



## Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-555



### Joint Air-to-Surface Standoff Missile (JASSM)

As of FY 2019 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

~~This document contains information that may be exempt from mandatory disclosure under the FOIA.~~

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## Sensitivity Originator

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## Common Acronyms and Abbreviations for MDAP Programs

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

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

## Program Information

**Program Name**

Joint Air-to-Surface Standoff Missile (JASSM)

**DoD Component**

Air Force

**Joint Participants**

Department of the Navy

## Responsible Office

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**Date Assigned:** July 21, 2014

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## References

### **SAR Baseline (Production Estimate)**

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated April 4, 2011

### **Approved APB**

Air Force Acquisition Executive (AFAE) Approved Acquisition Program Baseline (APB) dated November 15, 2017



## Mission and Description

### Introduction:

The Joint Air-to-Surface Standoff Missile (JASSM) Extended Range (ER) is a next generation cruise missile enabling the U.S. Air Force to destroy the enemy's war-sustaining capabilities from outside its area air defenses. It is precise, lethal, survivable, flexible, and adverse-weather capable. JASSM-ER's inherent accuracy (three meters (m) or less using the Imaging Infrared (IIR) seeker and less than 13 m with Global Positioning System (GPS)/Inertial Navigation System (INS) only) reduces the number of weapons and sorties required to destroy a target.

### Mission:

JASSM-ER provides both fighter and bomber aircraft the capability to strike critical, high value, heavily defended targets early in a campaign.

### Vision:

To provide the warfighter with an autonomous, precision standoff strike weapon product line at an affordable cost and on schedule.

### Description:

JASSM-ER is a low observable, highly survivable, subsonic cruise missile which carries a 1000-pound class, hardened, penetrating warhead with a robust blast fragmentation capability. The missiles employ an IIR seeker system to attack fixed, point targets requiring precision targeting. They use GPS/INS for mid-course navigation and as a back up for terminal guidance. A launch can occur over a wide range of altitudes and at ranges greater than 500 nautical miles. JASSM-ER (LRIP Lots 1 and 2) has a 15-year warranty. LRIP Lot 3 and beyond will be under Contractor Logistics Support.

### CONOPS:

JASSM-ER employment will occur primarily in the early stages of conflict before air superiority is established, and in the later stages of conflict against high value targets remaining heavily defended. JASSM-ER can also be employed in those cases where, due to rules of engagement/political constraints, high value, point targets must be attacked from international airspace. JASSM-ER may be employed independently or the missile may be used as part of a composite package.



## Executive Summary

The APB was updated in CY 2017 and approved on November 15, 2017 by the MDA. The update adjusted the RDT&E cost for the following items: M-Code, Capability Enhancement and Aerodynamically Efficient Wings Integration. Also, the JASSM's Acquisition Strategy was amended and approved on September 8, 2017 to enable the JASSM program to introduce upgrades to ensure its viability as the threat environment evolves.

Execution of Wing Replacement/China development/integration and Warfighter Capability Enhancement was accelerated to support warfighter need for rapid fielding.

The JASSM-Extended Range (ER) Lot 15 contract was awarded on June 1, 2017 for 360 missiles. This contract marks the first JASSM-ER-only Lot and represents the largest missile quantity in program history. Long Range Anti-Ship Missile (LRASM) Lot 1A contract was awarded on July 25, 2017 for 23 missiles (eight U.S. Navy and 15 U.S. Air Force); LRASM Lot 1B was awarded on October 31, 2017 for seven missiles (two U.S. Navy and five U.S. Air Force). This represents the first production lot for LRASM, while leveraging the supply chain and infrastructure of the JASSM-ER Lot 15 contract.

The JASSM Program Office (JPO) performed two Product Verification Tests (PVT). On January 17, 2017, a Lot 6 baseline missile test (PVT-18) was successfully employed. On March 27, 2017, an ER Lot 4 missile was successfully employed for PVT-19. The mission was to provide additional characterization of the missile flight envelope using the enhanced mission planning software. PVT-19 was also the first release of an ER missile from an F-15E.

Air Force Global Strike Command declared IOC for B-52 JASSM/JASSM-ER interim capability for internal weapons bay and JASSM-ER interim capability on external wing stations on October 2, 2017.

A Failure Review Board (FRB) for the October 21, 2016 Weapon System Evaluation Program (WSEP) JASSM-ER employment mission was closed on March 9, 2017; the missile failed to reach the intended target. The most likely cause was determined to be an inlet blockage preventing sufficient air flow rate through the engine. Corrective actions have been implemented.

The Poland live fire test FRB was closed on August 1, 2017. There were two unrelated failures: 1) loss of telemetry (TM), Beacon and Flight Termination System (FTS) at missile release; and 2) the missile did not reach the target. The first failure was not attributed to JASSM; acting on JPO recommendation, the F-16 System Program Office will modify its Operational Flight Program so the FTS and TM are not commanded off prior to missile separation during a launch sequence. To mitigate the navigation issue, the Global Positioning System (GPS) receiver supplier implemented new prescreening procedures.

Live sky Y-code GPS testing was completed on 90 JASSM/JASSM-ER missiles at four continental U.S. bases. This testing was to more accurately assess the risk of a GPS receiver chip failure identified as the cause of a 2014 WSEP missile failure and investigated in an FRB completed in February 2016. This GPS Y-Code testing resulted in two (of 90) missiles exhibiting the same issue. An FRB has been initiated and the JPO is planning for live sky testing on 100% of the suspect missiles (1,105 total from Lots 6-12). The defect rate yields a potential of up to 70 missiles in the field with this failure mode. Testing will start at the base level in January 2018. A prescreening process was implemented mid-Lot 12 to prevent recurrence.

The JASSM program continues to be challenged with Test Instrumentation Kit batteries used for flight test missiles only. Since the legacy battery ceased production, the JASSM program has been trying to qualify a replacement battery. Alternate power sources are also being sought. Flight tests will continue to be at risk until a replacement battery or alternate power source can be qualified. In addition, the thyristor switch is a critical obsolescence risk for Electronic Safe/Arm Fuze (ESAF) and Intelligent TM Instrumentation Kits (iTIK) programs. Allocation of remaining thyristor switches continues to be on hold depending on the outcome of the Office of the Under Secretary of Defense task force determination of priority, which is expected in March 2018. The ESAF redesign is underway. An iTIK redesign may be required to resolve this Diminishing

#### Manufacturing Sources issue.

There are currently 1,613 JASSM-Baseline (BL) and 301 JASSM-ER missiles available for operational use. Total quantity will be 4,900 missiles; approximately 2,034 BL and 2,866 ER missiles. Current JASSM material availability (Am): 90.0%; Current JASSM-ER Am: 100%

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 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 type="checkbox"/>
	APUC	<input type="checkbox"/>

### Nunn-McCurdy Breaches

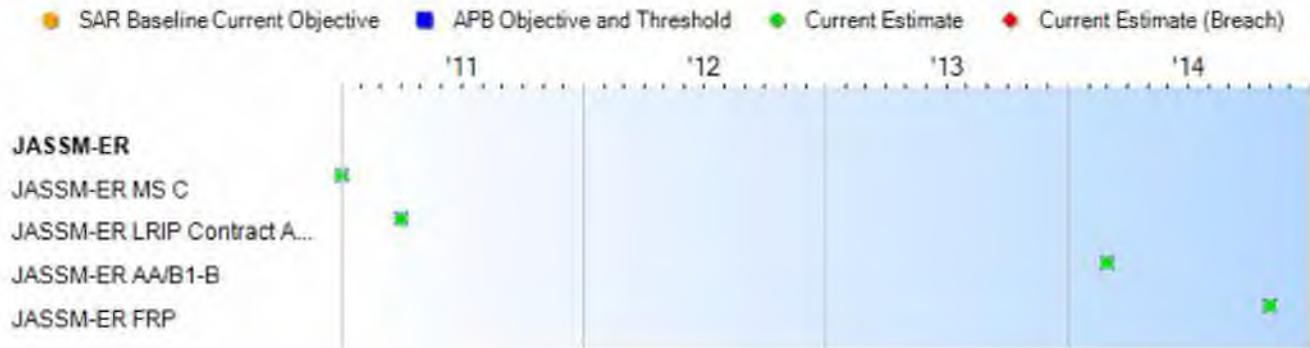
#### Current UCR Baseline

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
JASSM-ER MS C	Jan 2007	Jan 2011	Jan 2011	Jan 2011
JASSM-ER LRIP Contract Award	Jan 2011	Apr 2011	Apr 2011	Apr 2011
JASSM-ER AA/B1-B	Dec 2008	Mar 2014	Mar 2014	Mar 2014
JASSM-ER FRP	Dec 2013	Nov 2014	Nov 2014	Nov 2014

### Change Explanations

None

### Acronyms and Abbreviations

AA - Assets Available

MS - Milestone



## Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Materiel Availability (KPP) (CPD Para 6.1.5)				
.98	.98	.95	1.0	.97
Net-Ready (KPP) (CPD para 6.1.3)				
All Ops	All Operations	Joint Critical Operations	All Ops	All Ops
Missile Reliability (KSA) (CPD para 6.2.8)				
4th Lot .91	4th Lot .91	IOT&E .80 4th Lot .85	IOT&E .95	4th Lot .91

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

### Requirements Reference

CPD dated April 16, 2010, JASSM-ER Annex to the JASSM ORD and ORD III dated January 31, 2005, and the ORD 303-95-III dated January 20, 2004

### Change Explanations

None

### Acronyms and Abbreviations

IOT&E - Initial Operational Test and Evaluation  
 KSA - Key System Attributes  
 Ops - Operations  
 para - paragraph

## Track to Budget

### RDT&E

Appn	BA	PE		
Air Force	3600	07	0207325F	
		Project	Name	
		674515	Joint Air-to-Surface Standoff Missile	(Shared) (Sunk)
		675356	JASSM Extended Range (JASSM-ER)	

### Procurement

Appn	BA	PE		
Air Force	3020	02	0207325F	
		Line Item	Name	
		654515	Joint Air-to-Surface Standoff Missile	(Shared) (Sunk)
Air Force	3020	04	0207325F	
		Line Item	Name	
		999	Replen Spares / Repair Parts	(Shared)
Air Force	3020	02	0207325F	
		Line Item	Name	
		JASSM0	Joint Air-to-Surface Standoff Missile	

## Cost and Funding

### Cost Summary

Total Acquisition Cost						
Appropriation	BY 2010 \$M			BY 2010 \$M	TY \$M	
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective
RDT&E	159.1	519.5	571.5	467.1	146.6	576.9
Procurement	2035.9	3297.1	3626.8	3459.3	2154.8	4059.6
Flyaway	--	--	--	2875.5	--	--
Recurring	--	--	--	2875.5	--	--
Non Recurring	--	--	--	0.0	--	--
Support	--	--	--	583.8	--	--
Other Support	--	--	--	581.3	--	--
Initial Spares	--	--	--	2.5	--	--
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	2195.0	3816.6	N/A	3926.4	2301.4	4636.5

#### Current APB Cost Estimate Reference

SCP dated October 10, 2014

#### Cost Notes

In accordance with Section 842 of the National Defense Authorization Act for FY 2017, which amended title 10 U.S.C. § 2334, the Director of Cost Assessment and Program Evaluation, and the Secretary of the military department concerned or the head of the Defense Agency concerned, must issue guidance requiring a discussion of risk, the potential impacts of risk on program costs, and approaches to mitigate risk in cost estimates for MDAPs and major subprograms. The information required by the guidance is to be reported in each SAR. This guidance is not yet available; therefore, the information on cost risk is not contained in this SAR.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	7	31	31
Procurement	2500	2866	2866
Total	2507	2897	2897



## Cost and Funding

### Funding Summary

Appropriation Summary									
FY 2019 President's Budget / December 2017 SAR (TY\$ M)									
Appropriation	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
RDT&E	241.5	29.9	60.1	79.2	36.2	19.9	20.2	19.7	506.7
Procurement	1264.7	441.6	492.7	458.9	396.9	438.7	450.8	219.8	4164.1
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
PB 2019 Total	1506.2	471.5	552.8	538.1	433.1	458.6	471.0	239.5	4670.8
PB 2018 Total	1513.1	471.7	477.7	557.9	549.4	491.0	282.6	246.6	4590.0
Delta	-6.9	-0.2	75.1	-19.8	-116.3	-32.4	188.4	-7.1	80.8

Quantity Summary										
FY 2019 President's Budget / December 2017 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Development	31	0	0	0	0	0	0	0	0	31
Production	0	900	360	360	360	289	327	270	0	2866
PB 2019 Total	31	900	360	360	360	289	327	270	0	2897
PB 2018 Total	31	900	360	334	360	380	360	172	0	2897
Delta	0	0	0	26	0	-91	-33	98	0	0

## Cost and Funding

### Annual Funding By Appropriation

Annual Funding								
3600   RDT&E   Research, Development, Test, and Evaluation, Air Force								
Fiscal Year	Quantity	TY \$M						Total Program
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support		
2003	--	--	--	--	--	--	--	13.6
2004	--	--	--	--	--	--	--	15.7
2005	--	--	--	--	--	--	--	31.8
2006	--	--	--	--	--	--	--	35.2
2007	--	--	--	--	--	--	--	22.5
2008	--	--	--	--	--	--	--	8.3
2009	--	--	--	--	--	--	--	20.6
2010	--	--	--	--	--	--	--	26.5
2011	--	--	--	--	--	--	--	19.3
2012	--	--	--	--	--	--	--	5.6
2013	--	--	--	--	--	--	--	2.9
2014	--	--	--	--	--	--	--	2.2
2015	--	--	--	--	--	--	--	5.0
2016	--	--	--	--	--	--	--	9.2
2017	--	--	--	--	--	--	--	23.1
2018	--	--	--	--	--	--	--	29.9
2019	--	--	--	--	--	--	--	60.1
2020	--	--	--	--	--	--	--	79.2
2021	--	--	--	--	--	--	--	36.2
2022	--	--	--	--	--	--	--	19.9
2023	--	--	--	--	--	--	--	20.2
2024	--	--	--	--	--	--	--	7.6
2025	--	--	--	--	--	--	--	6.1
2026	--	--	--	--	--	--	--	6.0
Subtotal	31	--	--	--	--	--	--	506.7

Annual Funding								
3600   RDT&E   Research, Development, Test, and Evaluation, Air Force								
Fiscal Year	Quantity	BY 2010 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2003	--	--	--	--	--	--	--	15.6
2004	--	--	--	--	--	--	--	17.6
2005	--	--	--	--	--	--	--	34.8
2006	--	--	--	--	--	--	--	37.4
2007	--	--	--	--	--	--	--	23.3
2008	--	--	--	--	--	--	--	8.4
2009	--	--	--	--	--	--	--	20.6
2010	--	--	--	--	--	--	--	26.2
2011	--	--	--	--	--	--	--	18.7
2012	--	--	--	--	--	--	--	5.3
2013	--	--	--	--	--	--	--	2.7
2014	--	--	--	--	--	--	--	2.0
2015	--	--	--	--	--	--	--	4.6
2016	--	--	--	--	--	--	--	8.3
2017	--	--	--	--	--	--	--	20.5
2018	--	--	--	--	--	--	--	26.1
2019	--	--	--	--	--	--	--	51.5
2020	--	--	--	--	--	--	--	66.6
2021	--	--	--	--	--	--	--	29.8
2022	--	--	--	--	--	--	--	16.1
2023	--	--	--	--	--	--	--	16.0
2024	--	--	--	--	--	--	--	5.9
2025	--	--	--	--	--	--	--	4.6
2026	--	--	--	--	--	--	--	4.5
Subtotal	31	--	--	--	--	--	--	467.1



Annual Funding							
3020   Procurement   Missile Procurement, Air Force							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2010	30	52.4	--	--	52.4	4.3	56.7
2011	--	--	--	--	--	1.8	1.8
2012	30	52.3	--	--	52.3	4.6	56.9
2013	40	62.1	--	--	62.1	6.6	68.7
2014	60	89.8	--	--	89.8	4.3	94.1
2015	140	175.5	--	--	175.5	37.3	212.8
2016	240	281.5	--	--	281.5	60.2	341.7
2017	360	412.6	--	--	412.6	19.4	432.0
2018	360	406.3	--	--	406.3	35.3	441.6
2019	360	402.1	--	--	402.1	90.6	492.7
2020	360	409.2	--	--	409.2	49.7	458.9
2021	289	348.6	--	--	348.6	48.3	396.9
2022	327	389.0	--	--	389.0	49.7	438.7
2023	270	341.0	--	--	341.0	109.8	450.8
2024	--	--	--	--	--	17.2	17.2
2025	--	--	--	--	--	17.6	17.6
2026	--	--	--	--	--	18.1	18.1
2027	--	--	--	--	--	18.6	18.6
2028	--	--	--	--	--	19.1	19.1
2029	--	--	--	--	--	19.7	19.7
2030	--	--	--	--	--	20.2	20.2
2031	--	--	--	--	--	20.8	20.8
2032	--	--	--	--	--	21.3	21.3
2033	--	--	--	--	--	21.9	21.9
2034	--	--	--	--	--	22.5	22.5
2035	--	--	--	--	--	2.8	2.8
Subtotal	2866	3422.4	--	--	3422.4	741.7	4164.1

Annual Funding							
3020   Procurement   Missile Procurement, Air Force							
Fiscal Year	Quantity	BY 2010 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2010	30	51.3	--	--	51.3	4.2	55.5
2011	--	--	--	--	--	1.7	1.7
2012	30	49.4	--	--	49.4	4.3	53.7
2013	40	57.3	--	--	57.3	6.1	63.4
2014	60	81.8	--	--	81.8	3.9	85.7
2015	140	158.1	--	--	158.1	33.5	191.6
2016	240	249.4	--	--	249.4	53.3	302.7
2017	360	358.3	--	--	358.3	16.9	375.2
2018	360	346.6	--	--	346.6	30.1	376.7
2019	360	336.5	--	--	336.5	75.9	412.4
2020	360	335.8	--	--	335.8	40.8	376.6
2021	289	280.5	--	--	280.5	38.8	319.3
2022	327	306.8	--	--	306.8	39.2	346.0
2023	270	263.7	--	--	263.7	84.9	348.6
2024	--	--	--	--	--	13.0	13.0
2025	--	--	--	--	--	13.1	13.1
2026	--	--	--	--	--	13.2	13.2
2027	--	--	--	--	--	13.3	13.3
2028	--	--	--	--	--	13.4	13.4
2029	--	--	--	--	--	13.5	13.5
2030	--	--	--	--	--	13.6	13.6
2031	--	--	--	--	--	13.7	13.7
2032	--	--	--	--	--	13.8	13.8
2033	--	--	--	--	--	13.9	13.9
2034	--	--	--	--	--	14.0	14.0
2035	--	--	--	--	--	1.7	1.7
Subtotal	2866	2875.5	--	--	2875.5	583.8	3459.3

## Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	1/10/2011	1/10/2011
Approved Quantity	100	160
Reference	Milestone C ADM	Milestone C ADM
Start Year	2011	2011
End Year	2013	2014

The January 10, 2011 ADM approved LRIP range of 100 to 190 JASSM-ER missiles. Current JASSM-ER's LRIP buy is 160 missiles, within the approved LRIP range, due to production capacity.

~~(U//FOUO)~~ Foreign Military Sales~~(U//FOUO)~~ Notes

FMS of JASSM-ER to Poland was approved and the Letter of Offer and Acceptance was signed on December 29, 2016 to (b)(4) for integration on the Polish F-16. The Phase 1 contract award will include integration, System Support Simulator upgrade, Missile Operational Flight Program, Unique Planning Component, and management support. Phase 2 contract will be awarded with JASSM Lots 16 and 17 projected for March 2018 and 2019. The CY 2018 Contract will include one Live Fire (LF) test asset, three Separation Test Vehicles (STV), and the 2019 contract will include (b)(4) (b)(4) STV/LF testing is planned to be accomplished in CY 2019.

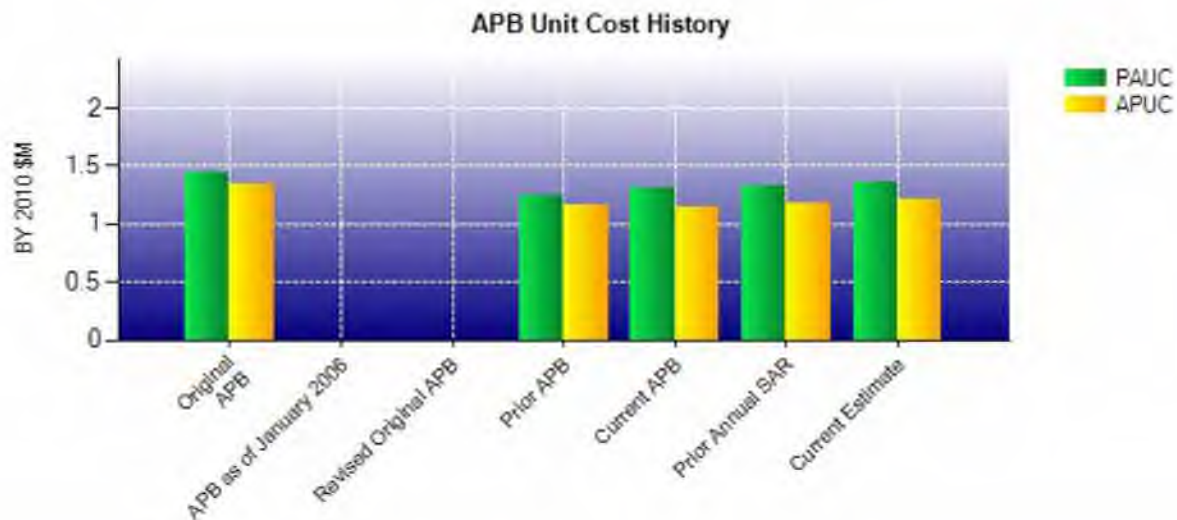
## Nuclear Costs

None



## Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2010 \$M	BY 2010 \$M	% Change
	Current UCR Baseline (Nov 2017 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	3816.6	3926.4	
Quantity	2897	2897	
Unit Cost	1.317	1.355	+2.89
Average Procurement Unit Cost			
Cost	3297.1	3459.3	
Quantity	2866	2866	
Unit Cost	1.150	1.207	+4.96
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2010 \$M	BY 2010 \$M	% Change
	Original UCR Baseline (Apr 2011 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	3631.6	3926.4	
Quantity	2531	2897	
Unit Cost	1.435	1.355	-5.57
Average Procurement Unit Cost			
Cost	3366.1	3459.3	
Quantity	2500	2866	
Unit Cost	1.346	1.207	-10.33



APB Unit Cost History					
Item	Date	BY 2010 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Apr 2011	1.435	1.346	1.733	1.648
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	Mar 2015	1.249	1.159	1.517	1.426
Current APB	Nov 2017	1.317	1.150	1.600	1.416
Prior Annual SAR	Dec 2016	1.325	1.178	1.584	1.427
Current Estimate	Dec 2017	1.355	1.207	1.612	1.453

### SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.918	0.026	0.023	-0.065	0.189	0.289	0.000	0.232	0.694	1.612

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.862	0.027	0.014	-0.056	0.102	0.269	0.000	0.235	0.591	1.453

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	N/A	N/A	N/A
Milestone C	N/A	N/A	Jan 2007	Jan 2011
IOC	N/A	N/A	Dec 2008	Mar 2014
Total Cost (TY \$M)	N/A	N/A	2301.4	4670.8
Total Quantity	N/A	N/A	2507	2897
PAUC	N/A	N/A	0.918	1.612

In the chart above, IOC represents Required Assets Available (RAA) for B-1B Dyess Air Force Base. RAA achieved was on March 21, 2014.



**Cost Variance**

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	146.6	2154.8	--	2301.4
Previous Changes				
Economic	+2.5	+105.4	--	+107.9
Quantity	+64.9	+356.8	--	+421.7
Schedule	-25.8	-164.4	--	-190.2
Engineering	+240.6	+292.5	--	+533.1
Estimating	+70.6	+794.4	--	+865.0
Other	--	--	--	--
Support	--	+551.1	--	+551.1
Subtotal	+352.8	+1935.8	--	+2288.6
Current Changes				
Economic	-2.2	-29.1	--	-31.3
Quantity	--	--	--	--
Schedule	--	+2.8	--	+2.8
Engineering	+14.1	--	--	+14.1
Estimating	-4.6	-22.1	--	-26.7
Other	--	--	--	--
Support	--	+121.9	--	+121.9
Subtotal	+7.3	+73.5	--	+80.8
Total Changes	+360.1	+2009.3	--	+2369.4
Current Estimate	506.7	4164.1	--	4670.8

Summary BY 2010 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	159.1	2035.9	--	2195.0
Previous Changes				
Economic	--	--	--	--
Quantity	+50.4	+272.0	--	+322.4
Schedule	-7.2	-6.7	--	-13.9
Engineering	+201.2	+200.3	--	+401.5
Estimating	+56.7	+454.2	--	+510.9
Other	--	--	--	--
Support	--	+421.7	--	+421.7
Subtotal	+301.1	+1341.5	--	+1642.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	+11.2	--	--	+11.2
Estimating	-4.3	-17.5	--	-21.8
Other	--	--	--	--
Support	--	+99.4	--	+99.4
Subtotal	+6.9	+81.9	--	+88.8
Total Changes	+308.0	+1423.4	--	+1731.4
Current Estimate	467.1	3459.3	--	3926.4

Previous Estimate: December 2016

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-2.2
Additional funding received to support capability enhancements in FY 2023. (Engineering)	+11.2	+14.1
Revised estimate due to Congressional mark in FY 2017 (Estimating)	-6.1	-6.9
Revised estimate due to changes in out year phasing. (Estimating)	+0.1	+0.1
Adjustment for current and prior escalation. (Estimating)	+0.2	+0.2
Revised estimate due to application of new out year inflation indices. (Estimating)	+1.5	+2.0
RDT&E Subtotal	+6.9	+7.3

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-29.1
Adjustment for current and prior escalation. (Estimating)	+6.3	+7.1
Revised estimate to reflect actuals. (Estimating)	-37.6	-46.3
Stretch-out of procurement buy profile from FY 2019 to FY 2023. (Schedule)	0.0	+2.8
Revised estimate due to application of new out year inflation indices. (Estimating)	+13.8	+17.1
Adjustment for current and prior escalation. (Support)	+0.5	+0.6
Increase in Other Support for reliability enhancement caused a realignment of other government costs as a result of the addition of FY 2019 and FY 2023 funding not previously included in the December 2016 SAR. (Support)	+99.0	+121.4
Decrease in Initial Spares due to application of new out year inflation indices. (Support)	-0.1	-0.1
Procurement Subtotal	+81.9	+73.5



## Contracts

### Contract Identification

**Appropriation:** Procurement  
**Contract Name:** JASSM Production (Lot 13)  
**Contractor:** Lockheed Martin Corporation  
**Contractor Location:** 5600 W. Sand Lake Road  
Orlando, FL 32819-8907  
**Contract Number:** FA8682-16-C-0005/13  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF)  
**Award Date:** October 09, 2015  
**Definitization Date:** October 09, 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
263.3	N/A	240	268.0	306.1	240	306.1	306.1

### Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the following contract modifications which were awarded after the initial contract awarded in October 2015.

Mod P00011: Troy Tooling Refurbishment (\$263.4K)  
Mod P00012: Test Instrumentation (TIK) install for B-52 Integration (\$696.9K)  
Mod P00020: JASSM Baseline Containers for DATM (\$579.0K)  
Mod P00021: Robotics Validation effort (\$300.6K)  
Mod P00023: Focal Plane Array (FPA) FPGA, Microcontroller and Flash Memory Obsolescence Life of Type Buy (LTB). (\$378.5K)  
Mod P00025: JASSM-ER Bulkhead and Lube Pump Value Engineering Change Proposal Non-Recurring Engineering Recoupment and Savings (\$552.9K)  
Mod P00026: 3CE Re-Design & Fabrication of the JASSM FPA Test Stations (\$612.1K)  
Mod P00027: JASSM JAGR-S Flash Memory & AIS IMU & Seeker Gyro PZI Crystal Obsolescence LTB (\$1.28M)  
Mod P00028: Troy Tooling Refurbishment Phase 2 (\$228.6K)  
Mod P00032: De-scope and de-obligate CLINs 9116 and 9117, extend the Period of Performance for CLIN 5005,(\$-8.9K)

### Cost and Schedule Variance Explanations

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

### Notes

The funding identified here only represents production funding placed on contract to support 240 missiles (100 BL and 140 ER). A waiver for cost data reporting is in process with the MDA.



**Contract Identification**

**Appropriation:** Procurement  
**Contract Name:** JASSM Production (Lot 14)  
**Contractor:** Lockheed Martin Corporation Fire and Missile Control  
**Contractor Location:** 5600 West Sand Lake Road  
 Orlando, FL 32819  
**Contract Number:** FA8682-16-C-0005/14  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF)  
**Award Date:** December 01, 2015  
**Definitization Date:** December 01, 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
371.0	N/A	340	393.0	436.2	340	436.2	436.2

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the following contract modifications since the initial contract awarded in December 2015:

Mod P00004: Excellis tooling (\$14.4M)  
 Mod P00025: JASSM-ER Bulkhead and Lube Pump Value Engineering Change Proposal (VECP) NRE (\$1.6M)  
 Mod P00018: VECP Honeywell (\$1.4M)  
 Mod P00014: Critical Tooling and Test Stations (\$1.4M)

**Cost and Schedule Variance Explanations**

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

**Notes**

The Lot 14 option was executed December 1, 2015. Under Continuing Resolution Authority (CRA) the program was not allowed to buy more quantities than the previous Lot/year. The initial contract price (\$247.8M) was based on 240 missiles (100 BL and 140 ER), in the First Phase of a two Phase contract award. Once CRA was completed and full FY 2016 funding was received, Phase 2 was executed to buy the remaining 100 JASSM-ER missiles. The total contract price for Lot 14 is 340 missiles at \$371.0M and considered the initial/original contract price. A waiver for cost data reporting is in process with the MDA.

**Contract Identification**

**Appropriation:** Procurement  
**Contract Name:** JASSM Production (Lot 15)  
**Contractor:** Lockheed Martin Corporation  
**Contractor Location:** 5600 W. Sand Lake Road  
Orlando, FL 32819-8907  
**Contract Number:** FA8682-17-C-0037  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF)  
**Award Date:** June 01, 2017  
**Definitization Date:** June 01, 2017

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
411.4	N/A	360	411.4	411.4	360	411.4	411.4

**Cost and Schedule Variance Explanations**

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

**Notes**

Contract awarded June 1, 2017. Initial Target Price of \$413.9M misreported in previous SAR (\$413.9M is price with tooling, \$411.4M is price without tooling). The funding identified here represents production placed on contract to support 360 JASSM-ER missiles. A waiver for cost data reporting is in process with the MDA.

## Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	31	31	31	100.00%
Production	324	325	2866	11.34%
Total Program Quantity Delivered	355	356	2897	12.29%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	4670.8	Years Appropriated	16
Expended to Date	898.2	Percent Years Appropriated	48.48%
Percent Expended	19.23%	Appropriated to Date	1977.7
Total Funding Years	33	Percent Appropriated	42.34%

The above data is current as of February 12, 2018.

Production deliveries (DD Form 250) to-date for Lot 9/ER LRIP 1 through Lot 12/ER LRIP 4 total 160 JASSM-ER missiles. 139 (of 140) missiles have been delivered for Lot 13 and 26 (of 240) missiles have been delivered for Lot 14.



## Operating and Support Cost

### Cost Estimate Details

Date of Estimate:	August 28, 2017
Source of Estimate:	POE
Quantity to Sustain:	2866
Unit of Measure:	Total Quantity
Service Life per Unit:	15.00 Years
Fiscal Years in Service:	FY 2013 - FY 2040

RDT&E quantity (31) is not counted towards JASSM sustainment efforts.

### Sustainment Strategy

The sustainment and readiness plan/estimate for JASSM has evolved to a combination of 15-year Warranty and Contractor Logistics Support (CLS). Lots 1-10 will continue to be supported under a Warranty construct, while Lots 11-14 will be aligned under a CLS logistics strategy.

JASSM Baseline and JASSM-ER are wooden rounds, meaning there is no routine maintenance required. Also, because production quantities have varied from lot-to-lot and assets continue to be expended during testing, an average unit cost is not a good indicator of operating and sustainment.

### Antecedent Information

No Antecedent

Annual O&S Costs BY2010 \$M		
Cost Element	JASSM-ER Average Annual Cost Per Total Quantity	No Antecedent (Antecedent) No Antecedent
Unit-Level Manpower	2.765	0.000
Unit Operations	0.000	0.000
Maintenance	1.932	0.000
Sustaining Support	6.466	0.000
Continuing System Improvements	9.680	0.000
Indirect Support	1.754	0.000
Other	0.000	0.000
Total	22.597	--

Item	Total O&S Cost \$M			
	JASSM-ER			No Antecedent (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	622.5	684.8	632.7	N/A
Then Year	908.6	N/A	975.1	N/A

#### Equation to Translate Annual Cost to Total Cost

Total O&S Cost = total years in service \* average annual cost = 28 \* \$22.597M = \$632.716M

O&S Cost Variance		
Category	BY 2010 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2016 SAR	646.8	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	-7.0	Risk no longer applied to O&S cost
Cost Data Update	-7.1	Update estimate with actuals
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	-14.1	
Current Estimate	632.7	

#### Disposal Estimate Details

Date of Estimate: August 28, 2017  
Source of Estimate: POE  
Disposal/Demilitarization Total Cost (BY 2010 \$M): Total costs for disposal of all Total Quantity are 76.5

Demil profile has been updated to reflect the latest production quantity profile.