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# UTILITY HELICOPTERS-60M BLACK HAWK (UH-60M)

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**CLEARED**  
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December 2021 Selected Acquisition Report (SAR)



December 31, 2021  
Department of the Army

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## Executive Summary

### Program Highlights Since Last Report(Congress):

The UH-60M Black Hawk program requirements are stable and funding is adequate to meet cost, schedule, and performance objectives established in the current approved APB. The program did not experience any increased risk since the previous SAR. December 9, 2020, Program Year five of the Multi-year IX was executed. This procured 36 Aircraft (A/C) and totaled \$548M. In addition, \$94.2M was awarded March 25, 2021 for six additional HH-60M A/C to support the Army National Guard (ARNG); the balance of the \$119.098M will procure required Government Furnished Equipment (GFE). Proceeds from the Blackhawk Exchange & Sales Team (BEST) program were reprogrammed as FY 2018 funds in the amount of \$0.834 M, FY 2019 funds in the amount of \$25.191 M, and FY 2020 funds in the amount of \$8.998 M. To date, a total of 15 aircraft have been procured with BEST proceeds. Five of those aircraft were procured using BEST non-appropriated funding and 10 aircraft were procured with BEST funding via a reprogramming action. Of those 10 aircraft, two were awarded January 26, 2021.

Fielding of Army National Guard continues. Completed fielding 15/15 AC to 2-211th General Support Aviation Battalion (GSAB) WY, UT and AK 2021. Completed fielding 6/6 AC to 1-214th GSAB, 12 CAB September 2021. To date, fielding 23 of 30 UH-60M A/C is complete for 2-285th in AZ and ND for ARNG with expected completion March 2022. Continued fielding of UH-60M A/C to 1-183rd ASLT for HI and ID ARNG with 25 of 30 A/C complete and final delivery set for December 2021. Continued fielding of UH-60M A/C to 3-142nd ASLT to CT, ME and NY ARNG with 12 of 30 A/C complete and final delivery set for March 2022.

As of December 31, 2021, a total of 270 MY IX Army aircraft (202 UH-60Ms and 68 HH-60Ms) were accepted.

Software Negative Statement: There are no significant software-related issues with this program at this time.

### History of Significant Developments Since Program Initiation

Date	Significant Development Description
Apr-2001	Milestone B Defense Acquisition Board (DAB) approved entry into System Development and Demonstration (SDD).
Nov-2002	The UH-60M System Preliminary Design Review (PDR) was held at Sikorsky in Stratford, Connecticut.
Jun-2003	The UH-60M System Critical Design Review (CDR) completed.
Sep-2003	The Developmental Test Pilot Familiarization Course was completed and the first flight of UH- 60M Aircraft 1 was successfully conducted.
Aug-2004	Limited User Test (LUT) in the Systems Integration Lab (SIL) was successfully executed.
Mar-2005	The Milestone C Acquisition Decision Memorandum (ADM) approved production of up to 40 LRIP aircraft and approval to award an Advance Procurement contract for the first lot of Full Rate Production (FRP) aircraft.

Jun-2005	A Low Rate Initial Production (LRIP) contract for the UH-60M baseline aircraft was awarded.
Nov-2006	Initial Operational Test and Evaluation (IOT&E) started on October 16, 2006 and was successfully completed four weeks ahead of schedule on November 21, 2006 with the aircraft performing well through all missions.
Jun-2007	The Full Rate Production (FRP) decision was achieved and the Acquisition Decision Memorandum (ADM) signed authorizing entry into FRP for the Black Hawk Upgrade Program to include both the UH-60M and HH-60M baseline aircraft.
Dec-2007	The Multi-Year VII production contract was awarded.
Nov-2008	The 159th Combat Aviation Brigade (CAB) became the first UH-60M baseline unit deployed to a combat zone.
Feb-2010	A Configuration Steering Board (CSB) held on October 15, 2009, recommended to the DAE that the UH-60 Modernization Program restructure. The recommendation included three parts: 1) Produce UH-60M baseline aircraft only, 2) Complete Development Testing on Fly-By-Wire aircraft and 3) Migrate selected technologies from the Upgrade development efforts to the baseline.
May-2010	The Aviation Synchronization Conference Council of Colonels (CoC) recommended the Army Acquisition Objective (AAO) increase from 1227 to 1367.
Jun-2011	The Defense Acquisition Executive (DAE) approved the UH-60M Black Hawk Acquisition Program Baseline (APB) completing the re-baseline.
Jul-2012	The eighth Multi-Year/Multi-Service Procurement Contract from FY 2012 through FY 2016 was awarded.
Jun-2017	The ninth Multi-Year Procurement (MYP) Contract from FY 2017 through FY 2021 was awarded.
Jan-2021	Executed 5th Year of 5-year Multi-Year 9 (MY IX) contract.

# Schedule

## Schedule Events

Events	Current APB Development Objective/Threshold		Current Estimate/Actual	Deviation
Milestone B	Mar-2001	Mar-2001	Mar-2001	
SDD Contract Award	May-2001	May-2001	May-2001	
System PDR	Nov-2002	Nov-2002	Nov-2002	
System CDR	Jun-2003	Jun-2003	Jun-2003	
First Flight	Sep-2003	Sep-2003	Sep-2003	
Milestone C	Mar-2005	Nov-2005	Mar-2005	
LRIP Contract Award	Jun-2005	Dec-2005	Jun-2005	
OT Start	Sep-2006	Sep-2007	Oct-2006	
OT Complete	Nov-2006	Nov-2007	Nov-2006	
Full Rate Production IPR	May-2007	May-2008	May-2007	
FUE	Jan-2008	Jan-2009	Feb-2008	

<i>Schedule Notes:</i>	<i>Deviation Explanations:</i>
Acronyms and Abbreviations: CDR - Critical Design Review FUE - First Unit Equipped IPR - In-Process Review OT - Operational Test PDR - Preliminary Design Review SDD - System Design & Development	

## Significant Schedule Risks

Event	Date	Description
FRP	6/1/2007	Common Aviation Architecture System is not compliant with current and emerging civil navigation ORD requirements for Global Positioning System terminal and non-precision approaches equivalent to Advisory Circular 90-96a and Technical Standard Order-c129a Class C1 for Precision Area Navigation
Current	12/1/2021	Award of Multi-Year X is scheduled for April 2022. Failure to award will result in a single year contract pricing and increase the likelihood of a Nunn-McCurdy breach. Single year contract pricing would decrease procurement quantity of aircraft.

## Performance

Performance Attributes					
Current Objective	Current Threshold	Current Estimate	Deviation?	Demonstrated Performance	Date
Attribute Title:	Interoperability (meet IERs)			KPP	
N/A	N/A	N/A		N/A	
Attribute Title:	Net-Ready			KPP	
All	All Critical	All		N/A	
Attribute Title:	Survivability IR Signature			KPP	
Existing	Existing	Existing		Existing	
Attribute Title:	Aircraft Survivability Equipment			KPP	
Existing	Existing	Existing		Existing	
Attribute Title:	Survivability Fuel Cells			KPP	
14.5mm	7.62mm	7.62mm		7.62mm	
Attribute Title:	Force Protection Armor Plating			KPP	
14.5mm	7.62mm	7.62mm		7.62mm	
Attribute Title:	External Lift Payload			KPP	
10000	4500	4888		4888	
Attribute Title:	Troop Movement Airspeed (Sustained Cruise) (KTAS)			KSA	
175	145	145		142.0	

Attribute Title:	Troop Movement One Engine Inoperative (KTAS)			KSA	
100	100	100		100KIAS	
Attribute Title:	Troop Movement Combat Radius (w/20 min reserve) (KM)			KSA	
500	225	225.6		225.0	
Attribute Title:	Troop Movement Vertical Rate of Climb (fpm)			KSA	
750	500	725		725	
Attribute Title:	Troop Movement Vertical Rate of Climb w/ One Engine Inoperative (fpm)			KSA	
200	100	100.0		TBD	
Attribute Title:	Troop Movement Internal Lift Capability (290 lbs each)			KSA	
11	11	11		11	
Attribute Title:	Self-Deploy Range (nautical miles)			KSA	
1260	1056	1071		TBD	
Attribute Title:	Ballistic Protection (ground fired armor piercing (mm))			KSA	
14.5	7.62	14.5		14.5	
Attribute Title:	Maintainability (mhrs per flight hr)			KSA	
4.6	5.4	4.1		203	
Attribute Title:	Unscheduled mhrs per flight hr			KSA	
1.3	2.1	1.1		0.4	
Attribute Title:	External Lift Vertical Rate of Climb (fpm)			KSA	
500	200	200		200	
Attribute Title:	External Lift Combat Radius (w/20 min reserve) (KM)			KSA	
275	135	135		135	

<b>Performance Notes:</b>	<b>Deviation Explanations:</b>
Requirements Reference: ORD dated January 29, 2007 Acronyms and Abbreviations: fpm - feet per minute hr - hour IER - Information Exchange Requirement IR - infrared KIAS - Knots-Indicated Air Speed KM - kilometer KTAS - Knots True Air Speed lbs - pounds mhrs - man-hours min - minutes mm - millimeter w/ - with	

## Acquisition Budget Estimate

### Total Acquisition Cost

Budget Year: 2023      Base Year: 2005

<b>Appropriation Category (\$Millions)</b>	<b>Objective Base Year (Current APB)</b>	<b>Threshold Base Year (Current APB)</b>	<b>Budget Estimate Base Year</b>	<b>Budget Estimate Then Year</b>	<b>Deviation?</b>
RDT&E	\$ 761.3	\$ 837.4	\$ 761.6	\$ 780.4	
Procurement	\$ 21,873.7	\$ 24,061.1	\$ 21,551.2	\$ 27,084.0	
MILCON	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	
Acq O&M	\$ 0.00	\$ 0.00	\$ 108.1	\$ 153.2	
<b>Total Acquisition</b>	\$ 22,635.0		\$ 22,420.9	\$ 28,017.6	
PAUC	\$ 16.462		\$ 16.306	\$ 20.376	
APUC	\$ 16.001		\$ 15.765	\$ 19.813	



## Total End Item Quantity

Quantity	Current APB	Current Estimate
Development Qty	8	8
Procurement Qty	1,367	1,367

### Budget Notes:

During 2020 the FY 2022 - FY 2026 Multi-Year X quantities were revised to reflect a minimum procurement of 24 aircraft per year, nine UH-60M and 15 HH-60M Black Helicopters. As a result, nine aircraft were shifted to the out-years from FY 2023 and four aircraft were shifted from FY 2024 to the out-years.

The Acquisition O&M funding for civilian labor was moved from PEO Aviation (OA 5E) to U.S. Army Acquisition Support Center (USAASC), (OA 5X) beginning in FY 2022.

### Quantity Notes:

The UH-60M APO is 1,375 aircraft and consists of 1,365 aircraft that will be sustained and 10 test aircraft that are not fielded or sustained. Eight of the 10 test aircraft were procured with RDT&E funds and two of the aircraft were procured using a combination of APA and RDT&E funding. These two aircraft were taken off the production line and upgraded with RDT&E funding resulting in a total of 1,367 procurement aircraft.

The Army Acquisition Executive approved the Blackhawk Exchange and Sales Team (BEST) program that avoids demilitarization and divestiture costs and applies both non-appropriated funding and appropriated funding proceeds received from the divestiture of non-excess, obsolete H-60 aircraft towards the procurement of replacement H-60M aircraft. The authorities and policies to execute and administer the BEST program are provided in section 503, title 40, U.S. Code and Army regulations 725-1.

A total of 13 aircraft have been procured with BEST proceeds. Five of those aircraft were procured using BEST non-appropriated funding and eight aircraft were procured with BEST funding via a reprogramming action. The 1,367 procurement aircraft less the 13 BEST funded aircraft result in the current procurement estimate of 1,354 aircraft. The 13 BEST aircraft were procured in the following fiscal years: FY 2015 two aircraft, FY 2016 three aircraft, FY 2018 four aircraft and in FY 2019 four aircraft.

## Risk and Sensitivity Analysis

Current Procurement Risks	
1	Current Baseline Estimate (June 2011): The Configuration Steering Board recommended to the DAE that the UH-60 Modernization Program restructure. The recommendation included three parts: 1)

	Produce UH-60M baseline aircraft only; 2) Complete Development Testing on Fly-By-Wire aircraft; and 3) Migrate selected technologies from the upgrade development efforts to the baseline configuration. The recommendation was approved by the DAE on February 18, 2010 in a signed ADM. The ADM also directed the Program to be rebaselined with updates to the Acquisition Strategy, Test & Evaluation Master Plan and APB as a result of this restructure. On May 18, 2010, the Aviation Synchronization Conference Council of Colonels recommended the Authorized Acquisition Objective increased from 1227 to 1375. There were eight RDTE developed for the baseline configuration and two aircraft were procured in the upgrade configuration and these two aircraft will not be fielded. The increase in quantities resulted in Total Procurement Cost increase over the Threshold value resulting in a Total Procurement Cost programmatic breach. The program went through the process of developing an Army Cost Position to rebaseline the program. Both the current unit costs (PAUC and APUC) are still showing a negative percent change for the past nine years indicating that risks have been managed well and the program is not sensitive to any cost breaches.
2	Original Baseline Estimate (February 2002): The Milestone B DAB Approved Entry into System Development and Demonstration Phase in April 2001.
3	Revised Original Estimate (March 2005): In December 2004, the Army changed the Acquisition Strategy in favor of UH-60M new build versus recapitalization and realigned procurement funding from modifications (Aircraft Procurement, Army Line Item (parent/child), (AA0480/AA0492) to new build production, (Army Line Item AA0005/A05002). The DAB approved the Milestone C on March 15, 2005. The approved APB includes the UH-60M Upgrade program development, integration and qualification and the new build UH/HH-60M aircraft rather than recapitalized aircraft. The UH-60M Upgrade program includes Common Avionics Architecture System, Fly-By-Wire, and Full Authority Digital Engine Control development and integration on the UH-60M aircraft.
4	Current Procurement Cost (December 2021): The UH-60M current estimate is based on the 2011 Army Cost Position and adjusted for fact of life changes. The UH-60M program experienced funding challenges which impacted the quantity of aircraft procured, versus what the current baseline estimate was based, therefore increasing unit costs and driving cost growth. This growth is still manageable given that the current program metrics (PAUC/APUC) is still showing negative percent change. Given the current and anticipated fiscal environment, there may be continued budgetary pressures on the program but the program will manage this pressure The Black Hawk program signed a five year Multi-Year contract from FY 2017 to FY 2021 that has a minimum floor of 36 aircraft that provides stability in the production line as long as the contract is not terminated it also mitigates to some extent any drastic swings in procurement's and risk to the program.

## Unit Cost

### Current Baseline Compared with Current Estimate

Current Baseline Base Year: 2005

Category (\$M)	Current Baseline	Current Estimate	% Change	Breach? Significant or Critical
<b>Program Acquisition Unit Cost</b>				
Acquisition Cost	\$ 22,635.0	\$ 22,420.9		
Program Quantity	1,375	1,375		
PAUC	\$ 16.462	\$ 16.306	-0.95%	None
<b>Average Procurement Unit Cost</b>				

Procurement Cost	\$ 21,873.7	\$ 21,551.2		
Procurement Quantity	1,367	1,367		
APUC	\$ 16.001	\$ 15.765	-1.47%	None

## Original Baseline Compared with Current Estimate

Original Baseline Base Year: 2005

Category (\$M)	Original Baseline	Current Estimate	% Change	Breach? Significant or Critical
<b>Program Acquisition Unit Cost</b>				
Acquisition Cost	\$ 16,801.7	\$ 22,420.9		
Program Quantity	1,235	1,375		
PAUC	\$ 13.605	\$ 16.306	19.86%	None
<b>Average Procurement Unit Cost</b>				
Procurement Cost	\$ 16,084.2	\$ 21,551.2		
Procurement Quantity	1,227	1,367		
APUC	\$ 13.109	\$ 15.765	20.27%	None

## Contracts

<b>Contract Number</b>	W58RGZ-17-C-000	<b>Order Number</b>	N/A	<b>Contract Title</b>	Multi-Year IX
CAGE Code	78286	City	Stratford	Contracting Office	Army Contracting Command - Redstone Arsenal
CAGE Legal Name	Sikorsky Aircraft C	State/Province	CT	Contract Strategy	FAR 15: Negotiated Contracts
<b>Effort Number</b>					
Supported Phase	Production	Latest Modification Number	P00206	Definitization Date	6/30/2017
Contract Type	Firm-Fixed-Price	Latest Modification Date	12/16/2021	Work Start Date	6/30/2017

Technical Data Rights	None	<small>Notes</small> There are is no Technical Data Package (TDP) on this contract. Current Ceiling Price: Army Total \$4,357.945M Delivered Quantity: As of December 31, 2021, a total of 270 MY IX Army aircraft (202 UH-60Ms and 68 HH-60Ms) were accepted.					
<b>Contract/Effort Price, Quantity and Performance (\$M)</b>							
Initial Target Price	\$ 3,199.20	Current Target Price	\$ 4,357.95	Contractor's EAC	\$ 4,357.95		
Initial Ceiling Price	\$ 3,199.20	Current Ceiling Price	\$ 4,357.95	PM's EAC	\$ 4,357.95		
Initial Quantity	217	BAC		BCWP		Work Completed	0.00%
Current Quantity	309	ACWP		BCWS		Cost Variance	
Delivered Quantity	270					Schedule Variance	

**Contract Notes:**

<b>Cost Variance and Projected Effects on Program Costs:</b>	<b>Schedule Variance and Projected Effects on Program Schedule:</b>
This is a Firm-Fixed-Priced (FFP) contract and does not have Earned Value.	This is a Firm-Fixed-Priced (FFP) contract and does not have Earned Value.

**Technologies and Systems Engineering**

**Significant Technical Risks**

Event	Date	Description

## Deliveries and Expenditures

Quantities	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	8	8	8	100.00%
Procurement	1,162	1,160	1,367	84.86%
<b>Total</b>	1,170	1,168	1,375	84.95%

Years Appropriated to date	23	Total Years Appropriated Funding (Current Baseline):	30	Percent Years Appropriated:	76.67%
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Appropriation Category (\$Millions)	Then Year Appropriated Amount	Then Year Expended Amount
RDT&E	780.40	780.40
Procurement	23,588.18	21,063.00
MILCON	0.00	0.00
Acq O&M	33.10	33.10
<b>Total Appropriated/Expended</b>	<b>\$ 24,401.68</b>	<b>\$ 21,876.50</b>
<b>Percent Appropriated/Expended</b>	<b>87.09%</b>	<b>78.08%</b>

## Low Rate Initial Production

	Initial Decision LRIP	Current Total LRIP
Approval Date	3/31/2005	3/31/2005
Approval LRIP Quantity	40	40
Approval Document Title	Milestone C ADM	Milestone C ADM
Start Year	2005	2005
End Year	2007	2007

Rationale if quantity exceeds 10% of the total number of articles to be produced: CUI: \_\_\_\_\_

<b>Quantity</b>
<b>Note:</b> CUI: _____
The Milestone C Acquisition Decision Memorandum (ADM) dated Mar. 31, 2005, approved up to 40 LRIP aircraft and supported the award an Advance Procurement Contract for the first lot of FRP aircraft.

## Operating and Support (O&S) Cost

Does Classified Data Exist for this Data Section? Y

Base Year: 2005

	Current Base Year Objective	Current Base Year Threshold	Current Base Year Estimate	Current Then Year Estimate	Deviation?
<b>Total O&amp;S (\$Millions)</b>	\$ 17,652.50	\$ 19,417.80	\$ 35,499.50	\$ 57,925.51	Yes

### Deviation Explanation:

MEMO PEO AVN to ASA(AL&T): SUBJECT: Program Deviation Report H-60M Black Hawk Operating & Support (O&S) Breach, Dated: 02JUN2015, Selected text: a. Bottom line up front: There is no cost growth to the UH-60M Black Hawk. The O&S Breach is strictly a book keeping one based on the adjustment of what is reported for O&S costs and a good news story that the Economical Useful Life (EUL) can be extended from the previously estimated 20 years to 25 years. This EUL change does not change the annual operating cost of the UH-60M Black Hawk. Source file: Program Deviation Report, available upon request.

## Operating and Support Cost Breakdown

Category (Base Year \$Millions)	System Name: UH-60M
Unit-Level Manpower	\$ 13,886.5
Unit Operations	\$ 1,810.2
Maintenance	\$ 12,209.9
Sustaining Support	\$ 319.4
Continued System Improvements	\$ 210.1
Other	\$ 7,063.5
<b>Total O&amp;S</b>	<b>\$ 35,499.5</b>

## **Cost Estimate Source**

**Type:** Component Cost Position

**Approval Authority and Date:** APB June 2011

**Note:** A total of 1,375 UH-60M aircraft will be procured. The operating and support sustainment cost is based on 1,365 fielded aircraft. The eight RDT&E funded prototype aircraft and two procurement/RDT&E aircraft in an upgrade configuration will not be fielded or sustained.

### **O&S Notes:**

The UH-60M Black Hawk APB dated Jun. 2011 represents O&M costs only and a 20-year service life. The Current Estimate reflects all O&S costs and a 25-year service life. The key difference between the O&M cost and the O&S cost is that O&M costs do not include Military Personnel costs.