



## Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-202



### **AH-64E Apache Remanufacture (AH-64E Remanufacture)**

As of FY 2015 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

# Report Documentation Page

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## Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
BA - Budget Authority/Budget Activity  
BY - Base Year  
DAMIR - Defense Acquisition Management Information Retrieval  
Dev Est - Development Estimate  
DoD - Department of Defense  
DSN - Defense Switched Network  
Econ - Economic  
Eng - Engineering  
Est - Estimating  
FMS - Foreign Military Sales  
FY - Fiscal Year  
IOC - Initial Operational Capability  
\$K - Thousands of Dollars  
LRIP - Low Rate Initial Production  
\$M - Millions of Dollars  
MILCON - Military Construction  
N/A - Not Applicable  
O&S - Operating and Support  
Oth - Other  
PAUC - Program Acquisition Unit Cost  
PB - President's Budget  
PE - Program Element  
Proc - Procurement  
Prod Est - Production Estimate  
QR - Quantity Related  
Qty - Quantity  
RDT&E - Research, Development, Test, and Evaluation  
SAR - Selected Acquisition Report  
Sch - Schedule  
Spt - Support  
TBD - To Be Determined  
TY - Then Year  
UCR - Unit Cost Reporting

## Program Information

**Program Name**

AH-64E Apache Remanufacture (AH-64E Remanufacture)

**DoD Component**

Army

## Responsible Office

**Responsible Office**

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**Date Assigned** August 9, 2012

## References

**SAR Baseline (Production Estimate)**

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 16, 2010

**Approved APB**

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated November 26, 2012

## Mission and Description

The AH-64E Apache Remanufacture (AH-64E Remanufacture) is the heavy attack helicopter of the current and the future force. It is a twin engine, four bladed, tandem seat, attack helicopter with 30-millimeter ammunition, 2.75-inch rockets, laser & Radio Frequency Hellfire missiles. AH-64E is the Army's network-centric, multi-role weapon system within the Future Modular Force (FMF). It will provide the capability to simultaneously conduct (or quickly transition between) close combat, mobile strike, armed reconnaissance, security and vertical maneuver missions across the full spectrum of warfare from Stability And Support Operations to Major Combat Operations when required in day, night, obscured battlefield and adverse weather conditions. AH-64E will enable the Joint Air/Ground Maneuver Team to dominate the battle space by providing air-ground synergy through real time Intelligence, Surveillance and Reconnaissance (ISR) information and responsive precision fires. AH-64E will be linked to Joint and Combined Arms Air/Ground Maneuver Teams via Enhanced Digital Communications, Unmanned Aircraft Systems Data Links and Joint Networking waveforms.

The AH-64E is an Apache Attack Helicopter modified as required to effectively and efficiently integrate the Longbow Apache well into the 21st century, by providing improvements to make it relevant in FMF operations. It provides a significantly enhanced warfighting capability over the AH-64A and AH-64D. It is capable of being employed day or night in adverse weather and obscurants, and can effectively engage and destroy advanced threat weapon systems on the air-land battlefield. Tactically, the AH-64E provides significant war fighting advantages over the original AH-64D and multiplies the combat effectiveness of the entire fleet. It will be fully capable of employing the Longbow Fire Control Radar mission kit, the Modernized Target Acquisition Designation System/Modernized Pilot Night Vision System, the Longbow Hellfire missiles, and future improved munitions in addition to the normal complement of AH-64D munitions.

The AH-64E will be fully network-centric capable with current digitized forces and FMF equipped forces. This will enable interoperability with current and future Tactical Operations Center and Army Battle Command System forces. In addition, it will reduce the logistics footprint and enhance its deployability, reduce O&S costs, improve AH-64D model flight performance and provide a means to effectively utilize already funded technology insertions.

AH-64E will operate within the future force system-of-systems environment, where maximum combat power is delivered to units only in coherent packages of systems with synergistic interdependence. The FMF concept drives the demand for network centric interdependence and Joint integration across the force to new levels. The AH-64E meets the challenge of providing and integrating Command and Control, ISR, and communications connectivity for attack/reconnaissance aviation within Brigade Combat Teams, Divisions and Corps.

## Executive Summary

The Apache AH-64E Remanufacture Program, previously known as Apache Block IIIA, has gone through the appropriate process to change the Mission Design Series. On June 28, 2006, the Defense Acquisition Executive (DAE) conducted a successful Milestone (MS) B review of the AH-64E program. As a result, the DAE signed an Acquisition Decision Memorandum (ADM), dated July 10, 2006, approving MS B, authorizing the AH-64E program to enter System Development and Demonstration (SDD) and designating it as an Acquisition Category (ACAT) ID program. On July 14, 2006, the Apache Project Manager (PM) awarded an SDD contract to the Boeing Company to begin the development effort for AH-64E. A follow-on ADM was approved on March 7, 2007 authorizing an LRIP quantity of 59 aircraft and granting Army authority to procure long-lead items beginning in FY 2009. The APB schedule milestones established for the Preliminary Design Review and the Critical Design Review were successfully completed on April 19, 2007 and January 30, 2008 respectively. The Limited User Test was successfully executed in November 2009.

The PM was directed in to increase total procurement quantity by 56 aircraft. These 56 aircraft were Apache AH-64E New Build aircraft included in the FY 2011 PB at a total of \$2.6 billion. This change was implemented to support an increase to the training base capacity and to establish a new heavy combat aviation brigade in the active component. The baseline program was a remanufacture production program. These additional aircraft procurements would be Apache AH-64E New Build aircraft at a unit cost significantly higher than the remanufacture unit cost. The addition of the Apache AH-64E New Build aircraft along with minor fact-of-life changes to the program since the beginning of the RDT&E phase caused a Nunn-McCurdy unit cost breach to the APUC which was reflected in the December 2009 SAR. The DAE supported a rapid Nunn-McCurdy process which was completed June 1, 2010 with an ADM certifying the program to move forward to MS C and separating the program into two Major Defense Acquisition Programs for cost and reporting purposes (Apache AH-64E Remanufacture and Apache AH-64E New Build).

A successful MS C Defense Acquisition Board (DAB) was completed on September 27, 2010. The Apache AH-64E DAB allowed the move into LRIP and advance procurement actions for Full Rate Production (FRP). An LRIP contract was awarded on October 22, 2010 procuring a total of 51 remanufactured AH-64E aircraft. The first Apache AH-64E Remanufacture production delivery occurred October 24, 2011 with a formal roll out ceremony held November 2, 2011. The Initial Operational Test and Evaluation for the Apache AH-64E Remanufacture production aircraft was completed April 2012. A successful DAB was held on August 16, 2012 which approved FRP for the Apache AH-64E Remanufacture program and authorized up to 12 LRIP aircraft for the Apache AH-64E New Build program in FY 2013. The DAE issued an ADM that approved the designation of the Apache AH-64E Remanufacture and Apache AH-64E New Build programs as ACAT IC after approval of the AH-64E Remanufacture APB. The ADM also stated that once the AH-64E New Build program was designated as ACAT IC, the Army Acquisition Executive (AAE) would be responsible for the Apache AH-64E New Build APB and the subsequent Apache AH-64E New Build FRP decision as the Milestone Decision Authority. The APB was approved by the DAE on November 26, 2012. The Apache AH-64E New Build ADM was approved by the AAE on March 11, 2013 and authorized FRP for the Apache AH-64E New Build program.

The Apache PM's Office has breached the APB threshold for procurement cost for the AH-64E Remanufacture program, the APUC and PAUC APB 10 percent threshold. This cost divergence is largely due to an updated Program Office Estimate (POE) that includes the Army decision to move the Recapitalization costs (\$378M) for Airframe and Sensors to the AH-64E Remanufacture funding line from the AH-64 Modifications Aircraft Procurement, Army funding line for years FY 2015 through FY 2026. This cost was not previously included in the Office of the Secretary of Defense Cost Analysis and Program Evaluation (CAPE) Independent Cost Estimate (ICE) when the APB was established. Also not captured in the CAPE ICE are the "Fact of Life" changes that are having a compounding affect on the current POE. These changes include FY 2013 Congressional

reductions (\$50M), FY 2013 Sequestration (\$34M), an FY 2014 Army adjustment (\$100M), and the current FY 2015 PB changes (\$175M). These changes significantly reduce procurement quantities below the minimum sustainment rate of 48 per annum for the AH-64E production line which significantly increases unit costs.

To-date, 51 LRIP Apache AH-64E Remanufacture aircraft have been delivered. Apache AH-64E First Unit Equipped and IOC milestones were successfully reached in May 2013 and November 2013 respectively, as planned. FRP contract negotiations are complete for both the Apache AH-64E Remanufacture and Apache AH-64E New Build Programs, and the first FRP Remanufacture Apache AH-64E was delivered in March 2014.

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

### Threshold Breaches

APB Breaches	
--------------	--

<b>Schedule</b>		<input type="checkbox"/>
<b>Performance</b>		<input type="checkbox"/>
<b>Cost</b>	RDT&E	<input type="checkbox"/>
	Procurement	<input checked="" type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
<b>O&amp;S Cost</b>		<input type="checkbox"/>
<b>Unit Cost</b>	PAUC	<input checked="" type="checkbox"/>
	APUC	<input checked="" type="checkbox"/>

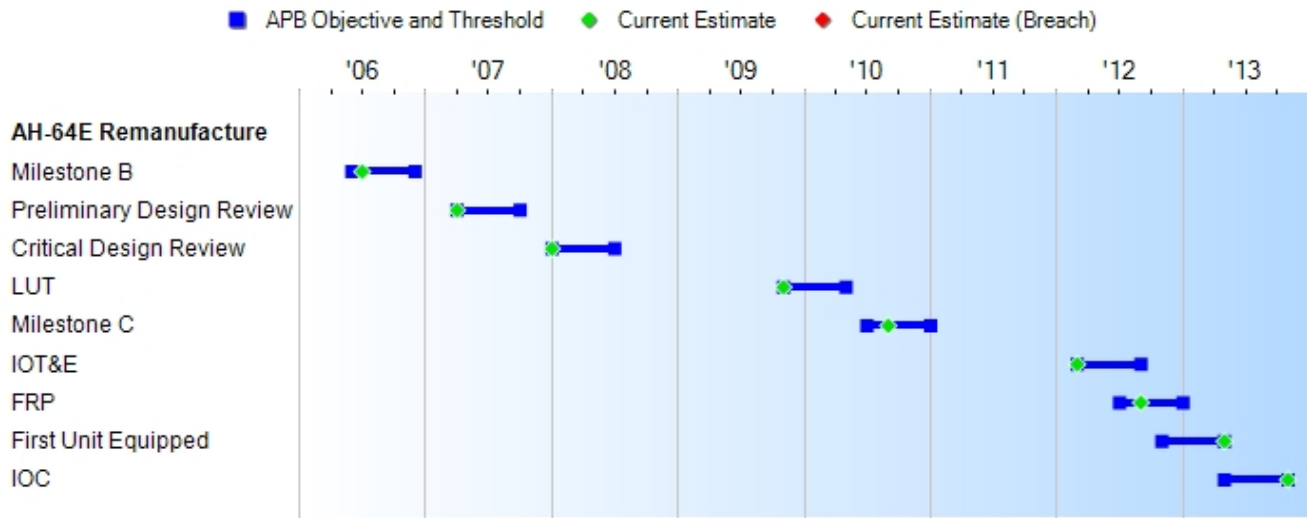
#### Explanation of Breach

The AH-64E Remanufacture program is reporting an APB Procurement breach, as well as APUC and PAUC breaches due to an updated Program Office Estimate that includes the Army decision to move Recapitalization costs for Airframe and Sensors to the AH-64E Remanufacture funding line. These costs were previously in the AH-64 Modifications Aircraft Procurement, Army funding line. The Milestone Decision Authority was briefed on the Unit Cost increases on October 24, 2013. A Program Deviation Report was submitted on November 04, 2013.

Nunn-McCurdy Breaches	
-----------------------	--

<b>Current UCR Baseline</b>		
	PAUC	None
	APUC	None
<b>Original UCR Baseline</b>		
	PAUC	None
	APUC	None

### Schedule



Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate
		Objective	Threshold	
Milestone B	JUN 2006	JUN 2006	DEC 2006	JUL 2006
Preliminary Design Review	APR 2007	APR 2007	OCT 2007	APR 2007
Critical Design Review	JAN 2008	JAN 2008	JUL 2008	JAN 2008
LUT	NOV 2009	NOV 2009	MAY 2010	NOV 2009
Milestone C	JUL 2010	JUL 2010	JAN 2011	SEP 2010
IOT&E	MAR 2012	MAR 2012	SEP 2012	MAR 2012
FRP	JUL 2012	JUL 2012	JAN 2013	SEP 2012
First Unit Equipped	NOV 2012	NOV 2012	MAY 2013	MAY 2013
IOC	MAY 2013	MAY 2013	NOV 2013	NOV 2013

**Change Explanations**

None

**Memo**

AH-64E Remanufacture (formerly known as AB3A) schedule encompasses a 12-year EMD phase which began with a risk reduction effort from May 2005 to July 2006. This effort was followed by the current development effort which began in July 2006 and will continue through September 2019. Production started in 2010 and will continue through 2025.

## **Acronyms and Abbreviations**

AB3A - Apache Block 3A

EMD - Engineering Manufacturing and Development

FRP - Full Rate Production

IOT&E - Initial Operational Test and Evaluation

LUT - Limited User Test

## Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Net Ready	Fully support execution of all operational activities.	Fully support execution of all operational activities.	Fully support execution of joint critical operational activities.	Met Threshold	Support execution of all critical operational activities
Performance					
6000' PA, 95 F OGE Hover (lbs/payload)	4,100	4,100	3,400	Met Threshold	3400
Mission Reliability					
MTBF(M) hrs.					
Lot 1	22	22	15.3	Met Objective	15.3
Lot 4	22	22	17	TBD	17
MR for 3.5 hr. flight (%)	85	85	80	Met Objective	80
Survivability					
Safe operation (minutes)	30	30	30	Met Objective	30
Survive Band IV MANPADS IR Missile Engagement	IAW JROCM 086-10	IAW JROCM 086-10	IAW JROCM 086-10	Met Objective	IAW JROCM 086-10
Force Protection					
Crewstation armor survivability (mm)	IAW JROCM 086-10	IAW JROCM 086-10	IAW JROCM 086-10	Met Objective	IAW JROCM 086-10
Crewstation armor barrier survivability (mm)	IAW JROCM 086-10	IAW JROCM 086-10	IAW JROCM 086-10	Met Objective	IAW JROCM 086-10

### Requirements Source

Capability Production Document (CPD) dated June 1, 2010

### Change Explanations

None

### Memo

Net Ready Key Performance Parameter compliance is achieved by meeting the information exchange capabilities required by the Integrated Architectures Operational View -1 and is demonstrated by achieving Joint Interoperability Certification, Army Interoperability Certification, and DoD Information Assurance and Accreditation

Process accreditation.

Demonstrated Performance based upon Director, Operational Test and Evaluation assessment of AH-64E Initial Operational Test and Evaluation.

### **Acronyms and Abbreviations**

% - Percent

' - feet

F - Fahrenheit

hr - hour

hrs - hours

IAW - In Accordance With

IR - Infrared

JROCM - Joint Requirements Oversight Council Memorandum

lbs - Pounds

MANPADS - Man Portable Air Defense System

mm - Millimeters

MR - Mission Reliability

MTBF (M) - Mean Time Between Failure (Mission)

OGE - Out of Ground Effect

PA - Pressure Altitude

### Track to Budget

**RDT&E**

Appn	BA	PE
Army 2040	07	0203744A
<b>Project</b>		<b>Name</b>
D17		Apache Block III

**Procurement**

Appn	BA	PE
Army 2031	01	0210100A
<b>Line Item</b>		<b>Name</b>
A05111		Apache Longbow Block III A Reman
Army 2031	02	0210102A
<b>Line Item</b>		<b>Name</b>
AA6606		AH-64 Mods (Shared) (Sunk)
<b>Notes:</b>		This line is shared because in FY 2009, before AH-64E was a separate program from AH-64 Mods, there was AH-64E advance procurement that has to be captured in the AH-64E SAR.

## Cost and Funding

### Cost Summary

#### Total Acquisition Cost and Quantity

Appropriation	BY2010 \$M			BY2010 \$M	TY \$M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold	Current Estimate	Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	1611.8	1504.2	1654.6	1526.6	1664.7	1557.8	1588.5
Procurement	8856.9	10088.1	11096.9	<b>11244.4</b> <sup>1</sup>	10231.9	12041.7	13492.9
Flyaway	--	--	--	10149.4	--	--	12156.9
Recurring	--	--	--	10087.5	--	--	12086.3
Non Recurring	--	--	--	61.9	--	--	70.6
Support	--	--	--	1095.0	--	--	1336.0
Other Support	--	--	--	767.3	--	--	935.1
Initial Spares	--	--	--	327.7	--	--	400.9
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	10468.7	11592.3	N/A	12771.0	11896.6	13599.5	15081.4

<sup>1</sup> APB Breach

Confidence Level for Current APB Cost 50% -

This estimate, like all previous Cost Analysis Improvement Group (CAIG) and Cost Assessment and Program Evaluation (CAPE) estimates, is built upon a product-oriented work breakdown structure; is based on historical actual cost information to the maximum extent possible; and, most importantly, is based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition Programs (MDAPs). Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

<b>Quantity</b>	<b>SAR Baseline Prod Est</b>	<b>Current APB Production</b>	<b>Current Estimate</b>
RDT&E	5	5	5
Procurement	634	634	634
Total	639	639	639

**Cost and Funding****Funding Summary**

**Appropriation and Quantity Summary**  
**FY2015 President's Budget / December 2013 SAR (TY\$ M)**

<b>Appropriation</b>	<b>Prior</b>	<b>FY2014</b>	<b>FY2015</b>	<b>FY2016</b>	<b>FY2017</b>	<b>FY2018</b>	<b>FY2019</b>	<b>To Complete</b>	<b>Total</b>
RDT&E	1120.1	124.8	124.1	113.3	52.5	21.5	32.2	0.0	1588.5
Procurement	1952.3	759.4	651.4	1203.1	1272.8	1370.1	1102.0	5181.8	13492.9
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>PB 2015 Total</b>	<b>3072.4</b>	<b>884.2</b>	<b>775.5</b>	<b>1316.4</b>	<b>1325.3</b>	<b>1391.6</b>	<b>1134.2</b>	<b>5181.8</b>	<b>15081.4</b>
<b>PB 2014 Total</b>	<b>3153.6</b>	<b>884.2</b>	<b>995.3</b>	<b>986.4</b>	<b>942.1</b>	<b>895.3</b>	<b>871.3</b>	<b>5032.0</b>	<b>13760.2</b>
<b>Delta</b>	<b>-81.2</b>	<b>0.0</b>	<b>-219.8</b>	<b>330.0</b>	<b>383.2</b>	<b>496.3</b>	<b>262.9</b>	<b>149.8</b>	<b>1321.2</b>

<b>Quantity</b>	<b>Undistributed</b>	<b>Prior</b>	<b>FY2014</b>	<b>FY2015</b>	<b>FY2016</b>	<b>FY2017</b>	<b>FY2018</b>	<b>FY2019</b>	<b>To Complete</b>	<b>Total</b>
Development	5	0	0	0	0	0	0	0	0	5
Production	0	88	35	25	40	74	72	53	247	634
<b>PB 2015 Total</b>	<b>5</b>	<b>88</b>	<b>35</b>	<b>25</b>	<b>40</b>	<b>74</b>	<b>72</b>	<b>53</b>	<b>247</b>	<b>639</b>
<b>PB 2014 Total</b>	<b>5</b>	<b>91</b>	<b>42</b>	<b>48</b>	<b>48</b>	<b>48</b>	<b>48</b>	<b>48</b>	<b>261</b>	<b>639</b>
<b>Delta</b>	<b>0</b>	<b>-3</b>	<b>-7</b>	<b>-23</b>	<b>-8</b>	<b>26</b>	<b>24</b>	<b>5</b>	<b>-14</b>	<b>0</b>

## Cost and Funding

### Annual Funding By Appropriation

#### Annual Funding TY\$

#### 2040 | RDT&E | Research, Development, Test, and Evaluation, Army

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
2005	--	--	--	--	--	--	57.0
2006	--	--	--	--	--	--	104.1
2007	--	--	--	--	--	--	118.9
2008	--	--	--	--	--	--	187.1
2009	--	--	--	--	--	--	198.3
2010	--	--	--	--	--	--	150.7
2011	--	--	--	--	--	--	90.6
2012	--	--	--	--	--	--	92.7
2013	--	--	--	--	--	--	120.7
2014	--	--	--	--	--	--	124.8
2015	--	--	--	--	--	--	124.1
2016	--	--	--	--	--	--	113.3
2017	--	--	--	--	--	--	52.5
2018	--	--	--	--	--	--	21.5
2019	--	--	--	--	--	--	32.2
<b>Subtotal</b>	<b>5</b>	--	--	--	--	--	<b>1588.5</b>

## Annual Funding BY\$

## 2040 | RDT&amp;E | Research, Development, Test, and Evaluation, Army

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2010 \$M	Non End Item Recurring Flyaway BY 2010 \$M	Non Recurring Flyaway BY 2010 \$M	Total Flyaway BY 2010 \$M	Total Support BY 2010 \$M	Total Program BY 2010 \$M
2005	--	--	--	--	--	--	61.7
2006	--	--	--	--	--	--	109.7
2007	--	--	--	--	--	--	122.3
2008	--	--	--	--	--	--	188.9
2009	--	--	--	--	--	--	197.7
2010	--	--	--	--	--	--	148.0
2011	--	--	--	--	--	--	87.2
2012	--	--	--	--	--	--	87.8
2013	--	--	--	--	--	--	112.3
2014	--	--	--	--	--	--	113.1
2015	--	--	--	--	--	--	110.1
2016	--	--	--	--	--	--	98.6
2017	--	--	--	--	--	--	44.8
2018	--	--	--	--	--	--	18.0
2019	--	--	--	--	--	--	26.4
<b>Subtotal</b>	<b>5</b>	--	--	--	--	--	<b>1526.6</b>

**Annual Funding TY\$**  
**2031 | Procurement | Aircraft Procurement, Army**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway TY \$M</b>	<b>Non End Item Recurring Flyaway TY \$M</b>	<b>Non Recurring Flyaway TY \$M</b>	<b>Total Flyaway TY \$M</b>	<b>Total Support TY \$M</b>	<b>Total Program TY \$M</b>
2009	--	28.2	--	0.2	28.4	--	28.4
2010	8	225.9	--	4.1	230.0	--	230.0
2011	16	491.0	--	--	491.0	--	491.0
2012	27	600.6	--	8.7	609.3	--	609.3
2013	37	548.9	--	9.0	557.9	35.7	593.6
2014	35	644.7	--	9.2	653.9	105.5	759.4
2015	25	545.2	--	9.4	554.6	96.8	651.4
2016	40	1076.1	--	9.6	1085.7	117.4	1203.1
2017	74	1118.8	--	9.7	1128.5	144.3	1272.8
2018	72	1222.4	--	--	1222.4	147.7	1370.1
2019	53	972.9	--	--	972.9	129.1	1102.0
2020	44	843.9	--	--	843.9	122.8	966.7
2021	48	895.2	--	--	895.2	93.6	988.8
2022	48	911.6	--	10.7	922.3	87.2	1009.5
2023	48	934.2	--	--	934.2	97.9	1032.1
2024	48	814.5	--	--	814.5	91.0	905.5
2025	11	212.2	--	--	212.2	67.0	279.2
<b>Subtotal</b>	<b>634</b>	<b>12086.3</b>	<b>--</b>	<b>70.6</b>	<b>12156.9</b>	<b>1336.0</b>	<b>13492.9</b>

**Annual Funding BY\$**  
**2031 | Procurement | Aircraft Procurement, Army**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2010 \$M</b>	<b>Non End Item Recurring Flyaway BY 2010 \$M</b>	<b>Non Recurring Flyaway BY 2010 \$M</b>	<b>Total Flyaway BY 2010 \$M</b>	<b>Total Support BY 2010 \$M</b>	<b>Total Program BY 2010 \$M</b>
2009	--	27.9	--	0.2	28.1	--	28.1
2010	8	220.0	--	4.0	224.0	--	224.0
2011	16	469.5	--	--	469.5	--	469.5
2012	27	564.1	--	8.1	572.2	--	572.2
2013	37	504.5	--	8.3	512.8	32.8	545.6
2014	35	581.0	--	8.3	589.3	95.1	684.4
2015	25	482.0	--	8.3	490.3	85.6	575.9
2016	40	932.8	--	8.3	941.1	101.8	1042.9
2017	74	950.8	--	8.2	959.0	122.6	1081.6
2018	72	1018.4	--	--	1018.4	123.1	1141.5
2019	53	794.7	--	--	794.7	105.4	900.1
2020	44	675.8	--	--	675.8	98.3	774.1
2021	48	702.8	--	--	702.8	73.5	776.3
2022	48	701.7	--	8.2	709.9	67.1	777.0
2023	48	705.0	--	--	705.0	73.8	778.8
2024	48	602.6	--	--	602.6	67.3	669.9
2025	11	153.9	--	--	153.9	48.6	202.5
<b>Subtotal</b>	<b>634</b>	<b>10087.5</b>	<b>--</b>	<b>61.9</b>	<b>10149.4</b>	<b>1095.0</b>	<b>11244.4</b>

**Cost Quantity Information**  
**2031 | Procurement | Aircraft Procurement, Army**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway (Aligned with Quantity) BY 2010 \$M</b>
2009	--	--
2010	8	178.6
2011	16	378.6
2012	27	543.2
2013	37	586.5
2014	35	544.0
2015	25	478.9
2016	40	706.6
2017	74	1079.2
2018	72	1073.4
2019	53	819.4
2020	44	675.3
2021	48	702.8
2022	48	701.0
2023	48	705.7
2024	48	708.6
2025	11	205.7
<b>Subtotal</b>	<b>634</b>	<b>10087.5</b>

**Low Rate Initial Production**

	<b>Initial LRIP Decision</b>	<b>Current Total LRIP</b>
<b>Approval Date</b>	10/7/2010	10/7/2010
<b>Approved Quantity</b>	51	51
<b>Reference</b>	MS C ADM	MS C ADM
<b>Start Year</b>	2010	2010
<b>End Year</b>	2013	2013

LRIP quantity is 51 in accordance with the Milestone (MS) C Acquisition Decision Memorandum (ADM) approved October 7, 2010.

## Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost \$M	Memo
United Kingdom		50	2000.0	

United Kingdom Projected Letter of Offer and Acceptance signature 2015.

## Nuclear Costs

None

## Unit Cost

### Unit Cost Report

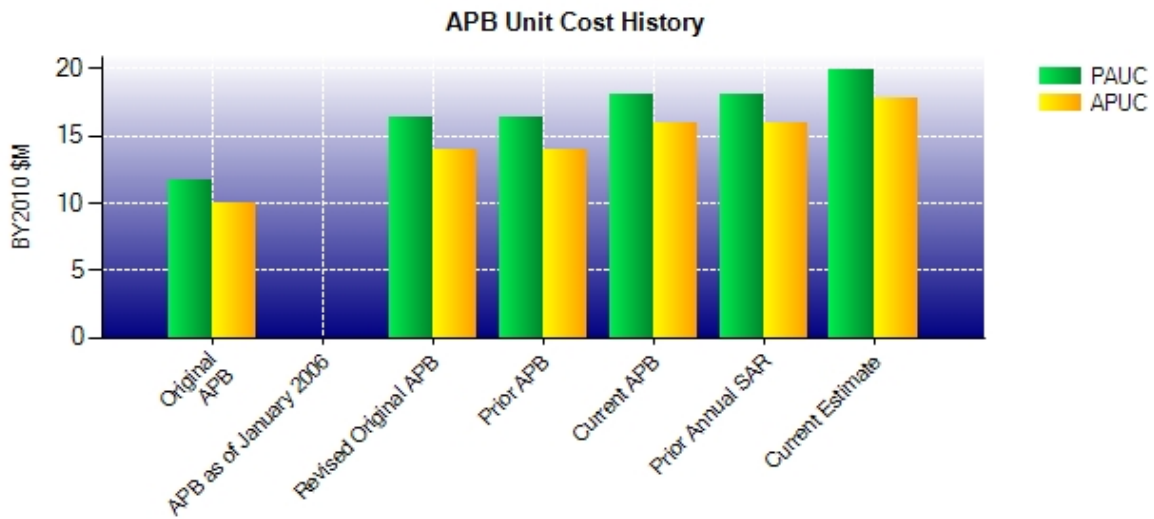
	BY2010 \$M	BY2010 \$M	
Unit Cost	Current UCR Baseline (NOV 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost	11592.3	12771.0	
Quantity	639	639	
Unit Cost	18.141	<b>19.986</b> <sup>1</sup>	+10.17
<b>Average Procurement Unit Cost (APUC)</b>			
Cost	10088.1	11244.4	
Quantity	634	634	
Unit Cost	15.912	<b>17.736</b> <sup>1</sup>	+11.46

	BY2010 \$M	BY2010 \$M	
Unit Cost	Revised Original UCR Baseline (DEC 2010 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost	10468.7	12771.0	
Quantity	639	639	
Unit Cost	16.383	19.986	+21.99
<b>Average Procurement Unit Cost (APUC)</b>			
Cost	8856.9	11244.4	
Quantity	634	634	
Unit Cost	13.970	17.736	+26.96

<sup>1</sup> APB Unit Cost Breach

### Unit Cost History



	Date	BY2010 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
<b>Original APB</b>	AUG 2006	11.735	9.945	13.445	11.649
<b>APB as of January 2006</b>	N/A	N/A	N/A	N/A	N/A
<b>Revised Original APB</b>	DEC 2010	16.383	13.970	18.618	16.139
<b>Prior APB</b>	DEC 2010	16.383	13.970	18.618	16.139
<b>Current APB</b>	NOV 2012	18.141	15.912	21.282	18.993
<b>Prior Annual SAR</b>	DEC 2012	18.108	15.890	21.534	19.246
<b>Current Estimate</b>	DEC 2013	19.986	17.736	23.602	21.282

### 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	
13.445	-0.626	-0.159	0.231	0.000	3.961	0.000	1.766	5.173	18.618

**Current SAR Baseline to Current Estimate (TY \$M)**

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
18.618	0.495	0.000	-0.007	0.000	5.114	0.000	-0.618	4.984	23.602

**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	
11.649	-0.614	-0.056	0.233	0.000	3.147	0.000	1.780	4.490	16.139

**Current SAR Baseline to Current Estimate (TY \$M)**

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
16.139	0.467	0.000	-0.007	0.000	5.307	0.000	-0.623	5.144	21.282

**SAR Baseline History**

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	JUN 2006	JUN 2006	JUL 2006
Milestone C	N/A	APR 2010	JUL 2010	SEP 2010
IOC	N/A	JAN 2013	MAY 2013	NOV 2013
Total Cost (TY \$M)	N/A	8093.9	11896.6	15081.4
Total Quantity	N/A	602	639	639
Prog. Acq. Unit Cost (PAUC)	N/A	13.445	18.618	23.602

**Cost Variance**

<b>Summary Then Year \$M</b>				
	<b>RDT&amp;E</b>	<b>Proc</b>	<b>MILCON</b>	<b>Total</b>
SAR Baseline (Prod Est)	1664.7	10231.9	--	11896.6
Previous Changes				
Economic	+25.9	+371.7	--	+397.6
Quantity	--	--	--	--
Schedule	--	+43.5	--	+43.5
Engineering	--	--	--	--
Estimating	-132.4	+1112.3	--	+979.9
Other	--	--	--	--
Support	--	+442.6	--	+442.6
Subtotal	-106.5	+1970.1	--	+1863.6
Current Changes				
Economic	-5.8	-75.7	--	-81.5
Quantity	--	--	--	--
Schedule	--	-47.9	--	-47.9
Engineering	--	--	--	--
Estimating	+36.1	+2252.1	--	+2288.2
Other	--	--	--	--
Support	--	-837.6	--	-837.6
Subtotal	+30.3	+1290.9	--	+1321.2
Total Changes	-76.2	+3261.0	--	+3184.8
CE - Cost Variance	1588.5	13492.9	--	15081.4
CE - Cost & Funding	1588.5	13492.9	--	15081.4

<b>Summary Base Year 2010 \$M</b>				
	<b>RDT&amp;E</b>	<b>Proc</b>	<b>MILCON</b>	<b>Total</b>
SAR Baseline (Prod Est)	1611.8	8856.9	--	10468.7
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-115.4	+868.5	--	+753.1
Other	--	--	--	--
Support	--	+348.9	--	+348.9
Subtotal	-115.4	+1217.4	--	+1102.0
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	-8.9	--	-8.9
Engineering	--	--	--	--
Estimating	+30.2	+1906.6	--	+1936.8
Other	--	--	--	--
Support	--	-727.6	--	-727.6
Subtotal	+30.2	+1170.1	--	+1200.3
Total Changes	-85.2	+2387.5	--	+2302.3
CE - Cost Variance	1526.6	11244.4	--	12771.0
CE - Cost & Funding	1526.6	11244.4	--	12771.0

Previous Estimate: December 2012

RDT&E	\$M	
	Base Year	Then Year
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-5.8
Adjustment for current and prior escalation. (Estimating)	+3.0	+3.2
Funding provided for FY 2018 and FY 2019 per FY 2015 PB reflect contract closeout which includes final testing and logistics documentation. (Estimating)	+44.4	+53.7
Current cost estimate updated to reflect FY 2005-2013 actuals. (Estimating)	+11.3	+11.3
Revised current cost estimate to reflect reductions in FY 2015 due to FY 2015 PB. (Estimating)	-28.5	-32.1
RDT&E Subtotal	+30.2	+30.3

Procurement	\$M	
	Base Year	Then Year
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-75.7
Acceleration of procurement buy profile to reflect redirection of the program as a result of FY 2015 PB funding. (Schedule)	0.0	-35.4
Additional schedule variance to reflect the completion of the program one year earlier in FY 2025. (Schedule)	-8.9	-12.5
Adjustment for current and prior escalation. (Estimating)	+16.0	+17.4
Revised cost estimate to reflect FY 2009 - FY 2013 actuals. (Estimating)	+343.8	+364.7
Incorporated Lot 4 Capability Cut-in, Addition of Reman Recapitalization program from Modifications line to Reman APB, Support costs increased in accordance with guidance on allocation distributions, and Boeing Labor hours and Material increased based on updated actual cost data. (Estimating)	+1546.8	+1870.0
Adjustment for current and prior escalation. (Support)	+3.8	+4.2
Revised cost estimate to accurately reflect decreases in costs for Transportability Kits, Helmets, Radar Frequency Interferometer, more efficient engine procurement, and Reduced Crashworthy External Fuel Tanks. (Support)	-749.4	-865.5
Initial Spares is a factor off of recurring hardware and Government Furnished Equipment. Spares cost fluctuates according to procurement schedule. (Support)	+18.0	+23.7
Procurement Subtotal	+1170.1	+1290.9

## Contracts

### General Contract Memo

AH-64E Remanufacture advance procurement contract was awarded third quarter FY 2012.

### Appropriation: RDT&E

Contract Name	<b>AB3 SDD and Risk and Reduction</b>
Contractor	The Boeing Company
Contractor Location	Mesa, AZ 85215
Contract Number, Type	W58RGZ-05-C-0001, CPIF
Award Date	July 14, 2006
Definitization Date	July 14, 2006

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
619.3	N/A	5	920.6	N/A	5	959.2	959.2

### Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to Government directed changes.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/30/2014)	-3.4	-4.1
Previous Cumulative Variances	-9.5	-5.4
Net Change	+6.1	+1.3

### Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to positive cost performance by the Analysis Integration Test, Training Device Suite, this is related to an underrun in the Bulk Allocation account and Material account.

The favorable net change in the schedule variance is due to an under-run in the Bulk Allocation account and Material account. The plan supports on-time completion of required functionality for Follow-On Test and Evaluation.

### Contract Comments

The initial revised contract target price represented initial award of AB3 Risk Reduction and System Development and Demonstration (SDD) in June 2005. The current contract name, contract type, award, definitization, and current contract target price reflect status with the award of the Apache Block 3 SDD through production Lot 4/6 configuration and associated directed changes to that contract. The contract was 90 percent complete but due to modifications and resources added this change is now 84 percent complete.

**Appropriation: Procurement**

Contract Name **AB3 LRIP**  
 Contractor The Boeing Company  
 Contractor Location 5000 E McDowell Road  
 Mesa, AZ 85215  
 Contract Number, Type W58RGZ-09-1-0161, FFP  
 Award Date July 30, 2009  
 Definitization Date April 26, 2012

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
923.4	N/A	51	959.0	N/A	51	959.0	959.0

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to new requirements being identified and placed on contract.

**Cost and Schedule Variance Explanations**

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

**Contract Comments**

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

**Appropriation: Procurement**

Contract Name **REU/UTA LRIP**  
 Contractor Longbow LLC  
 Contractor Location 5600 W Sand Lake Rd  
 Orlando, FL 32819-8907  
 Contract Number, Type W58RGZ-10-C-0005, FFP  
 Award Date October 16, 2009  
 Definitization Date December 21, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
58.5	N/A	40	189.1	N/A	40	189.1	189.1

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to new requirements being identified and placed on contract.

**Cost and Schedule Variance Explanations**

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

**Contract Comments**

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

**Appropriation: Procurement**

Contract Name **FRP REU/UTA Lot 3**  
 Contractor Longbow LLC  
 Contractor Location 5600 W Sand Lake Road  
 Orlando, FL 32819-8907  
 Contract Number, Type W58RGZ-12-C-0049, FFP  
 Award Date August 30, 2012  
 Definitization Date March 31, 2014

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
39.0	N/A	34	46.8	N/A	34	46.8	46.8

**Target Price Change Explanation**

**Cost and Schedule Variance Explanations**

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

**Contract Comments**

This is the first time this contract is being reported.

**Appropriation: Procurement**

Contract Name	<b>FRP</b>
Contractor	The Boeing Company
Contractor Location	5000 E McDowell Road Mesa, AZ 85215-9707
Contract Number, Type	W58RGZ-12-C-0055, FPIF
Award Date	June 29, 2012
Definitization Date	May 26, 2014

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
N/A	246.6	72	N/A	246.6	72	246.6	246.6

**Cost and Schedule Variance Explanations**

Cost and Schedule Variance reporting is not required on this FPIF contract.

**General Contract Variance Explanation**

Earned Value Metrics reporting waiver package was submitted for this contract on March 19, 2014.

**Contract Comments**

This is the first time this contract is being reported.

**Deliveries and Expenditures**

<b>Delivered to Date</b>	<b>Plan to Date</b>	<b>Actual to Date</b>	<b>Total Quantity</b>	<b>Percent Delivered</b>
Development	5	5	5	100.00%
Production	51	51	634	8.04%
<b>Total Program Quantity Delivered</b>	<b>56</b>	<b>56</b>	<b>639</b>	<b>8.76%</b>

<b>Expended and Appropriated (TY \$M)</b>			
Total Acquisition Cost	15081.4	Years Appropriated	10
Expended to Date	2127.6	Percent Years Appropriated	47.62%
Percent Expended	14.11%	Appropriated to Date	3956.6
Total Funding Years	21	Percent Appropriated	26.23%

The above data is current as of 1/31/2014.

## Operating and Support Cost

### AH-64E Remanufacture

#### Assumptions and Ground Rules

##### Cost Estimate Reference:

Based upon the Office of the Secretary of Defense (OSD) Cost Assessment and Program Evaluation (CAPE) Independent Cost Estimate (ICE) dated August 15, 2012. The estimate was updated on September 17, 2013 and again on February 24, 2014 for fact-of-life-changes.

##### Sustainment Strategy:

The AH-64E Apache is maintained by a mix of soldier and civilian maintainers. Assumes the fielding of 634 Remanufactured aircraft, each flying 203.4 hours per year. The estimate is based on a 20-year service life. The Mean Time Between Failure goal for the aircraft system is 22 hours at maturity once the total program reaches 50,000 operational hours.

##### Antecedent Information:

The antecedent to the AH-64E Apache is the AH-64D. The AH-64D will be in service until 2027. There are currently 630 AH-64Ds in operation. The AH-64D will have a total of 12,342 Fleet Years of Operational Tempo.  $12,342 * 3,157 = 38,963.7$  (BY 2010 \$M); the 38,963.7 (BY 2010 \$M) translates to 40,955.8 (TY \$M).

Unitized O&S Costs BY2010 \$K			
Cost Element	AH-64E Remanufacture Avg Annual Cost Per AB3 Aircraft	Longbow Apache (Antecedent) Avg Annual Cost Per Longbow Aircraft	
Unit-Level Manpower	1267.000	1267.000	
Unit Operations	211.000	211.000	
Maintenance	1021.000	1148.000	
Sustaining Support	275.000	275.000	
Continuing System Improvements	18.000	18.000	
Indirect Support	238.000	238.000	
Other	0.000	0.000	
<b>Total</b>	<b>3030.000</b>	<b>3157.000</b>	

##### Unitized Cost Comments:

$634 \text{ Helicopters} * 20 \text{ Year Life} * 3030 \text{ Unitized Cost} = 38,420.4$  (BY 2010 \$M). \$38,420.4 (BY 2010 \$M) translates to 56,491.9 (TY \$M).

	Total O&S Cost \$M			
	Current Production APB Objective/Threshold		Current Estimate	
	AH-64E Remanufacture		AH-64E Remanufacture	Longbow Apache (Antecedent)
<b>Base Year</b>	38506.0	42356.6	38420.4	38963.7
<b>Then Year</b>	53639.0	N/A	56491.9	40955.8

**Total O&S Costs Comments:**

The AH-64E Apache Remanufacture TY cost changed to reflect changes in the planned operational fleet schedule resulting from recent contract changes with the system Prime Contractor as of February 24, 2014.

<b>O&amp;S Cost Variance</b>		
<b>Category</b>	<b>Base Year 2010 \$M</b>	<b>Change Explanation</b>
Prior SAR Total O&S Estimate December 2012	40,056.1	
Cost Estimating Methodology	-2,295.1	Methodology for estimating training ammunition updated to match CAPE ICE dated August 15, 2012. Methodology to estimate Class IX Repair Parts updated to match current system reimbursable rates.
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	-215.6	Petroleum, Oil, and Lubricants rates updated February 24, 2014.
Technical Input	0.0	
Programmatic/Planning Factors	+874.9	Program Schedule updated February 24, 2014.
Other	0.0	
Total Changes	-1,635.7	
Current Estimate	38,420.4	

**Disposal Costs:**

Total Disposal Costs for the AH-64E Remanufacture and New Build aircraft is \$42.13M (BY 2010 \$M) in accordance with the OSD CAPE ICE dated August 15, 2012.