements. The first cabin is projected to be approximately one year late to the baseline plan. Bell Helicopter is aggressively mitigating cabin delays with onsite resources and recovery efforts at Bell Amarillo as part of the aircraft final assembly. These delays, as well as the United States Marine Corps (USMC) decision to execute an AH-1Z all Build New program vice an AH-1W remanufacture program, resulted in a new production delivery schedule for AH-1Z aircraft. The delivery delay has minimal impact (one squadron standup delayed one quarter) to the USMC attack helicopter transition plan.

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications to include AH-1Z Build New (ZBN) Phase 1 and Phase 2 Non-Recurring Engineering, 401C Engine Qualification, and additional funding to cover cost overruns associated with underestimation of effort on drawing conversions and cabin builds.

Current Contract Performance Reports indicate a cost overrun due to increased support needed to mitigate the impact of continuing production line start up issues and schedule delays with Kaman Aerospace, Bell's subcontractor for the AH-1Z Build New cabin. The Contractor's Latest Revised Estimate (LRE) is now more than the funded contract amount. The program office is developing an Estimate at Completion (EAC) to determine the cost overrun amount, projected to be $13M to $15M.

The award date, definitization date, and initial contract price target have been updated to align data with the Standard Procurement System (SPS).

Appropriation: Procurement	
Contract Name	**Lot 6**
Contractor	Bell Helicopter Textron
Contractor Location	600 Hurst Blvd Hurst, TX 76053
Contract Number, Type	N00019-09-C-0023, FFP
Award Date	March 27, 2009
Definitization Date	March 27, 2009

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
288.8	N/A	16	382.7	N/A	20	382.7	382.7

Cost And Schedule Variance Explanations

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

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the exercise of an option to procure an additional four UH-1Ys and miscellaneous contract modifications and Engineering Change Proposals (ECPs).

The award date, definitization date, and initial contract price target and quantity have been updated to align data with the Standard Procurement System (SPS).

This contract is more than 90% complete; therefore, this is the final report for this contract.

Appropriation: Procurement

Contract Name	**Lot 7**
Contractor	Bell Helicopter Textron
Contractor Location	600 Hurst Blvd Hurst, TX 76053
Contract Number, Type	N00019-10-C-0035, FFP/CPFF
Award Date	June 16, 2010
Definitization Date	June 16, 2010

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
546.0	N/A	29	622.7	N/A	29	622.7	622.7

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (3/2/2013)	+0.9	-4.2
Previous Cumulative Variances	-0.2	-2.2
Net Change	+1.1	-2.0

Cost And Schedule Variance Explanations

The favorable net change in the cost variance is due to delay in the build of the second AH-1Z Build New cabin on this contract.

The unfavorable net change in the schedule variance is due to a contract modification in October 2012 that revised the aircraft delivery schedule and extended the period of performance. All work was replanned in accordance with the revised aircraft delivery dates.

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to incorporation of Engineering Change Proposals in direct support of aircraft production.

This contract includes Firm Fixed Price (FFP) and Cost Plus Fixed Fee (CPFF) Contract Line Item Numbers (CLINs) for aircraft delivery. All FFP deliveries are complete. The CPFF CLIN on this contract covers two AH-1Z Build New aircraft.

This contract is more than 90% complete; therefore, this is the final report for this contract.

Appropriation: Procurement	
Contract Name	**Lot 8**
Contractor	Bell Helicopter Textron
Contractor Location	600 Hurst Blvd Hurst, TX 76053
Contract Number, Type	N00019-10-C-0015, FFP
Award Date	February 05, 2010
Definitization Date	July 25, 2011

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
50.3	N/A	33	599.5	N/A	33	599.5	599.5

Cost And Schedule Variance Explanations

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

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to final definitization of the Lot 8 production contract, to include procurement of 19 UH-1Y and 8 AH-1Z Remanufactured aircraft and 6 AH-1Z Build New aircraft, and additional miscellaneous modifications.

The initial contract quantity has been updated to align data with the Standard Procurement System (SPS).

Appropriation: Procurement	
Contract Name	**Lot 9**
Contractor	Bell Helicopter Textron
Contractor Location	600 Hurst Blvd Hurst, TX 76053
Contract Number, Type	N00019-11-C-0023, FFP
Award Date	March 14, 2011
Definitization Date	October 16, 2012

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
48.4	N/A	26	474.5	N/A	25	474.5	474.5

Cost And Schedule Variance Explanations

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

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to final definitization that reduced total procurement quantities from 26 to 25, to include procurement of 15 UH-1Y, 3 AH-1Z Remanufactured aircraft, 7 AH-1Z Build New aircraft, and additional miscellaneous modifications.

The definitization date and initial contract price target and quantity have been updated to align data with the Standard Procurement System (SPS).

Appropriation: Procurement	
Contract Name	**Lot 10**
Contractor	Bell Helicopter Textron
Contractor Location	600 Hurst Blvd Hurst, TX 76053
Contract Number, Type	N00019-12-C-0009, FPIF
Award Date	February 13, 2012
Definitization Date	December 27, 2012

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
56.7	N/A	25	494.9	N/A	25	494.9	494.9

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	0.0	0.0
Previous Cumulative Variances	--	--
Net Change	+0.0	+0.0

Cost And Schedule Variance Explanations

None

General Contract Variance Explanation

Cost and schedule variance reporting has not yet commenced for this contract. The first Contract Performance Report is expected in May 2013 pending establishment of the performance measurement baseline.

Contract Comments

This is the first time this contract is being reported.

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to final definitization of the Lot 10 Production Contract to include procurement of 15 UH-1Y and 10 AH-1Z Build New aircraft.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	4	4	4	100.00%
Production	102	102	349	29.23%
Total Program Quantities Delivered	106	106	353	30.03%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	12724.4	Years Appropriated	18
Expenditures To Date	5015.8	Percent Years Appropriated	75.00%
Percent Expended	39.42%	Appropriated to Date	7376.6
Total Funding Years	24	Percent Appropriated	57.97%

The above data is current as of 3/1/2013.

Operating and Support Cost

H-1 Upgrades

Assumptions and Ground Rules

Cost Estimate Reference:

All costs were estimated in Base Year 2008 dollars. The Operating and Support (O&S) estimate source is the Milestone III AH-1Z Full Rate Production (FRP) estimate of 2010 updated for rates and programmatic changes.

Source: Naval Air Systems Command (NAVAIR) 4.2 Cost Department, Operating and Sustainment Division

Sustainment Strategy:

The life cycle includes a phase-in period, 30-year operation with an annual usage of 222 flight hours per aircraft, and a phase-out period, accumulating 7,944 operating aircraft years.

Each aircraft has a designed fatigue life of 10,000 hours per aircraft.

Attrition rates are 1% for the AH-1Z and UH-1Y. Pipeline rates are 10% for the AH-1Z and UH-1Y.

O&S cost estimates are based on the organic three levels of maintenance with chargeable manning (fleet squadron) estimated at 100%.

Antecedent Information:

The AH-1W and UH-1N are the antecedent systems used in a blended analysis to compare to H-1 Upgrades. Antecedent aircraft have historically flown 21.7 flight hours per month and 260 flight hours annually.

Unitized O&S Costs BY2008 $K

Cost Element	H-1 Upgrades Average Annual Cost Per Aircraft	UH-1N/AH-1W (Antecedent) Average Annual Cost Per Aircraft
Unit-Level Manpower	1366.0	1366.0
Unit Operations	208.0	221.0
Maintenance	1858.0	1627.0
Sustaining Support	130.0	122.0
Continuing System Improvements	175.0	332.0
Indirect Support	447.0	447.0
Other	0.0	0.0
Total	4184.0	4115.0

Unitized Cost Comments:

The Average Annual Cost Per Aircraft for H-1 Upgrades is calculated by dividing the total O&S cost by the total operational aircraft years for the program.

The Average Annual Cost Per Aircraft for the UH-1N/AH-1W Antecedent is calculated using the same operational aircraft years as for the H-1 Upgrades aircraft.

	Total O&S Cost $M			
	Current Production APB Objective/Threshold		Current Estimate	
	H-1 Upgrades		H-1 Upgrades	UH-1N/AH-1W (Antecedent)
Base Year	33301.8	36632.0	33234.0	32689.6
Then Year	0.0	N/A	50987.0	N/A

Total O&S Costs Comments:

The H-1 Upgrades program operational aircraft quantities support the Marine Corps with squadrons comprised of 15 AH-1Z and 12 UH-1Y aircraft.

H-1 Procurement Profile: 189 AH-1Z, 160 UH-1Y.
H-1 Primary Authorized Aircraft (PAA) Profile: 156 AH-1Z, 132 UH-1Y.

O&S Cost Variance Explanation

2011 SAR (CY 2008$M): $34,515
Cost Data Updates: Estimated Change from 2011 SAR (-0.7%)
Rates: Estimated Change from 2011 SAR (-$0.9M or -2.5%)
Programmatics/Planning Factors: Estimated Change from 2011 SAR (-0.4%)
2012 SAR (CY 2008$M): Total Estimated Change from 2011 SAR (-3.6%)

Disposal Costs

The Rough Order of Magnitude (ROM) estimated cost of the demilitarization/disposal phase for the remaining aircraft is $79M in Base Year 2008 dollars. The estimate will be refined as the System Disposal Plan Annex to the Life Cycle Sustainment Plan is developed.