RCS: DD-A&T(Q&A)823-355

Joint Air-to-Ground Missile (JAGM)

As of FY 2021 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)

Program Information

Program Name

Joint Air-to-Ground Missile (JAGM)

DoD Component

Army

Joint Participants

Navy

Responsible Office

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Date Assigned: July 6, 2016

References

SAR Baseline (Production Estimate)

Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated June 15, 2018

Approved APB

Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated June 15, 2018

Mission and Description

The Joint Air-to-Ground Missile (JAGM) program is an Army-led, ACAT IC MDAP with Joint interest with the U.S. Marine Corps and U.S. Navy. The JAGM is the next generation of aviation-launched, fire and forget missiles to replace the HELLFIRE Laser and Longbow Radar missiles. JAGM will be used by Joint service aircraft for destruction of high value stationary, moving, and relocatable land and maritime targets from standoff range in day, night, adverse weather, and obscured battlefield conditions.

Executive Summary

Program Highlights Since Last Report

The JAGM requirements are stable and funding is adequate to meet cost, schedule, and performance objectives established in the current approved APB. There is no increased risk to the JAGM program since the last SAR.

The JAGM Product Office awarded LRIP 1, 2, and 2B in August through December 2018. LRIP 2B was the first contract award made without the use of advance procurement funding. LRIP 3 was awarded in November 2019 and a Rate Ramp in December 2019 to increase the facilitization and production capacity from 600 missiles per year to 1,200 missiles per year.

JAGM received the first delivery of LRIP missiles in December 2018 through January 2019, which were used to support Initial Operational Test & Evaluation (IOT&E). With subsequent missile deliveries, JAGM achieved Initial Operating Capability (IOC) in March 2019.

JAGM IOT&E & Apache AH-64E Version 6 (V6) Follow-on Operational Test & Evaluation II (FOT&E II) was conducted on April 24 through May 7, 2019. Eight total JAGM flight tests, two maritime and six land, were successfully completed. JAGM has demonstrated full capability on an AH-64E and successfully completed IOT&E.

The Cybersecurity Adversarial Assessment (AA) #1 was conducted in January 2019 and Cybersecurity AA #2 was conducted in June 2019. Both events produced no findings and were completed successfully.

Live Fire Test and Evaluation (LFT&E) lethality and the Live Fire strategy commitment were successfully completed on July 7, 2019. All shots were successful and will be assessed for lethality with the results evaluated by the Army Test & Evaluation Command (ATEC) and the office of the Director, Operational Test and Evaluation (DOT&E). Test results will support the Operational Evaluation Report (OER) from ATEC and the Beyond LRIP Report from DOT&E.

The JAGM Product Office completed seven missile launches in stressing, realistic, tactical conditions from the fully integrated Apache AH-64E V6 at Yuma Proving Ground, AZ on December 3-12, 2019. The collected data supports system evaluation, Safety Confirmation, Airworthiness Release, and validation and accreditation of the system simulation. All shots were successful and will be assessed for lethality. These results will support the OER and the Beyond LRIP Report.

JAGM is on target to meet all LRIP Exit Criteria stated in the ADM prior to FRP DR in May 2020.

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

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	**Significant Development Description**
October 2014	USD(AT&L) authorized the release of the final request for proposal for the JAGM Engineering and Manufacturing Development (EMD) contract and Low Rate Initial Production (LRIP) options to include LRIP long lead items.
July 2015	Lockheed Martin was awarded the competitive JAGM EMD contract to develop the next generation of aviation-launched missiles to replace the HELLFIRE laser and Longbow radar missiles.
August 2015	The Joint Attack Munition Systems (JAMS) Project Office, with support from the U.S. Army Aviation and Missile Research, Development and Engineering Center and Lockheed Martin, successfully conducted the third JAGM flight test at Eglin Air Force Base, Florida. The missile had a nominal launch and impacted and destroyed the target. The missile executed a Doppler Beam Sharpening trajectory, increasing the probability of hit against a difficult stationary target using the Active Fire and Forget. Among many firsts, this was the first test of JAGM using the Active Fire and Forget engagement mode and the first engagement of an armored vehicle.
January 2016	The JAMS Project Office conducted a successful JAGM System Critical Design Review (CDR)/Initial Production Readiness Review. The JAGM CDR confirmed the system design is stable and is able to meet system performance requirements as evidenced by the detailed design documentation. The CDR also demonstrated the program to be on track to achieve affordability, should cost goals and establish the system's initial product baseline. The OSD post-CDR Assessment Report provided an overall assessment of the review and technical risk.
August 2016	On August 23, 2016, JROC Memorandum 088-16 approved the Army's request to change the JAGM Key Performance Parameters for In-Flight Reliability to a Key System Attribute in accordance with the Joint Capabilities Integration and Development System manual.
March 2017	On March 17, 2017, the JAGM Product Office received the Army Program Delegation Decisions ADM in which the USD (AT&L) delegated to the Secretary of the Army milestone decision authority for JAGM. Accordingly, the designation for JAGM acquisition program is now ACAT IC.
June 2018	The JAGM program was approved for Milestone C in June 2018 and authorized entry into Production and Deployment.
August 2018	On August 16, 2018, the JAGM Product Office awarded LRIP 1 for a quantity of 373 missiles (Army).
September 2018	On September 11, 2018, LRIP 2 awarded a quantity of 600 missiles (502 Army and 98 Navy).
December 2018	On December 17, 2018, the JAGM Product Office awarded LRIP 2B for a quantity of 450 missiles (397 Army, six Navy, and 47 Other Customers). On December 19, 2018, JAGM received its first LRIP production missiles.
January 2019	On January 24-29, 2019, the JAGM Product Office, with support from Yuma Proving Ground, Redstone Test Center, U.S. Army Combat Capabilities Development Command Aviation & Missile Center, the Apache Project Office, Boeing, and Lockheed Martin, conducted six JAGM launches from the fully integrated Apache. These tests utilized the AH-64Ev6 with the JAGM Pilot-Vehicle Interface that provides optimized cockpit selections. On January 26, 2018, JAGM successfully completed Cooperative Vulnerability and Penetration Assessment (CVPA) and Cybersecurity Adversarial Assessment (AA).
March 2019	JAGM achieved IOC in March 2019.

May 2019	JAGM and Apache PMs conducted JAGM IOT&E & Apache AH-64E Version 6 (V6) Follow-on Operational Test & Evaluation II (FOT&E II) on April 24 through May 7, 2019. Eight total JAGM flight tests, two maritime and six land, were successfully completed. JAGM has demonstrated full capability on an AH-64E and successfully completed IOT&E.
July 2019	Live Fire Test and Evaluation (LFT&E) lethality and the Live Fire strategy commitment were successfully completed on July 7, 2019. The Army Test & Evaluation Command (ATEC) and the office of the Director, Operational Test and Evaluation (DOT&E) will evaluate all shots for lethality. Test results will support the Operational Evaluation Report (OER) from ATEC and the Beyond LRIP Report from DOT&E.
November 2019	On November 27, 2019, the JAGM Product Office awarded LRIP 3 for a quantity of 825 missiles (750 Army and 75 Navy).
December 2019	On December 13, 2019, the JAGM Product Office awarded a Rate Ramp to increase the facilitization and production capacity from 600 missiles per year to 1,200 missiles per year.
December 2019	The JAGM Product Office completed seven missile launches in stressing, realistic, tactical conditions from Apache AH-64E version 6 at Yuma Proving Ground, AZ on December 3-12, 2019. The collected data supports system evaluation, Safety Confirmation, Airworthiness Release, and validation and accreditation of the system simulation. All shots were successful and will be assessed for lethality. These results will support the Operational Evaluation Report and the Beyond LRIP Report from office of the Director, Operational Test and Evaluation (DOT&E). JAGM is on target to meet all LRIP Exit Criteria stated in the ADM prior to FRP DR in May 2020.

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

Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate
Milestone B	Jul 2015	Jul 2015	Jul 2015	Jul 2015
CDR	Jan 2016	Jan 2016	Jan 2016	Jan 2016
Milestone C	Mar 2018	Mar 2018	Sep 2018	Jun 2018
Army IOC	Sep 2018	Sep 2018	Mar 2019	Mar 2019
Navy IOC	Sep 2019	Sep 2019	Mar 2020	Mar 2020
FRP Decision	Mar 2020	Mar 2020	Sep 2020	May 2020

Change Explanations

None

Acronyms and Abbreviations

CDR - Critical Design Review
CSDR - Cost and Software Data Reporting

Performance

Performance Characteristics				
SAR Baseline Production Estimate	**Current APB Production Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
System Survivability				
Cyber Survivability				
No higher than Low	No higher than Low	No higher than Moderate	Adversarial Assessment conducted January 26, 2018	No higher than Moderate
E3 and CBRN				
Host A/C compatibility, MIL-STD-464 (HERO, EMC), MIL-STD-461, and MIL-STD 2169 (HEMP)	Host A/C compatibility, MIL-STD-464 (HERO, EMC), MIL-STD-461, and MIL-STD 2169 (HEMP)	(T=O) Host A/C compatibility, MIL-STD-464 (HERO, EMC), MIL-STD-461, and MIL-STD 2169 (HEMP)	E3 completed March 23, 2018; CBRN completed March 2017	Host A/C compatibility, MIL-STD-464 (HERO, EMC), MIL-STD-461, and MIL-STD 2169 (HEMP)
Training				
Support development of all training packages and training devices				
Yes	Yes	(T=O) Yes	NET conducted Feb 11, 2019 - March 20, 2019	Yes
Range				
Minimum Engagement Range Rotary Wing (RW)				
500 m	500 m	(T=O) 500 m	Demonstrated February 1, 2018	500 m
Maximum Range (RW)				
>=16 km	>=16 km	8 km	Demonstrated March 28, 2018	8 km
Minimum Engagement Range (FW)				
2 km (1 nm)	2 km (1 nm)	None	TBD	None
Maximum Range (FW)				
28 km (15 nm)	28 km (15 nm)	None	TBD	None
Interoperability				
Interoperable with joint rotary and fixed wing (manned and unmanned) aircraft				
MQ-1C Gray Eagle, MH-60M DAP, AH-6M, MH-60S, MH-60R, AH-64D, F/A-18 E/F, F-35, F/A-18 A-D, KC-130J Harvest Hawk, AC-130J, AV-8B, V-22, Future UAS, A-10,	MQ-1C Gray Eagle, MH-60M DAP, AH-6M, MH-60S, MH-60R, AH-64D, F/A-18 E/F, F-35, F/A-18 A-D, KC-130J Harvest Hawk, AC-130J, AV-8B, V-22, Future UAS, A-10,	AH-64E, AH-1Z	Federated SW demo: MQ-1C - 25 May 2016 AH-64D - 07 Dec 2016 AH-64E - 24 Jan 2017 AH-1Z - 13 Feb 2018 Integrated SW demo: AH-64E V6 – 23 Jan 2019	AH-64E, AH-1Z

F-16, MQ-9	F-16, MQ-9			
Laser Designation				
Compatible with standard Joint aviation platform laser designation systems, including PRF and PIM codes.	Compatible with standard Joint aviation platform laser designation systems, including PRF and PIM codes.	(T=O) Compatible with standard Joint aviation platform laser designation systems, including PRF and PIM codes.	Completed compatibility testing March 13, 2018	Compatible with standard Joint aviation platform laser designation systems, including PRF and PIM codes.
Carrier/Shipboard Operability				
Compatible with carrier/shipboard operations without degrading other Naval operations				
Yes	Yes	(T=O) Yes	Shipboard Weapons Integration Team Report completed January 10, 2018	Yes

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

Requirements Reference

JAGM CPD for JAGM Increment 1 dated May 10, 2018.

Change Explanations

None

Notes

In the JAGM CPD, dated May 10, 2018, System Survivability and Training KPPs are introduced. Also in the CPD, section 5.2.3 (KPP #5 - Range), it is stated, " There are no fixed wing requirements for JAGM Increment 1 since fixed wing platforms are objective", therefore there are no estimates at this time.

Acronyms and Abbreviations

A/C - Aircraft
CBRN - Chemical, Biological, Radiation, Nuclear
DAP - Direct Air Penetrator
E3 - Electromagnetic Environmental Effects
EMC - Electromagnetic Compatibility
FW - Fixed Wing
HEMP - High-Altitude Electromagnetic Pulse
HERO - High Intensity Radio Frequency (HIRF) Transmission and Hazards of Electromagnetic Radiation to Ordnance
km - kilometer
m - meter
MIL-STD - Military Standard
NET - New Equipment Training
nm - nautical mile
O - Objective
P-BIT - Power-on Built In Test
PIM - Pulse Interval Modulation
PRF - Pulse Repetition Frequency
RW - Rotary Wing
T - Threshold
UAS - Unmanned Aircraft System

Track to Budget

RDT&E

Appn		BA	PE
Navy	1319	05	0605450M

Project	Name
2211	Joint Air-to-Ground Missile

Appn		BA	PE
Navy	1319	05	0605450N

Project	Name
2211	Joint Air-to-Ground Missile (JAGM)

Appn		BA	PE
Army	2040	05	0605450A

Project	Name
JA6	Joint Air-to-Ground Missile (JAGM)

Procurement

Appn		BA	PE
Navy	1507	02	0206138M

Line Item	Name
2248	Joint Air-to-Ground Missile (JAGM)

Appn		BA	PE
Army	2032	02	0311100A

Line Item	Name
C70302	Joint Air-to-Ground Missile (JAGM)

Acq O&M

Appn		BA	PE
Army	2020	04	0702806A

Subactivity Group	Name	
435	Acquisition and Management Support: JAGM	(Shared)

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2018 $M			BY 2018 $M	TY $M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	1074.9	1074.9	1182.4	1095.8	1008.7	1008.7	1026.1
Procurement	5951.5	5951.5	6546.7	5614.4	7640.4	7640.4	7202.9
Flyaway	--	--	--	5477.3	--	--	7033.0
Recurring	--	--	--	5409.2	--	--	6957.7
Non Recurring	--	--	--	68.1	--	--	75.3
Support	--	--	--	137.1	--	--	169.9
Other Support	--	--	--	132.4	--	--	164.8
Initial Spares	--	--	--	4.7	--	--	5.1
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	44.0	44.0	48.4	48.4	52.8	52.8	60.5
Total	7070.4	7070.4	N/A	6758.6	8701.9	8701.9	8289.5

Current APB Cost Estimate Reference

Joint Cost Position for JAGM dated May 15, 2018

Cost Notes

CAPE Cost Risks: No new programmatic risks were identified in the latest POE.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	118	118	118
Procurement	26319	26319	26319
Total	26437	26437	26437

Cost and Funding

Funding Summary

Appropriation Summary FY 2021 President's Budget / December 2019 SAR (TY$ M)									
Appropriation	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
RDT&E	967.8	25.0	21.6	2.6	2.7	3.4	3.0	0.0	1026.1
Procurement	619.5	275.0	262.8	216.0	289.6	286.3	285.4	4968.3	7202.9
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	2.8	2.9	2.9	3.0	3.0	3.1	3.1	39.7	60.5
PB 2021 Total	1590.1	302.9	287.3	221.6	295.3	292.8	291.5	5008.0	8289.5
PB 2020 Total	1581.8	355.7	288.1	277.2	295.9	293.6	277.8	5235.0	8605.1
Delta	8.3	-52.8	-0.8	-55.6	-0.6	-0.8	13.7	-227.0	-315.6

Quantity Summary FY 2021 President's Budget / December 2019 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Development	118	0	0	0	0	0	0	0	0	118
Production	0	2172	800	853	455	892	817	819	19511	26319
PB 2021 Total	118	2172	800	853	455	892	817	819	19511	26437
PB 2020 Total	118	2172	991	783	655	893	852	830	19143	26437
Delta	0	0	-191	70	-200	-1	-35	-11	368	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding 2040 | RDT&E | Research, Development, Test, and Evaluation, Army							
		TY $M					
Fiscal Year	Quantity	End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2008	--	--	--	--	--	--	51.7
2009	--	--	--	--	--	--	114.8
2010	--	--	--	--	--	--	118.5
2011	--	--	--	--	--	--	66.4
2012	--	--	--	--	--	--	86.8
2013	--	--	--	--	--	--	11.6
2014	--	--	--	--	--	--	15.7
2015	--	--	--	--	--	--	80.6
2016	--	--	--	--	--	--	79.9
2017	--	--	--	--	--	--	47.4
2018	--	--	--	--	--	--	28.5
2019	--	--	--	--	--	--	12.4
2020	--	--	--	--	--	--	6.6
2021	--	--	--	--	--	--	8.9
2022	--	--	--	--	--	--	2.2
2023	--	--	--	--	--	--	2.3
2024	--	--	--	--	--	--	3.0
2025	--	--	--	--	--	--	3.0
Subtotal	74	--	--	--	--	--	740.3

Annual Funding 2040 | RDT&E | Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	BY 2018 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2008	--	--	--	--	--	--	59.4
2009	--	--	--	--	--	--	130.2
2010	--	--	--	--	--	--	132.4
2011	--	--	--	--	--	--	72.8
2012	--	--	--	--	--	--	93.6
2013	--	--	--	--	--	--	12.3
2014	--	--	--	--	--	--	16.3
2015	--	--	--	--	--	--	82.5
2016	--	--	--	--	--	--	80.9
2017	--	--	--	--	--	--	47.1
2018	--	--	--	--	--	--	27.8
2019	--	--	--	--	--	--	11.9
2020	--	--	--	--	--	--	6.2
2021	--	--	--	--	--	--	8.2
2022	--	--	--	--	--	--	2.0
2023	--	--	--	--	--	--	2.0
2024	--	--	--	--	--	--	2.6
2025	--	--	--	--	--	--	2.6
Subtotal	74	--	--	--	--	--	790.8

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2008	--	--	--	--	--	--	11.6
2009	--	--	--	--	--	--	52.8
2010	--	--	--	--	--	--	61.1
2011	--	--	--	--	--	--	48.6
2012	--	--	--	--	--	--	2.6
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	4.7
2015	--	--	--	--	--	--	6.1
2016	--	--	--	--	--	--	25.9
2017	--	--	--	--	--	--	17.8
2018	--	--	--	--	--	--	15.5
2019	--	--	--	--	--	--	6.8
2020	--	--	--	--	--	--	18.4
2021	--	--	--	--	--	--	12.7
2022	--	--	--	--	--	--	0.4
2023	--	--	--	--	--	--	0.4
2024	--	--	--	--	--	--	0.4
Subtotal	44	--	--	--	--	--	285.8

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2018 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2008	--	--	--	--	--	--	13.4
2009	--	--	--	--	--	--	60.0
2010	--	--	--	--	--	--	68.4
2011	--	--	--	--	--	--	53.2
2012	--	--	--	--	--	--	2.8
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	4.9
2015	--	--	--	--	--	--	6.3
2016	--	--	--	--	--	--	26.4
2017	--	--	--	--	--	--	17.8
2018	--	--	--	--	--	--	15.2
2019	--	--	--	--	--	--	6.5
2020	--	--	--	--	--	--	17.3
2021	--	--	--	--	--	--	11.7
2022	--	--	--	--	--	--	0.4
2023	--	--	--	--	--	--	0.4
2024	--	--	--	--	--	--	0.3
Subtotal	44	--	--	--	--	--	305.0

Annual Funding 2032 | Procurement | Missile Procurement, Army							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	--	27.7	--	--	27.7	--	27.7
2017	373	98.6	--	--	98.6	--	98.6
2018	899	186.4	--	--	186.4	0.5	186.9
2019	721	233.9	--	20.4	254.3	2.2	256.5
2020	494	175.1	--	20.0	195.1	4.2	199.3
2021	657	202.1	--	7.9	210.0	3.4	213.4
2022	294	138.1	--	22.0	160.1	5.5	165.6
2023	603	194.9	--	--	194.9	18.5	213.4
2024	544	183.8	--	--	183.8	24.8	208.6
2025	548	181.4	--	--	181.4	24.7	206.1
2026	948	238.4	--	1.5	239.9	14.7	254.6
2027	1027	254.9	--	--	254.9	4.0	258.9
2028	1029	259.5	--	--	259.5	4.1	263.6
2029	1089	263.3	--	--	263.3	4.2	267.5
2030	1109	267.8	--	--	267.8	4.3	272.1
2031	1137	270.3	--	1.7	272.0	4.4	276.4
2032	1154	276.7	--	--	276.7	4.5	281.2
2033	1171	281.6	--	--	281.6	4.6	286.2
2034	1185	286.3	--	--	286.3	4.7	291.0
2035	1198	289.5	--	1.8	291.3	4.8	296.1
2036	1213	296.5	--	--	296.5	4.9	301.4
2037	1231	301.7	--	--	301.7	5.0	306.7
2038	1208	307.4	--	--	307.4	4.8	312.2
2039	471	145.5	--	--	145.5	3.8	149.3
2040	--	11.8	--	--	11.8	--	11.8
Subtotal	20303	5373.2	--	75.3	5448.5	156.6	5605.1

Annual Funding 2032 | Procurement | Missile Procurement, Army							
Fiscal Year	Quantity	BY 2018 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	--	27.8	--	--	27.8	--	27.8
2017	373	96.9	--	--	96.9	--	96.9
2018	899	179.7	--	--	179.7	0.5	180.2
2019	721	221.1	--	19.3	240.4	2.1	242.5
2020	494	162.3	--	18.5	180.8	3.9	184.7
2021	657	182.9	--	7.1	190.0	3.1	193.1
2022	294	122.5	--	19.5	142.0	4.9	146.9
2023	603	169.5	--	--	169.5	16.1	185.6
2024	544	156.7	--	--	156.7	21.2	177.9
2025	548	151.7	--	--	151.7	20.6	172.3
2026	948	195.4	--	1.2	196.6	12.1	208.7
2027	1027	204.8	--	--	204.8	3.3	208.1
2028	1029	204.5	--	--	204.5	3.2	207.7
2029	1089	203.4	--	--	203.4	3.2	206.6
2030	1109	202.8	--	--	202.8	3.3	206.1
2031	1137	200.7	--	1.3	202.0	3.2	205.2
2032	1154	201.4	--	--	201.4	3.3	204.7
2033	1171	200.9	--	--	200.9	3.3	204.2
2034	1185	200.3	--	--	200.3	3.3	203.6
2035	1198	198.6	--	1.2	199.8	3.3	203.1
2036	1213	199.4	--	--	199.4	3.3	202.7
2037	1231	198.9	--	--	198.9	3.3	202.2
2038	1208	198.7	--	--	198.7	3.1	201.8
2039	471	92.2	--	--	92.2	2.4	94.6
2040	--	7.3	--	--	7.3	--	7.3
Subtotal	20303	4180.4	--	68.1	4248.5	126.0	4374.5

Cost Quantity Information 2032 | Procurement | Missile Procurement, Army		
Fiscal Year	**Quantity**	**End Item Recurring Flyaway (Aligned With Quantity) BY 2018 $M**
2016	--	--
2017	373	124.7
2018	899	179.7
2019	721	221.1
2020	494	162.3
2021	657	182.9
2022	294	122.5
2023	603	169.5
2024	544	156.7
2025	548	151.7
2026	948	195.4
2027	1027	204.8
2028	1029	204.5
2029	1089	203.4
2030	1109	202.8
2031	1137	200.7
2032	1154	201.4
2033	1171	200.9
2034	1185	200.3
2035	1198	198.6
2036	1213	199.4
2037	1231	198.9
2038	1208	198.7
2039	471	99.5
2040	--	--
Subtotal	20303	4180.4

Annual Funding 1507 | Procurement | Weapons Procurement, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2017	104	21.9	--	--	21.9	--	21.9
2018	--	3.8	--	--	3.8	--	3.8
2019	75	23.7	--	--	23.7	0.4	24.1
2020	306	74.8	--	--	74.8	0.9	75.7
2021	196	49.0	--	--	49.0	0.4	49.4
2022	161	50.4	--	--	50.4	--	50.4
2023	289	76.2	--	--	76.2	--	76.2
2024	273	75.9	--	--	75.9	1.8	77.7
2025	271	76.6	--	--	76.6	2.7	79.3
2026	319	78.6	--	--	78.6	2.4	81.0
2027	316	79.5	--	--	79.5	3.1	82.6
2028	325	82.6	--	--	82.6	1.6	84.2
2029	342	85.9	--	--	85.9	--	85.9
2030	347	87.6	--	--	87.6	--	87.6
2031	355	89.4	--	--	89.4	--	89.4
2032	359	91.2	--	--	91.2	--	91.2
2033	363	93.0	--	--	93.0	--	93.0
2034	366	94.9	--	--	94.9	--	94.9
2035	369	96.8	--	--	96.8	--	96.8
2036	372	98.7	--	--	98.7	--	98.7
2037	372	100.5	--	--	100.5	--	100.5
2038	136	41.7	--	--	41.7	--	41.7
2039	--	5.9	--	--	5.9	--	5.9
2040	--	5.9	--	--	5.9	--	5.9
Subtotal	6016	1584.5	--	--	1584.5	13.3	1597.8

Annual Funding 1507 | Procurement | Weapons Procurement, Navy							
Fiscal Year	Quantity	BY 2018 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2017	104	21.6	--	--	21.6	--	21.6
2018	--	3.7	--	--	3.7	--	3.7
2019	75	22.4	--	--	22.4	0.4	22.8
2020	306	69.2	--	--	69.2	0.9	70.1
2021	196	44.5	--	--	44.5	0.3	44.8
2022	161	44.8	--	--	44.8	--	44.8
2023	289	66.5	--	--	66.5	--	66.5
2024	273	64.9	--	--	64.9	1.5	66.4
2025	271	64.2	--	--	64.2	2.3	66.5
2026	319	64.6	--	--	64.6	2.0	66.6
2027	316	64.1	--	--	64.1	2.4	66.5
2028	325	65.2	--	--	65.2	1.3	66.5
2029	342	66.5	--	--	66.5	--	66.5
2030	347	66.5	--	--	66.5	--	66.5
2031	355	66.5	--	--	66.5	--	66.5
2032	359	66.6	--	--	66.6	--	66.6
2033	363	66.5	--	--	66.5	--	66.5
2034	366	66.6	--	--	66.6	--	66.6
2035	369	66.6	--	--	66.6	--	66.6
2036	372	66.5	--	--	66.5	--	66.5
2037	372	66.4	--	--	66.4	--	66.4
2038	136	27.0	--	--	27.0	--	27.0
2039	--	3.7	--	--	3.7	--	3.7
2040	--	3.7	--	--	3.7	--	3.7
Subtotal	6016	1228.8	--	--	1228.8	11.1	1239.9

FY 2020 is OCO funding.

Cost Quantity Information 1507 | Procurement | Weapons Procurement, Navy		
Fiscal Year	**Quantity**	**End Item Recurring Flyaway (Aligned With Quantity) BY 2018 $M**
2017	104	21.6
2018	--	--
2019	75	26.1
2020	306	69.2
2021	196	44.5
2022	161	44.8
2023	289	66.5
2024	273	64.9
2025	271	64.2
2026	319	64.6
2027	316	64.1
2028	325	65.2
2029	342	66.5
2030	347	66.5
2031	355	66.5
2032	359	66.6
2033	363	66.5
2034	366	66.6
2035	369	66.6
2036	372	66.5
2037	372	66.4
2038	136	34.4
2039	--	--
2040	--	--
Subtotal	6016	1228.8

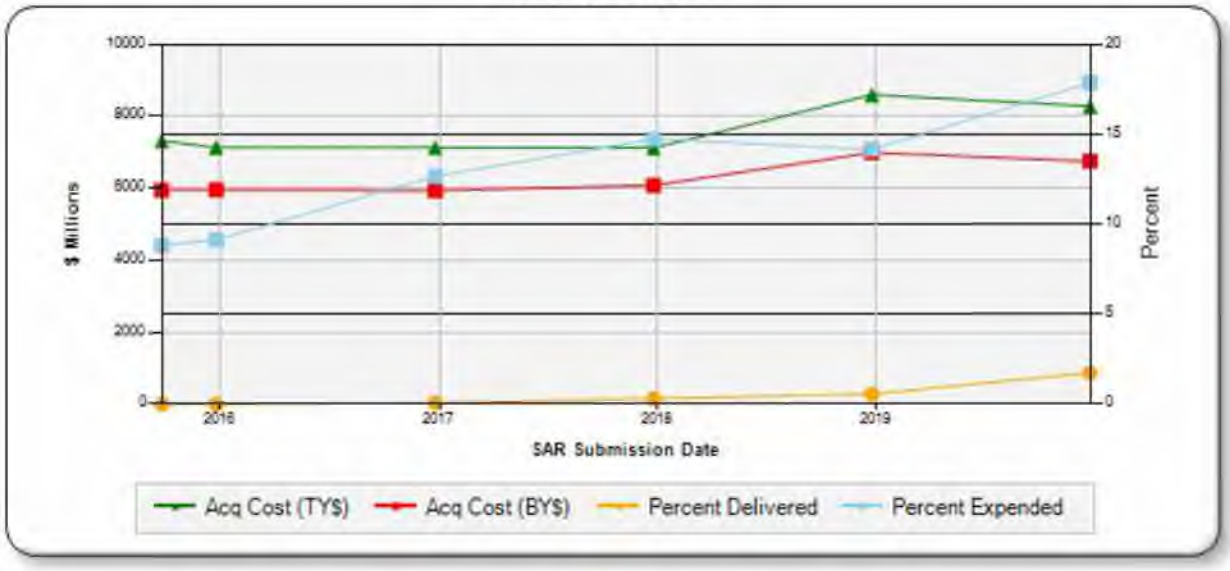
Annual Funding 2020 | Acq O&M | Operation and Maintenance, Army	
Fiscal Year	TY $M Total Program
2019	2.8
2020	2.9
2021	2.9
2022	3.0
2023	3.0
2024	3.1
2025	3.1
2026	3.0
2027	3.1
2028	2.9
2029	3.0
2030	2.8
2031	2.9
2032	2.7
2033	2.8
2034	2.8
2035	2.9
2036	2.7
2037	2.7
2038	2.8
2039	2.6
Subtotal	60.5

Annual Funding 2020 | Acq O&M | Operation and Maintenance, Army	
Fiscal Year	BY 2018 $M
	Total Program
2019	2.7
2020	2.7
2021	2.7
2022	2.7
2023	2.7
2024	2.7
2025	2.7
2026	2.5
2027	2.6
2028	2.3
2029	2.4
2030	2.2
2031	2.2
2032	2.0
2033	2.0
2034	2.0
2035	2.0
2036	1.9
2037	1.8
2038	1.9
2039	1.7
Subtotal	48.4

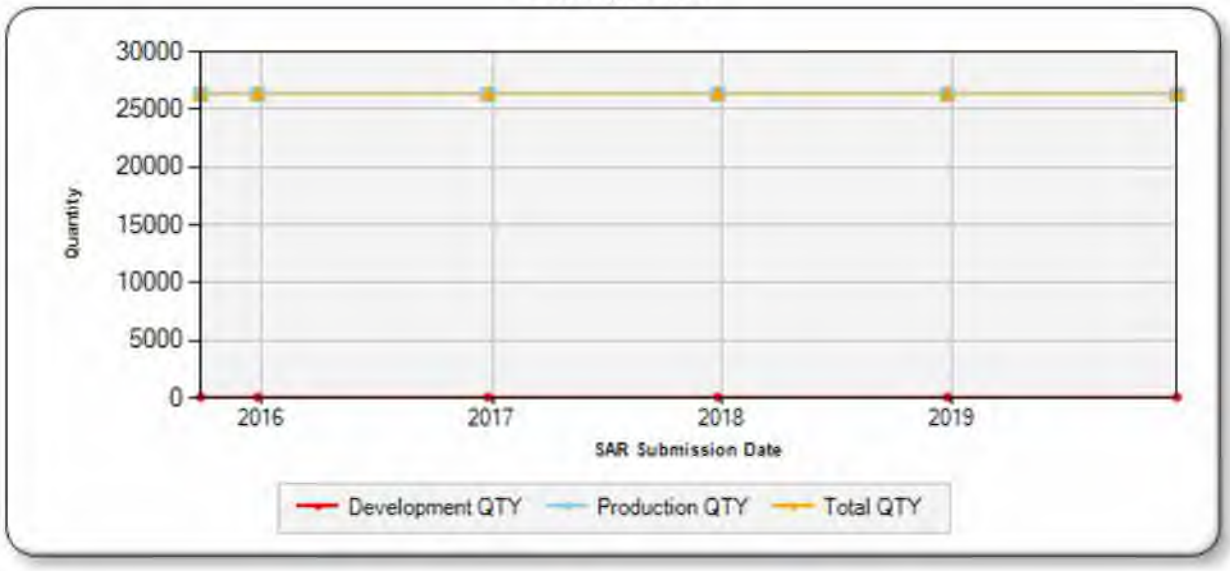
Charts

JAGM first began SAR reporting in September 2015

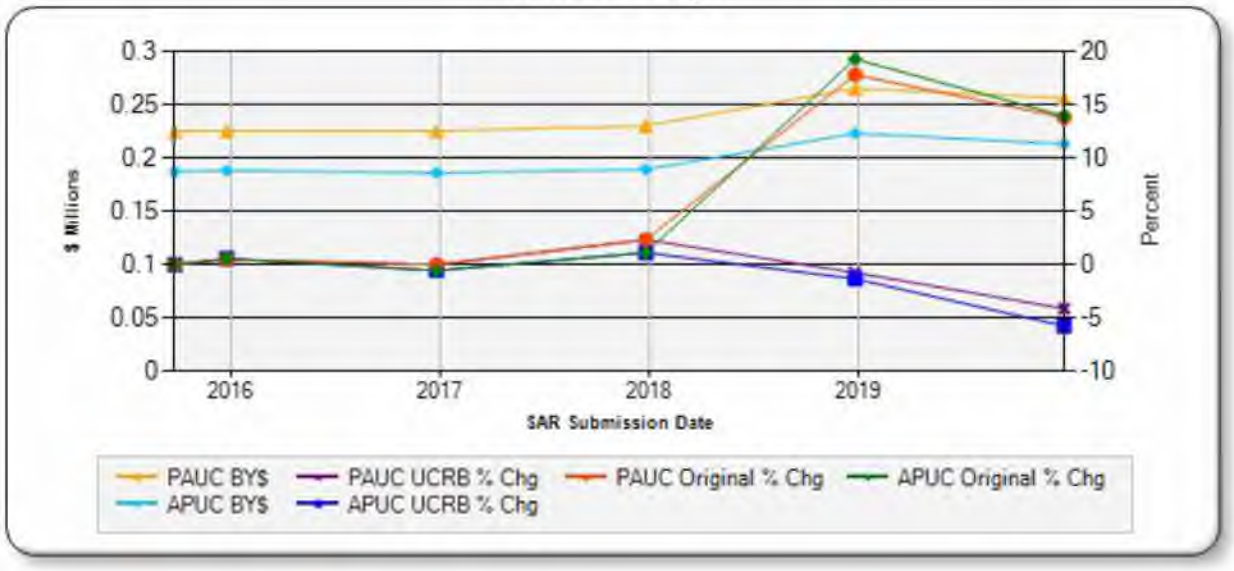
Program Acquisition Cost - JAGM
Base Year 2018 $M



Quantity - JAGM



Unit Cost - JAGM
Base Year 2018 $M



Risks

Significant Schedule and Technical Risks

Significant Schedule and Technical Risks	
Milestone B (July 2015)	
1.	Cost/Schedule: Guidance Section (GS) Qualification Design Maturity – the contractor's design may require additional GS qualification in EMD. This risk was assessed as Low. Driver: Contractor GS design maturity Mitigation Activities: Request for proposals to require evidence of design maturity, stability, and specification compliance: (1) Test results, technical drawings, and specification data (2) GS software and firmware and Integrated Flight Simulation, evidence of established manufacturing processes to support an assessed Manufacturing Readiness Level (MRL) 7 or higher.
2.	Schedule: Platform Qualification - JAGM hardware deliveries and test schedule may not align with launch platform availability. This risk was assessed as Low. Driver: Competing JAGM/platform test schedules Mitigation Activities: Develop synergy between test activities to maximize test asset availability, coordinate with platform project office to synchronize JAGM and platform schedules, conduct regular communication with stakeholders regarding integration and test activities.
3.	Schedule: Producibility/Yield – JAGM prime contractor and suppliers may not meet quality and production rate requirements. This risk was assessed as Low. Driver: Contractor production and quality process maturity. Mitigation Activities: Conduct MRL 7 assessment during source selection, require Government MRL assessments of prime contractor and key suppliers early in EMD and prior to LRIP demonstrating MRL 8 before Milestone C, require flow down of quality requirements to suppliers, require robust parts management planning and selection.
4.	Cost/Schedule: In-Flight Reliability requirement may not be demonstrated during baseline EMD flight tests (48 firings). This risk was assessed as Moderate. Driver: Flight tests may experience more failures than expected (two failures). Mitigation Activities: Perform rigorous failure investigation, corrective action and configuration management to ensure production representative All-Up-Rounds are used for Reliability, Availability and Maintainability scoring, conduct additional flight tests (Follow-On Test & Evaluation and Quality Verification Testing) after Milestone C to demonstrate statistical confidence in reliability, convene Configuration Steering Board to pursue an affordable and achievable requirement based on existing reliability data for the fielded HELLFIRE missile, coordinate with Training and Doctrine Command to develop CPD KPP Threshold value for In-Flight Reliability.
Milestone C (June 2018)	
1.	Production Ramp Rates – the Prime Contractor may not be able to produce JAGMs at required rate if unable to increase production yield and mature the production line by the end of LRIP. This risk was assessed as moderate. Mitigation Activities: Government and Prime Contractor initiate Yield Improvement Team (YIT) to identify ramp rate challenges and implement appropriate corrective actions.
2.	Threshold Platform Integration – the threshold platforms will not have full JAGM capability if threshold platform software modifications for full JAGM integration are not completed on schedule. This risk was assessed as moderate. Mitigation Activities: Crew Station working group will address potential challenges and drive to resolution in sufficient time to support Initial Operational Test & Evaluation (IOT&E). Apache Pilot-Vehicle Interface (PVI) discussions, held on a biweekly basis in the Platform Integration IPT, ensure PVI agrees with missile and user requirements. Avionics Integration Lab (AIL) testing will be performed on a continual basis as software is developed to verify interface.
3.	Schedule to demonstrate suitability and effectiveness - JAGM may not satisfy warfighter requirements within the required timeframe if JAGM experiences delays of environmental Production Qualification Test (PQT) or IOT&E. This risk was assessed as moderate. Mitigation Activities: Failure review board processes during

	PQT will inform required hardware and software updates.
Current Estimate (December 2019)	
1.	JAGM holds weekly Product IPT meetings to identify problem areas, obtain status of on-going efforts, and to develop solutions. Also, JAGM is conducting periodic Product Support Reviews (PSRs) to focus on improving producibility at each of the three (3) Prime Contractor manufacturing sites. JAGM is also verifying supplier rate capabilities through Manufacturing Readiness Level (MRL) assessments.
2.	Necessary improvements captured from crew station working group and Biweekly Apache PVI have been verified through successful AIL testing. JAGM is currently conducting integration testing to ensure the successful integration of threshold platform software and the JAGM system. Formal verification of the integration will be done with IOT&E. On January 24-29, 2019, the JAGM Product Office, with support from Yuma Proving Ground, Redstone Test Center (RTC), US Army Combat Capabilities Development Command Aviation & Missile Center (CCDC Aviation & Missile Center), the Apache Project Office, Boeing, and Lockheed Martin, conducted six JAGM launches from the fully integrated Apache. These tests utilized the AH-64E version 6 with the JAGM Pilot-Vehicle Interface that provides optimized cockpit selections.
3.	Corrective Actions identified during PQT are being verified by a Delta PQT, which is ongoing.

Risks

Risk and Sensitivity Analysis

Risks and Sensitivity Analysis	
Current Baseline Estimate (June 2018)	
1.	Milestone C was approved by the AAE on June 15, 2018. The SAR Baseline is being updated from a Development Estimate to a Production Estimate and the base year of the program was revised from FY 2015 to FY 2018.
Original Baseline Estimate (September 2015)	
1.	The July 29, 2015 JAGM Milestone B ADM directs the Army and Navy to fund the program to the level of the OSD CAPE ICE. This estimate, like all previous OSD CAPE estimates, was built upon a product-oriented work breakdown structure, is based on historical cost information to the maximum extent possible, and most importantly based on conservative assumptions that are consistent with actual demonstrated contractor and Government performance for a series of acquisition programs in which the Department was successful.
Revised Original Estimate (N/A)	
1.	None
Current Procurement Cost (December 2019)	
1.	Confidence Level of cost estimate for current APB is 50 percent. In the Joint Cost Position, dated May 15, 2018, the following risks were identified: the cost risk associated with this program is moderate to high due to lack of JAGM/HELLFIRE data to develop learning and rate curves (LC and RC) and procurement schedule uncertainty. The potential impact on program cost is that the APUC is highly sensitive to fluctuations in the LC and RC. This variation in the curves will stabilize as the missile matures and production quantities increase. Approaches to mitigate these risks that are being implemented include: significant 1921, 1921-1, and 1921-2 data collection for both the JAGM and HELLFIRE programs, and the development of an Affordability IPT to work on implementing tasks that would drive affordability in a positive trend for JAGM.

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	7/29/2015	6/15/2018
Approved Quantity	2631	2631
Reference	JAGM Milestone B ADM	JAGM Milestone C ADM
Start Year	2017	2017
End Year	2018	2019

Notes

The JAGM Milestone C ADM approved the execution of the LRIP quantity of 2,631 missiles established at Milestone B.

Foreign Military Sales

None

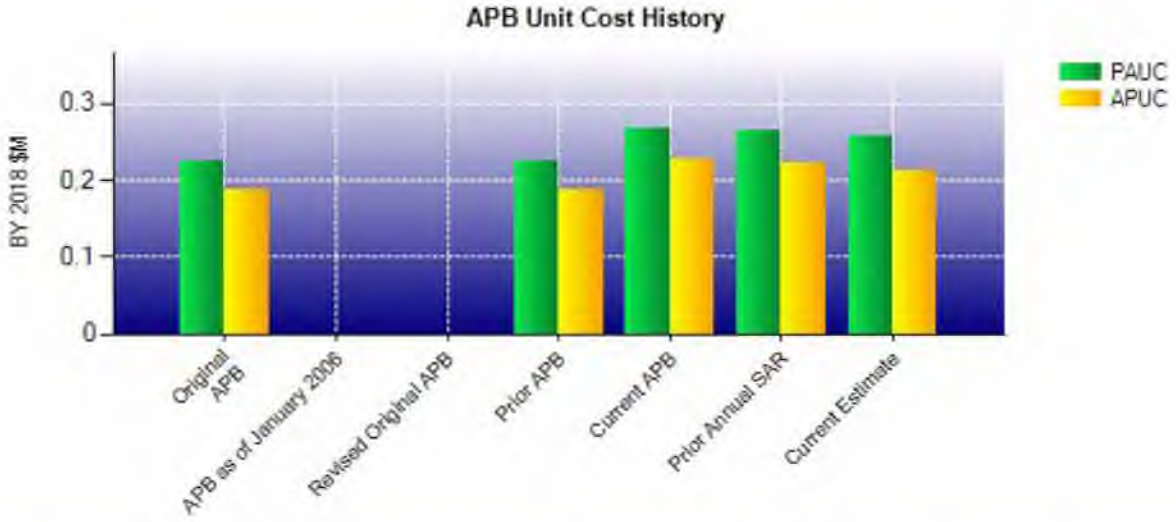
Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2018 $M Current UCR Baseline (Jun 2018 APB)	BY 2018 $M Current Estimate (Dec 2019 SAR)	% Change
Program Acquisition Unit Cost			
Cost	7070.4	6758.6	
Quantity	26437	26437	
Unit Cost	0.267	0.256	-4.12
Average Procurement Unit Cost			
Cost	5951.5	5614.4	
Quantity	26319	26319	
Unit Cost	0.226	0.213	-5.75

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2018 $M Original UCR Baseline (Sep 2015 APB)	BY 2018 $M Current Estimate (Dec 2019 SAR)	% Change
Program Acquisition Unit Cost			
Cost	5946.2	6758.6	
Quantity	26437	26437	
Unit Cost	0.225	0.256	+13.78
Average Procurement Unit Cost			
Cost	4920.0	5614.4	
Quantity	26319	26319	
Unit Cost	0.187	0.213	+13.90



APB Unit Cost History					
Item	Date	BY 2018 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Sep 2015	0.225	0.187	0.277	0.242
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Aug 2017	0.225	0.187	0.277	0.242
Current APB	Jun 2018	0.267	0.226	0.329	0.290
Prior Annual SAR	Dec 2018	0.265	0.223	0.325	0.286
Current Estimate	Dec 2019	0.256	0.213	0.314	0.274

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY $M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.277	-0.002	0.000	0.000	0.015	0.030	0.000	0.009	0.052	0.329

Current SAR Baseline to Current Estimate (TY $M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.329	0.002	0.000	-0.001	0.000	-0.011	0.000	-0.005	-0.015	0.314

Initial SAR Baseline to Current SAR Baseline (TY $M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.242	-0.002	0.000	0.000	0.015	0.026	0.000	0.009	0.048	0.290

Current SAR Baseline to Current Estimate (TY $M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.290	0.002	0.000	-0.002	0.000	-0.012	0.000	-0.005	-0.017	0.274

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	Jul 2015	Jul 2015	Jul 2015
Milestone C	N/A	Jul 2017	Mar 2018	Jun 2018
IOC	N/A	Sep 2018	Sep 2018	Mar 2019
Total Cost (TY $M)	N/A	7324.5	8701.9	8289.5
Total Quantity	N/A	26437	26437	26437
PAUC	N/A	0.277	0.329	0.314

Cost Variance

Summary TY $M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Production Estimate)	1008.7	7640.4	--	52.8	8701.9
Previous Changes					
Economic	-4.4	+29.8	--	+0.1	+25.5
Quantity	--	--	--	--	--
Schedule	--	-23.3	--	--	-23.3
Engineering	--	--	--	--	--
Estimating	+20.5	-11.8	--	-0.1	+8.6
Other	--	--	--	--	--
Support	--	-107.6	--	--	-107.6
Subtotal	+16.1	-112.9	--	--	-96.8
Current Changes					
Economic	-0.2	+17.4	--	-0.1	+17.1
Quantity	--	--	--	--	--
Schedule	--	-16.2	--	--	-16.2
Engineering	--	--	--	--	--
Estimating	+1.5	-300.0	--	+7.8	-290.7
Other	--	--	--	--	--
Support	--	-25.8	--	--	-25.8
Subtotal	+1.3	-324.6	--	+7.7	-315.6
Total Changes	+17.4	-437.5	--	+7.7	-412.4
Current Estimate	1026.1	7202.9	--	60.5	8289.5

Summary BY 2018 $M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Production Estimate)	1074.9	5951.5	--	44.0	7070.4
Previous Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	--	--	--	--	--
Estimating	+19.7	-8.5	--	-0.1	+11.1
Other	--	--	--	--	--
Support	--	-85.3	--	--	-85.3
Subtotal	+19.7	-93.8	--	-0.1	-74.2
Current Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	--	--	--	--	--
Estimating	+1.2	-220.3	--	+4.5	-214.6
Other	--	--	--	--	--
Support	--	-23.0	--	--	-23.0
Subtotal	+1.2	-243.3	--	+4.5	-237.6
Total Changes	+20.9	-337.1	--	+4.4	-311.8
Current Estimate	1095.8	5614.4	--	48.4	6758.6

Previous Estimate: December 2018

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.2
Revised estimate due to funding profile update from FY 2020 to FY 2021 President's Budget (Army). (Estimating)	+0.5	+0.7
Revised estimate due to funding profile update from FY 2020 to FY 2021 President's Budget (Navy). (Estimating)	+0.5	+0.6
Adjustment for current and prior escalation. (Estimating)	+0.2	+0.2
RDT&E Subtotal	+1.2	+1.3

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+17.4
Acceleration of procurement buy profile in years FY 2026 - FY 2039 (Army). (Schedule)	0.0	-20.4
Stretch-out of procurement buy profile in FY 2020 - FY 2024 to reflect FY 2020 Appropriation (Navy). (Schedule)	0.0	+4.2
Revised estimate to reflect updated hardware actuals from final EMD cost reporting (Army). (Estimating)	-192.3	-255.9
Revised estimate to reflect updated hardware actuals from final EMD cost reporting (Navy). (Estimating)	-39.5	-58.0
Revised estimate due to internal program funding realignment from Support to Flyaway (Navy). (Estimating)	+11.1	+13.5
Adjustment for current and prior escalation. (Estimating)	+0.4	+0.4
Decrease in Other Support due to change in training device procurement years. Captive Air Training Missile (CATM) procurement changed from FY 2022 to FY 2023 resulting in reduced Guidance Section costs for CATMs based on learning curve projections (Army). (Support)	-11.6	-12.3
Decrease in Other Support due to internal program funding realignment from Support to Flyaway (Navy). (Support)	-11.4	-13.5
Procurement Subtotal	-243.3	-324.6

Acq O&M	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.1
Revised estimate due to programmatic changes to core personnel. (Estimating)	+4.5	+7.8
Acq O&M Subtotal	+4.5	+7.7

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: EMD and LRIP and Deployment
Contractor: Lockheed Martin Corporation
Contractor Location: 5600 W Sand Lake Rd MP-265
Orlando, FL 32819
Contract Number: W31P4Q-15-C-0102
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: July 31, 2015
Definitization Date: July 31, 2015

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
195.2	201.3	1155	424.0	471.3	2366	471.3	471.3

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to incorporation of JAGM LRIP 2B Option into the contract.

Option added for LRIP 3b and added Rate Ramp (Production Facilitization).

Cost and Schedule Variance Explanations

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

General Contract Variance Explanation

Cost Variance and Schedule Variance reporting are not required on this FPIF contract due to an EVM waiver granted by the DAE on October 17, 2014, in the JAGM Development Request for Proposals Release Decision ADM.

Notes

Rate Ramp is FFP with no target price. Numbers include obsolete parts (in ceiling).

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	118	118	118	100.00%
Production	344	344	26319	1.31%
Total Program Quantity Delivered	462	462	26437	1.75%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	8289.5	Years Appropriated	13
Expended to Date	1481.3	Percent Years Appropriated	39.39%
Percent Expended	17.87%	Appropriated to Date	1893.0
Total Funding Years	33	Percent Appropriated	22.84%

The above data is current as of February 10, 2020.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	January 10, 2019
Source of Estimate:	POE
Quantity to Sustain:	26319
Unit of Measure:	Missile
Service Life per Unit:	25.00 Years
Fiscal Years in Service:	FY 2019 - FY 2065

The 118 development missiles will not be sustained.

Sustainment Strategy

The JAGM sustainment strategy utilizes a two-level maintenance concept (field and sustainment) for the Army. The JAGM strategy utilizes a three-level maintenance concept (organizational, intermediate, and depot) for the Navy. No disassembly of the All-Up-Round (AUR) will occur at the organizational or intermediate levels. The majority of logistics elements are common across the services. The missile is a certified round of ammunition with no maintenance at the field level other than cleaning, normal surveillance, and Built-In Test (BIT). In March 2019, JAGM reached Initial Operational Capability. Interim Contractor Support (ICS) is ongoing via a Lockheed Martin Corporation (LMC) Engineering Services Contract with a period of performance of March 2019 to March 2022. The product office is currently conducting a Business Case Analysis (BCA) to identify the most cost effective permanent support structure within the constraints of Title 10 USC Section 2464. The JAGM BCA, using the JAGM Depot Maintenance Study, will identify, analyze, and compare product support strategies with projected completion in June 2020.

Antecedent Information

No Antecedent

Annual O&S Costs BY2018 $K		
Cost Element	**JAGM Average Annual Cost Per Missile**	**No Antecedent (Antecedent) N/A**
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	0.195	--
Sustaining Support	0.381	--
Continuing System Improvements	0.048	--
Indirect Support	--	--
Other	--	--
Total	0.624	--

Item	Total O&S Cost $M			
	JAGM			No Antecedent (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	400.9	441.0	411.0	N/A
Then Year	702.1	N/A	713.0	N/A

Disposal Cost is included in the Operating and Support Cost of the current APB objective and threshold for this program.

Total Missile O&S = $624 (Average Annual O&S Cost per Missile) x 25 (Years of Service Life) x 26,319 (Total Missile Quantity) = $411.0M

O&S Cost Variance		
Category	**BY 2018 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2018 SAR	383.2	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	27.8	Update to methodology assumptions based upon new inputs from log director. The following cost elements have been updated: missile depot repairs costs, Receipt/Issue costs, Second Destination Transportation costs, and Core personnel headcounts.
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	27.8	
Current Estimate	411.0	

Disposal Estimate Details

Date of Estimate: May 15, 2018

Source of Estimate: SCP

Disposal/Demilitarization Total Cost (BY 2018 $M): 3.2