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## Selected Acquisition Report (SAR)

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



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

As of FY 2020 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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## Sensitivity Originator

No originator info Available at this time.

## 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-Surface Standoff Missile (JASSM)

**DoD Component**

Air Force

**Joint Participants**

Department of the Navy

## Responsible Office

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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. There are three variants that make up the JASSM family of missiles; AGM-158A Baseline (BL), AGM-158B Extended Range (ER), and AGM-158D (currently in development). 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 family of missiles Lot 1-11 is covered under warranty and Lot 12 and beyond will be under Contractor Logistic 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

### Program Highlights Since Last Report

The first operational expenditure of JASSM occurred on April 14, 2018. All of the 19 missiles launched successfully and engaged their intended target.

### Production

JASSM production is currently 3 months ahead of schedule. There are currently 1,740 JASSM-BL and 409 JASSM-ER missiles available for operational use. Current JASSM material availability (Am): 93.9% and JASSM-ER Am: 98.1%. The JASSM performance specification Am requirement is still below the threshold (95%), primarily caused by defective coating and Global Positioning System (GPS) signal in space (Y-Code) failures. Corrective actions are in place and material availability is projected to be above 95% in April 2019.

The Lot 13 production lot was completed in June 2018, producing 100 baseline and 140 extended range missiles. Lot 14 production is underway with 88 of 100 baseline and 132 of 240 extended range missiles complete. Lot 15 production is scheduled to begin 4th quarter FY 2019. The JASSM-ER Lot 16 contract was awarded on October 5, 2018 for 360 missiles, 3 FMS Separation Test Vehicles (STV) and 1 FMS Flight Test Vehicle – Live Fire (FTV-LF). This contract marks the second consecutive JASSM-ER-only Lot. Long Range Anti-Ship Missile (LRASM) Lot 2 was awarded on November 15, 2018.

The 2018 National Defense Strategy increased the JASSM Inventory Objective (IO) requirement from 4,900 missiles to 7,200 missiles. This increase has caused an APB total cost breach. Funding has been allocated and plans are in work to build a new production facility that doubles production capacity in Troy, Alabama. The plan is to break ground on the new facility in 3rd quarter FY 2019. In addition, the increase beyond 4,900 missiles will result in an obsolescence issue. The JASSM Program Office is working with Lockheed Martin and their suppliers to identify and mitigate the problem to meet the 7,200 missile requirement.

### Test

A GPS Y-Code Field Test Failure Review Board (FRB) began on December 18, 2017, due to the failure of two JASSMs during Live Sky testing. Initial investigation identified that the problem was contained within the Joint Air to Surface Standoff Missile, Anti-Jamming, Global Positioning System, Selective Availability-Anti-Spoofing Module (JAGR-S) receiver. A combined JASSM Program Office and Lockheed Martin team completed Live Sky testing across multiple Continental United States (CONUS)/Outside the Continental United States (OCONUS) locations, inspected 879 fielded missiles and identified 9 failures that would have prevented mission success if employed. The 9 failures were condition coded F and are in the process of being returned to the Lockheed Martin Troy, Alabama facility for repair.

The program successfully completed a Slow Cook-Off (SCO) test with a JASSM-ER on January 25, 2018 to verify if venting performance was comparable to JASSM-BL. The data was officially scored a success by the Insensitive Munitions Technical Working Group and concurred by the Non-Nuclear Munitions Safety Board (NNMSB).

The JASSM Flight Termination System (FTS) battery availability continues to challenge the JASSM flight test program. Fortunately, a successful qualification of Nickel-Cadmium (NiCad) batteries will allow JASSM flight testing in CY 2019. These NiCad batteries were qualified in the legacy (limited supply) Test Instrumentation Kit (TIK), which includes the FTS. The redesigned Intelligent Test Instrumentation Kit (iTik) still requires batteries to operate the redesigned FTS. Deliveries of the iTik begin in February 2019. The program office continues to work qualification of National Aeronautics and Space Administration (NASA) grade NiCad and Lithium-ion (Li-Ion) batteries for the iTik with anticipated first use during CY 2019.

Two Finland Live Fire shots were conducted on March 5, 2018 and March 9, 2018 at China Lake, California. Test results were evaluated prior to missiles being shipped to the country. The first shipment of missiles arrived December 11, 2018. Poland was approved for JASSM-ERs and their test assets were included in Lot 16 and 40 JASSM-ERs will be included in Lot 17 procurement.

The F-16 integration of JASSM-ER, a follow on to an existing JASSM capability, is part of the F-16 software upgrade to M7.2+. After successful ground and captive carriage testing with the weapon, the first missile release mission was conducted September 16, 2018 at Eglin Air Force Base, Florida. This mission was successful and a Operational Test (OT) launch 2nd quarter FY 2019 will complete the integration.

The program successfully completed the JASSM-ER Development Test (DT) flight test December 7, 2018 on B-52 at White Sands Missile Range (WSMR), New Mexico. This was a culmination of a 2-year integration effort for all B-52 weapon stations; completion of this flight test was a key enabler for realizing the B-52's max JASSM and JASSM-ER loadout of 20x weapons per aircraft (internal Conventional Rotary Launcher and external wing pylons) without envelope restrictions. The test also demonstrated the first-ever JASSM-ER high altitude employment with over-speed protection (inverted flight), first flight of the Honeywell HG-1700 Inertial Measurement Unit (IMU), and enhanced mission planning flight functionality.

### **Development**

JASSM's Acquisition Strategy was amended to enable the JASSM program to introduce upgrades to ensure its viability as the threat environment evolves. The upgrade resulted in a nomenclature change (AGM-158D) to differentiate the enhanced capabilities of the upgraded system versus the legacy JASSM-ER (AGM-158B). The Development Integrated Product Team (IPT) accomplished new wing full scale wind tunnel test in October 2018. Wind tunnel results closely matched predictions and JASSM range will be significantly increased. Wing Engineering and Manufacturing Development (EMD) contract awarded 31 January 2019. ESAF (Electronic Safe and Arm Fuze) development was delayed due to an obsolete thyristor part that OSD's Priority Allocation of Industrial Resources (PAIR) diverted away from JASSM. A redesign with the new part is complete but canon test data recorder failures is hindering analysis. Military (M) Code schedule slipped 11 months, due to software delays from the Military GPS Users Equipment (MGUE) program. In response, the JASSM Program Office was forced to implement an obsolescence fix and began a risk reduction effort to develop a Selective Availability-Anti-Spoofing Module (SAASM) based receiver that shares 80% commonality with the JASSM M-Code receiver. This approach allows continuation of the JASSM M-Code receiver development, while the MGUE software schedule progresses and also allows JASSM to continue fielding missiles.

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   |
| April 2018   | The first operational expenditure of JASSM-BL occurred on April 14, 2018. All of the 19 missiles launched successfully and engaged their intended target. |

### Threshold Breaches

#### APB Breaches

- Schedule
- Performance
- Cost
  - RDT&E
  - Procurement
  - MILCON
  - Acq O&M
- O&S Cost
- Unit Cost
  - PAUC
  - APUC

#### Explanation of Breach

The procurement breach was caused by a quantity increase of 2300 missiles from 4900 to 7200. An updated APB is in process.

#### 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             |
| <b>Material Availability (KPP) (CPD Para 6.1.5)</b> |  |                           |                              |                              |
| .98   | .98  | .95                       | 1.0                          | .97                          |
| <b>Missile Reliability (KSA) (CPD para 6.2.8)</b>   |  |                           |                              |                              |
| 4th Lot .91   | 4th Lot .91                                | IOT&E .80 4th Lot .85     | JASSM: 90.1% JASSM-ER: 91.4% | JASSM: 91.6% JASSM-ER: 92.5% |
| <b>Net-Ready (KPP) (CPD para 6.1.3)</b>             |  |                           |                              |                              |
| All Ops   | All Operations                             | Joint Critical Operations | All Ops                      | All Ops                      |

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<br>Production<br>Estimate | Current APB<br>Production<br>Objective/Threshold |        | Current<br>Estimate | SAR Baseline<br>Production<br>Estimate | Current APB<br>Production<br>Objective | Current<br>Estimate |
| RDT&E                  | 159.1                                  | 519.5  | 571.5  | 543.3               | 146.6                                  | 576.9                                  | 614.6               |
| Procurement            | 2035.9                                 | 3297.1   | 3626.8 | 7761.5 <sup>1</sup> | 2154.8                                 | 4059.6                                 | 9354.2              |
| Flyaway                | --                                     | --   | --     | 7015.6              | --                                     | --                                     | 8398.2              |
| Recurring              | --                                     | --   | --     | 7015.6              | --                                     | --                                     | 8398.2              |
| Non Recurring          | --                                     | --   | --     | 0.0                 | --                                     | --                                     | 0.0                 |
| Support                | --                                     | --   | --     | 745.9               | --                                     | --                                     | 956.0               |
| Other Support          | --                                     | --   | --     | 743.7               | --                                     | --                                     | 953.2               |
| Initial Spares         | --                                     | --   | --     | 2.2                 | --                                     | --                                     | 2.8                 |
| MILCON                 | 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                 |
| Total                  | 2195.0                                 | 3816.6   | N/A    | 8304.8              | 2301.4                                 | 4636.5                                 | 9968.8              |

<sup>1</sup> APB Breach

#### Current APB Cost Estimate Reference

SCP dated October 10, 2014

#### Cost Notes

No cost estimate for the program has been completed in the previous year.

| Total Quantity |  |                           |                  |
|----------------|--|---------------------------|------------------|
| Quantity       | SAR Baseline<br>Production<br>Estimate | Current APB<br>Production | Current Estimate |
| RDT&E          | 7                                      | 31                        | 31               |
| Procurement    | 2500                                   | 2866                      | 7200             |
| Total          | 2507                                   | 2897                      | 7231             |



## Cost and Funding

### Funding Summary

| Appropriation Summary                                   |        |         |         |         |         |         |         |             |        |
|---|--------|---------|---------|---------|---------|---------|---------|-------------|--------|
| FY 2020 President's Budget / December 2018 SAR (TY\$ M) |        |         |         |         |         |         |         |             |        |
| Appropriation   | Prior  | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 | To Complete | Total  |
| RDT&E   | 266.1  | 42.5    | 78.5    | 36.2    | 19.9    | 20.2    | 20.6    | 130.6       | 614.6  |
| Procurement   | 3531.4 | 603.2   | 503.8   | 417.9   | 438.7   | 450.8   | 440.4   | 2968.0      | 9354.2 |
| 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 2020 Total   | 3797.5 | 645.7   | 582.3   | 454.1   | 458.6   | 471.0   | 461.0   | 3098.6      | 9968.8 |
| PB 2019 Total   | 1977.7 | 552.8   | 538.1   | 433.1   | 458.6   | 471.0   | 24.8    | 214.7       | 4670.8 |
| Delta   | 1819.8 | 92.9    | 44.2    | 21.0    | 0.0     | 0.0     | 436.2   | 2883.9      | 5298.0 |

#### Funding Notes

##### RDT&E:

FY 2019 and FY 2020 decrease is a Zero Balance Transfer of the Military Code (M-Code) funding to the Common Program Element Code (PEC).

##### Procurement:

FY 2019 Congressional Mark + \$125M for new production facility to increase War Reserve Munition Inventory.

FY 2020 and 2021 \$20.9M added for QTY 19 OCO Missiles to replace expended missiles from combat operations.

| Quantity Summary  |               |       |         |         |         |         |         |         |             |       |
|---|---------------|-------|---------|---------|---------|---------|---------|---------|-------------|-------|
| FY 2020 President's Budget / December 2018 SAR (TY\$ M) |               |       |         |         |         |         |         |         |             |       |
| Quantity  | Undistributed | Prior | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 | To Complete | Total |
| Development   | 31            | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0           | 31    |
| Production  | 0             | 3294  | 360     | 430     | 297     | 265     | 273     | 263     | 2018        | 7200  |
| PB 2020 Total   | 31            | 3294  | 360     | 430     | 297     | 265     | 273     | 263     | 2018        | 7231  |
| PB 2019 Total   | 31            | 1260  | 360     | 360     | 289     | 327     | 270     | 0       | 0           | 2897  |
| Delta   | 0             | 2034  | 0       | 70      | 8       | -62     | 3       | 263     | 2018        | 4334  |

### Cost and Funding

#### Annual Funding By Appropriation

| Annual Funding  |          |                            |                                |                       |               |               |               |
|---|----------|----------------------------|--------------------------------|-----------------------|---------------|---------------|---------------|
| 3600   RDT&E   Research, Development, Test, and Evaluation, 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 |
| 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  | --       | --                         | --                             | --                    | --            | --            | 18.3          |
| 2018  | --       | --                         | --                             | --                    | --            | --            | 29.4          |
| 2019  | --       | --                         | --                             | --                    | --            | --            | 42.5          |
| 2020  | --       | --                         | --                             | --                    | --            | --            | 78.5          |
| 2021  | --       | --                         | --                             | --                    | --            | --            | 36.2          |
| 2022  | --       | --                         | --                             | --                    | --            | --            | 19.9          |
| 2023  | --       | --                         | --                             | --                    | --            | --            | 20.2          |
| 2024  | --       | --                         | --                             | --                    | --            | --            | 20.6          |
| 2025  | --       | --                         | --                             | --                    | --            | --            | 65.3          |
| 2026  | --       | --                         | --                             | --                    | --            | --            | 65.3          |
| Subtotal  | 31       | --                         | --                             | --                    | --            | --            | 614.6         |

| 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  | --       | --                         | --                             | --                    | --            | --            | 16.2          |
| 2018  | --       | --                         | --                             | --                    | --            | --            | 25.5          |
| 2019  | --       | --                         | --                             | --                    | --            | --            | 36.1          |
| 2020  | --       | --                         | --                             | --                    | --            | --            | 65.4          |
| 2021  | --       | --                         | --                             | --                    | --            | --            | 29.6          |
| 2022  | --       | --                         | --                             | --                    | --            | --            | 15.9          |
| 2023  | --       | --                         | --                             | --                    | --            | --            | 15.8          |
| 2024  | --       | --                         | --                             | --                    | --            | --            | 15.8          |
| 2025  | --       | --                         | --                             | --                    | --            | --            | 49.2          |
| 2026  | --       | --                         | --                             | --                    | --            | --            | 48.3          |
| Subtotal  | 31       | --                         | --                             | --                    | --            | --            | 543.3         |

| 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 |  |
| 2001  | 1        | 0.2                        | --                             | --                    | 0.2           | --            | 0.2           |  |
| 2002  | 76       | 42.8                       | --                             | --                    | 42.8          | 4.8           | 47.6          |  |
| 2003  | 100      | 100.8                      | --                             | --                    | 100.8         | --            | 100.8         |  |
| 2004  | 240      | 200.7                      | --                             | --                    | 200.7         | --            | 200.7         |  |
| 2005  | 288      | 188.2                      | --                             | --                    | 188.2         | --            | 188.2         |  |
| 2006  | 75       | 160.7                      | --                             | --                    | 160.7         | --            | 160.7         |  |
| 2007  | 163      | 260.6                      | --                             | --                    | 260.6         | --            | 260.6         |  |
| 2008  | 178      | 260.1                      | --                             | --                    | 260.1         | --            | 260.1         |  |
| 2009  | 120      | 248.2                      | --                             | --                    | 248.2         | --            | 248.2         |  |
| 2010  | 1        | 52.5                       | --                             | --                    | 52.5          | 4.3           | 56.8          |  |
| 2011  | 198      | 247.4                      | --                             | --                    | 247.4         | 1.8           | 249.2         |  |
| 2012  | 221      | 100.3                      | --                             | --                    | 100.3         | 4.6           | 104.9         |  |
| 2013  | 230      | 102.1                      | --                             | --                    | 102.1         | 6.6           | 108.7         |  |
| 2014  | 103      | 120.8                      | --                             | --                    | 120.8         | 4.3           | 125.1         |  |
| 2015  | 240      | 175.5                      | --                             | --                    | 175.5         | 37.3          | 212.8         |  |
| 2016  | 340      | 281.5                      | --                             | --                    | 281.5         | 60.2          | 341.7         |  |
| 2017  | 360      | 412.6                      | --                             | --                    | 412.6         | 19.4          | 432.0         |  |
| 2018  | 360      | 392.1                      | --                             | --                    | 392.1         | 41.0          | 433.1         |  |
| 2019  | 360      | 383.8                      | --                             | --                    | 383.8         | 219.4         | 603.2         |  |
| 2020  | 430      | 468.9                      | --                             | --                    | 468.9         | 34.9          | 503.8         |  |
| 2021  | 297      | 380.3                      | --                             | --                    | 380.3         | 37.6          | 417.9         |  |
| 2022  | 265      | 390.2                      | --                             | --                    | 390.2         | 48.5          | 438.7         |  |
| 2023  | 273      | 401.9                      | --                             | --                    | 401.9         | 48.9          | 450.8         |  |
| 2024  | 263      | 391.2                      | --                             | --                    | 391.2         | 49.2          | 440.4         |  |
| 2025  | 550      | 738.0                      | --                             | --                    | 738.0         | 50.4          | 788.4         |  |
| 2026  | 550      | 737.2                      | --                             | --                    | 737.2         | 51.8          | 789.0         |  |
| 2027  | 550      | 743.9                      | --                             | --                    | 743.9         | 53.1          | 797.0         |  |
| 2028  | 368      | 415.7                      | --                             | --                    | 415.7         | 54.2          | 469.9         |  |
| 2029  | --       | --                         | --                             | --                    | --            | 19.0          | 19.0          |  |
| 2030  | --       | --                         | --                             | --                    | --            | 19.5          | 19.5          |  |
| 2031  | --       | --                         | --                             | --                    | --            | 20.0          | 20.0          |  |
| 2032  | --       | --                         | --                             | --                    | --            | 20.5          | 20.5          |  |
| 2033  | --       | --                         | --                             | --                    | --            | 21.0          | 21.0          |  |
| 2034  | --       | --                         | --                             | --                    | --            | 21.6          | 21.6          |  |
| 2035  | --       | --                         | --                             | --                    | --            | 2.1           | 2.1           |  |
| Subtotal  | 7200     | 8398.2                     | --                             | --                    | 8398.2        | 956.0         | 9354.2        |  |

| 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 |  |
| 2001  | 1        | 0.2                        | --                             | --                    | 0.2           | --            | 0.2           |  |
| 2002  | 76       | 49.2                       | --                             | --                    | 49.2          | 5.6           | 54.8          |  |
| 2003  | 100      | 114.6                      | --                             | --                    | 114.6         | --            | 114.6         |  |
| 2004  | 240      | 223.4                      | --                             | --                    | 223.4         | --            | 223.4         |  |
| 2005  | 288      | 203.7                      | --                             | --                    | 203.7         | --            | 203.7         |  |
| 2006  | 75       | 169.0                      | --                             | --                    | 169.0         | --            | 169.0         |  |
| 2007  | 163      | 267.4                      | --                             | --                    | 267.4         | --            | 267.4         |  |
| 2008  | 178      | 262.1                      | --                             | --                    | 262.1         | --            | 262.1         |  |
| 2009  | 120      | 246.6                      | --                             | --                    | 246.6         | --            | 246.6         |  |
| 2010  | 1        | 51.4                       | --                             | --                    | 51.4          | 4.2           | 55.6          |  |
| 2011  | 198      | 237.5                      | --                             | --                    | 237.5         | 1.7           | 239.2         |  |
| 2012  | 221      | 94.7                       | --                             | --                    | 94.7          | 4.3           | 99.0          |  |
| 2013  | 230      | 94.2                       | --                             | --                    | 94.2          | 6.1           | 100.3         |  |
| 2014  | 103      | 109.8                      | --                             | --                    | 109.8         | 4.0           | 113.8         |  |
| 2015  | 240      | 157.7                      | --                             | --                    | 157.7         | 33.6          | 191.3         |  |
| 2016  | 340      | 248.5                      | --                             | --                    | 248.5         | 53.1          | 301.6         |  |
| 2017  | 360      | 355.9                      | --                             | --                    | 355.9         | 16.8          | 372.7         |  |
| 2018  | 360      | 331.5                      | --                             | --                    | 331.5         | 34.7          | 366.2         |  |
| 2019  | 360      | 318.1                      | --                             | --                    | 318.1         | 181.9         | 500.0         |  |
| 2020  | 430      | 381.0                      | --                             | --                    | 381.0         | 28.4          | 409.4         |  |
| 2021  | 297      | 303.0                      | --                             | --                    | 303.0         | 29.9          | 332.9         |  |
| 2022  | 265      | 304.8                      | --                             | --                    | 304.8         | 37.9          | 342.7         |  |
| 2023  | 273      | 307.8                      | --                             | --                    | 307.8         | 37.4          | 345.2         |  |
| 2024  | 263      | 293.7                      | --                             | --                    | 293.7         | 36.9          | 330.6         |  |
| 2025  | 550      | 543.2                      | --                             | --                    | 543.2         | 37.1          | 580.3         |  |
| 2026  | 550      | 532.0                      | --                             | --                    | 532.0         | 37.3          | 569.3         |  |
| 2027  | 550      | 526.3                      | --                             | --                    | 526.3         | 37.5          | 563.8         |  |
| 2028  | 368      | 288.3                      | --                             | --                    | 288.3         | 37.6          | 325.9         |  |
| 2029  | --       | --                         | --                             | --                    | --            | 12.9          | 12.9          |  |
| 2030  | --       | --                         | --                             | --                    | --            | 13.0          | 13.0          |  |
| 2031  | --       | --                         | --                             | --                    | --            | 13.1          | 13.1          |  |
| 2032  | --       | --                         | --                             | --                    | --            | 13.1          | 13.1          |  |
| 2033  | --       | --                         | --                             | --                    | --            | 13.2          | 13.2          |  |
| 2034  | --       | --                         | --                             | --                    | --            | 13.3          | 13.3          |  |
| 2035  | --       | --                         | --                             | --                    | --            | 1.3           | 1.3           |  |
| Subtotal  | 7200     | 7015.6                     | --                             | --                    | 7015.6        | 745.9         | 7761.5        |  |

## Low Rate Initial Production

| Item                     | Initial LRIP Decision | Current Total LRIP |
|--------------------------|-----------------------|--------------------|
| <b>Approval Date</b>     | 1/10/2011             | 1/10/2011          |
| <b>Approved Quantity</b> | 100                   | 160                |
| <b>Reference</b>         | Milestone C ADM       | Milestone C ADM    |
| <b>Start Year</b>        | 2011                  | 2011               |
| <b>End Year</b>          | 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.

## Foreign Military Sales

### Notes

FMS of JASSM-ER to Poland was approved and the Letter of Offer and Acceptance was signed on December 29, 2016 to acquire missiles 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 Lot 17 projected for June 2019. Lot 16 Contract will include one Live Fire (LF) test asset, two Separation Test Vehicles (STV), and the Lot 17 contract will include JASSM-ER all up rounds. STV/LF testing is planned to be accomplished in CY 2019.

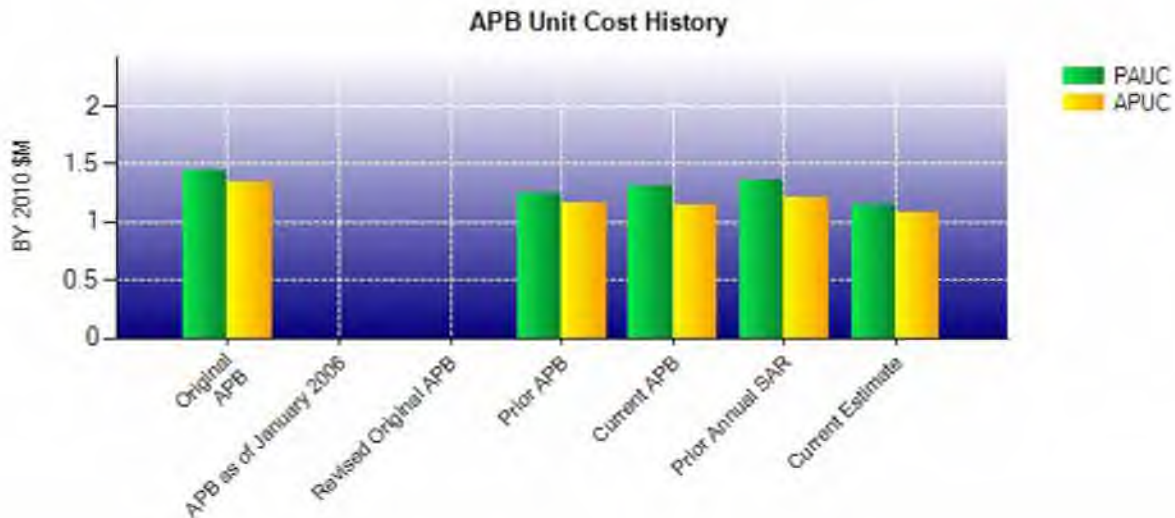
## Nuclear Costs

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 2018 SAR) |          |
| <b>Program Acquisition Unit Cost</b>                           |                                      |                                 |          |
| Cost   | 3816.6                               | 8304.8                          |          |
| Quantity   | 2897                                 | 7231                            |          |
| Unit Cost  | 1.317                                | 1.148                           | -12.83   |
| <b>Average Procurement Unit Cost</b>                           |                                      |                                 |          |
| Cost   | 3297.1                               | 7761.5                          |          |
| Quantity   | 2866                                 | 7200                            |          |
| Unit Cost  | 1.150                                | 1.078                           | -6.26    |
| 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 2018 SAR) |          |
| <b>Program Acquisition Unit Cost</b>                           |                                      |                                 |          |
| Cost   | 3631.6                               | 8304.8                          |          |
| Quantity   | 2531                                 | 7231                            |          |
| Unit Cost  | 1.435                                | 1.148                           | -20.00   |
| <b>Average Procurement Unit Cost</b>                           |                                      |                                 |          |
| Cost   | 3366.1                               | 7761.5                          |          |
| Quantity   | 2500                                 | 7200                            |          |
| Unit Cost  | 1.346                                | 1.078                           | -19.91   |





| 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 2017 | 1.355       | 1.207 | 1.612  | 1.453 |
| Current Estimate       | Dec 2018 | 1.148       | 1.078 | 1.379  | 1.299 |

### 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   | 0.015   | 0.112 | -0.113 | 0.105 | 0.220 | 0.000 | 0.122 | 0.461 | 1.379                 |

| 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   | 0.015   | 0.143 | -0.110 | 0.070 | 0.197 | 0.000 | 0.122 | 0.437 | 1.299                 |

| 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                  | 9968.8           |
| Total Quantity       | N/A                   | N/A                      | 2507                    | 7231             |
| PAUC                 | N/A                   | N/A                      | 0.918                   | 1.379            |

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                           | +0.3          | +76.3          | --        | +76.6          |
| Quantity                           | +64.9         | +356.8         | --        | +421.7         |
| Schedule                           | -25.8         | -161.6         | --        | -187.4         |
| Engineering                        | +254.7        | +292.5         | --        | +547.2         |
| Estimating                         | +66.0         | +772.3         | --        | +838.3         |
| Other                              | --            | --             | --        | --             |
| Support                            | --            | +673.0         | --        | +673.0         |
| <b>Subtotal</b>                    | <b>+360.1</b> | <b>+2009.3</b> | <b>--</b> | <b>+2369.4</b> |
| Current Changes                    |               |                |           |                |
| Economic                           | +2.7          | +32.1          | --        | +34.8          |
| Quantity                           | --            | +4722.1        | --        | +4722.1        |
| Schedule                           | --            | -627.3         | --        | -627.3         |
| Engineering                        | --            | +211.4         | --        | +211.4         |
| Estimating                         | +105.2        | +643.8         | --        | +749.0         |
| Other                              | --            | --             | --        | --             |
| Support                            | --            | +208.0         | --        | +208.0         |
| <b>Subtotal</b>                    | <b>+107.9</b> | <b>+5190.1</b> | <b>--</b> | <b>+5298.0</b> |
| <b>Total Changes</b>               | <b>+468.0</b> | <b>+7199.4</b> | <b>--</b> | <b>+7667.4</b> |
| CE - Cost Variance                 | 614.6         | 9354.2         | --        | 9968.8         |
| CE - Cost & Funding                | 614.6         | 9354.2         | --        | 9968.8         |

| 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                        | +212.4 | +200.3      | --     | +412.7  |
| Estimating                         | +52.4  | +436.7      | --     | +489.1  |
| Other                              | --     | --          | --     | --      |
| Support                            | --     | +521.1      | --     | +521.1  |
| Subtotal                           | +308.0 | +1423.4     | --     | +1731.4 |
| Current Changes                    |        |             |        |         |
| Economic                           | --     | --          | --     | --      |
| Quantity                           | --     | +3575.2     | --     | +3575.2 |
| Schedule                           | --     | -89.5       | --     | -89.5   |
| Engineering                        | --     | +162.0      | --     | +162.0  |
| Estimating                         | +76.2  | +492.4      | --     | +568.6  |
| Other                              | --     | --          | --     | --      |
| Support                            | --     | +162.1      | --     | +162.1  |
| Subtotal                           | +76.2  | +4302.2     | --     | +4378.4 |
| Total Changes                      | +384.2 | +5725.6     | --     | +6109.8 |
| CE - Cost Variance                 | 543.3  | 7761.5      | --     | 8304.8  |
| CE - Cost & Funding                | 543.3  | 7761.5      | --     | 8304.8  |

Previous Estimate: December 2017

| RDT&E  | \$M          |               |
|--|--------------|---------------|
|  | Base Year    | Then Year     |
| <b>Current Change Explanations</b>   |              |               |
| Revised escalation indices. (Economic)   | N/A          | +2.7          |
| Adjustment for current and prior escalation. (Estimating)  | -0.8         | -0.9          |
| Variance caused by FY17 and FY19 Congressional Marks, Zero Balance Transfer, and increased cost to complete to accommodate higher missile quantities. (Estimating) | +77.0        | +106.1        |
| <b>RDT&amp;E Subtotal</b>  | <b>+76.2</b> | <b>+107.9</b> |

| Procurement  | \$M            |                |
|--|----------------|----------------|
|  | Base Year      | Then Year      |
| <b>Current Change Explanations</b>   |                |                |
| Revised escalation indices. (Economic)   | N/A            | +32.1          |
| Total Quantity variance resulting from an increase of 4,334 missiles from 2,866 to 7,200. (Subtotal)   | +3614.0        | +4746.8        |
| Quantity variance resulting from an increase of 4,334 missiles from 2,866 to 7,200. (Quantity)   | (+3114.0)      | (+4094.8)      |
| Allocation to Schedule resulting from Quantity change. (Schedule) (QR)   | (-89.5)        | (-116.7)       |
| Allocation to Engineering resulting from Quantity change. (Engineering) (QR)   | (+162.0)       | (+211.4)       |
| Allocation to Estimating resulting from Quantity change. (Estimating) (QR)   | (+427.5)       | (+557.3)       |
| Acceleration of procurement buy profile from FY 2023 to FY 2019 (Schedule)   | 0.0            | -510.6         |
| Adjustment for current and prior escalation. (Estimating)  | -10.2          | -11.6          |
| Adjustment for current and prior escalation. (Support)   | -1.1           | -1.6           |
| Additional quantity variance due to a change in the quantity type mix. (Quantity)  | +461.2         | +627.3         |
| New Estimating change. Adding Baseline quantities and funding back into SAR. (Estimating)  | +75.1          | +98.1          |
| Increased support contains equipment purchases for new Lockheed facility and increase System Engineering to support larger missile quantities. (Support) | +163.5         | +209.9         |
| Decrease in Initial Spares, Reprogramming action processed in FY 17 and FY 18 for residual funding. (Support)  | -0.3           | -0.3           |
| <b>Procurement Subtotal</b>  | <b>+4302.2</b> | <b>+5190.1</b> |

(QR) Quantity Related

## Contracts

| Contract Identification     |  |
|-----------------------------|--|
| <b>Appropriation:</b>       | Procurement                                      |
| <b>Contract Name:</b>       | JASSM Production (Lot 13)                        |
| <b>Contractor:</b>          | Lockheed Martin Corporation                      |
| <b>Contractor Location:</b> | 5600 W. Sand Lake Road<br>Orlando, FL 32819-8907 |
| <b>Contract Number:</b>     | FA8682-16-C-0005/13                              |
| <b>Contract Type:</b>       | Fixed Price Incentive(Firm Target) (FPIF)        |
| <b>Award Date:</b>          | October 09, 2015                                 |
| <b>Definitization Date:</b> | 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                        | 263.4   | 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 last JASSM-BL delivery on December 20, 2018.

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 Dummy Air Training Missiles (DATM) (\$579.0K)

Mod P00021: Robotics Validation effort (\$300.6K)

Mod P00023: Focal Plane Array (FPA), 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: Re-Design & Fabrication of the JASSM FPA Test Stations (\$612.1K)

Mod P00027: JASSM receiver Flash Memory & Automated Information System (AIS) Inertial Measurement Unit (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 Contract Line Item Number (CLINs) 9116 and 9117, extend the Period of Performance for CLIN 5005,(\$-8.9K)

Mod P00035: Fund the Troy Government furnished property (GFP) tooling repair (\$24.1K)

**Cost and Schedule Variance Explanations**

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

**General Contract Variance Explanation**

Cost and schedule variances are not reported for this contract, because an earned value management waiver was granted by Dr. William B. Roper, Jr. AT&L Assistant Secretary of the Air Force on 26 April 2018 due to the maturity of the program and cost data already being collected on Cost and Software Data Reporting (CSDRs).

**Notes**

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

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

**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                        | 417.6   | 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 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) Non-Recurring Engineering (NRE) (\$1.6M)  
 Mod P00018: VECP Honeywell (\$1.4M)  
 Mod P00014: Critical Tooling and Test Stations (\$1.4M)  
 Mod P00036: De-obligate subCLINs 9007AA and 9007AB (-\$96.9K)  
 Mod P00039: De-obligate tooling funds as a result of savings from subcontractors. (-\$182.2K)

**Cost and Schedule Variance Explanations**

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

**General Contract Variance Explanation**

Cost and schedule variances are not reported for this contract, because an earned value management waiver was granted by Dr. William B. Roper, Jr. AT&L Assistant Secretary of the Air Force on 26 April 2018 due to the maturity of the program and cost data already being collected on Cost and Software Data Reporting (CSDRs).

**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.



**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  
 Orlando, FL 32819  
**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 |
| 413.8                        | N/A     | 360 | 415.8                        | N/A     | 360 | 415.8                               | 415.8           |

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications which were awarded after the initial contract awarded in June 2017. Lot 15 was the first lot of JASSM-ER only missiles.

Mod P00001: Williams international tooling (\$1.9M)  
 Mod P00002: Long Range Anti Ship Missile (LRASM) LOT 1 (\$86.4M)  
 Mod P00003: Procure 12 JASSM live warheads (\$460.0K)  
 Mod P00004: Buy 5 more LRASM missiles (\$17.9M)  
 Mod P00005: Receiver obsolescence LTB (\$34.7K)  
 Mod P00007: Supplier Expedite fees (\$83.1K)  
 Mod P00008: JASSM Weapon System Evaluation Program (WSEP) (\$382.6K)  
 Mod P00010: JASSM B2 Integration (\$3.9M)  
 Mod P00011: Engineering Change Proposal VECP (\$386.3K)  
 Mod P00012: 4 LRASM missiles with containers (\$13.9M)  
 Mod P00013: Micro-Electro-Mechanical System (MEMS) Gyro VECP (\$1.6M)  
 Mod P00014: Missile Control Unit (MCU) Sensitive Security Information (SSI) Circuit Card Assembly (CCA) Diode LTB (\$29.9K)  
 Mod P00015: Updated Supplier Expedite fees (\$343.6K)  
 Mod P00017: Reduce quantities of Electrically Erasable Programmable Read-Only Memory (EEPROM) (-2.6K)

**Cost and Schedule Variance Explanations**

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

**General Contract Variance Explanation**

Cost and schedule variances are not reported for this contract, because an earned value management waiver was granted by Dr. William B. Roper, Jr. AT&L Assistant Secretary of the Air Force on 26 April 2018 due to the maturity of the program and cost data already being collected on Cost and Software Data Reporting (CSDRs).

**Notes**

Lot 15 PMCEPAC Budgeted by PM (Large Active Contracts): Lot 15 contract includes LRASM units in the amount of \$56.8M not shown in the Target Price listed above.

Initial contract target price was updated to \$413.8M to reflect accuracy as December 2017 SAR's number of \$411M was based on only missile cost.

**Contract Identification**

**Appropriation:** Procurement  
**Contract Name:** JASSM Production (Lot 16)  
**Contractor:** Lockheed Martin Corporation  
**Contractor Location:** 5600 W. Sand Lake Road  
 Orlando, FL 32819-8907  
**Contract Number:** FA8682-19-C-0009  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF)  
**Award Date:** October 05, 2018  
**Definitization Date:** October 05, 2018

| Contract Price               |         |     |                              |         |     |                                     |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 386.3                        | 386.8   | 360 | 386.3                        | 386.8   | 360 | 386.3                               | 386.3           |

**Cost and Schedule Variance Explanations**

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

**General Contract Variance Explanation**

Cost and schedule variances are not reported for this contract, because an earned value management waiver was granted by Dr. William B. Roper, Jr. AT&L Assistant Secretary of the Air Force on 26 April 2018 due to the maturity of the program and cost data already being collected on Cost and Software Data Reporting (CSDRs).

**Notes**

This is the first time this contract is being reported.

Lot 16 was executed October 5th, 2018. The total contract price for Lot 16 is for 360 Missiles at a target price of \$386.3M and considered the initial/original contract price.

## Deliveries and Expenditures

| Deliveries                       |                 |                |                |                   |
|----------------------------------|-----------------|----------------|----------------|-------------------|
| Delivered to Date                | Planned to Date | Actual to Date | Total Quantity | Percent Delivered |
| Development                      | 31              | 31             | 31             | 100.00%           |
| Production                       | 432             | 432            | 7200           | 6.00%             |
| Total Program Quantity Delivered | 463             | 463            | 7231           | 6.40%             |

| Expended and Appropriated (TY \$M) |        |                            |        |
|------------------------------------|--------|----------------------------|--------|
| Total Acquisition Cost             | 9968.8 | Years Appropriated         | 19     |
| Expended to Date                   | 1067.5 | Percent Years Appropriated | 54.29% |
| Percent Expended                   | 10.71% | Appropriated to Date       | 4443.2 |
| Total Funding Years                | 35     | Percent Appropriated       | 44.57% |

The above data is current as of March 11, 2019.

### Notes

Production deliveries (DD250): Lot 9/ER LRIP 1 through Lot 13/ER, Qty 300. Lot 14 is on contract for 240 missiles, currently 132 missiles have been delivered. Delivered to date is 432. Deliveries are in accordance with contractual requirements.

## Operating and Support Cost

### Cost Estimate Details

|                                 |                   |
|---------------------------------|-------------------|
| <b>Date of Estimate:</b>        | August 18, 2018   |
| <b>Source of Estimate:</b>      | POE               |
| <b>Quantity to Sustain:</b>     | 7200              |
| <b>Unit of Measure:</b>         | Total Quantity    |
| <b>Service Life per Unit:</b>   | 15.00 Years       |
| <b>Fiscal Years in Service:</b> | 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 for Lots 1-10 and Contractor Logistics Support for all non-warranty support through Lot 16.

JASSM baseline and JASSM-ER are wooden rounds, meaning there is no routine maintenance require. 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

| Cost Element                   | Annual O&S Costs BY2010 \$M                           |   |
|--------------------------------|---|---|
|                                | JASSM-ER<br>Average Annual Cost Per Total<br>Quantity | No Antecedent (Antecedent)<br>No Antecedent |
| Unit-Level Manpower            | 2.065   | 0.000                                       |
| Unit Operations                | 0.000   | 0.000                                       |
| Maintenance                    | 1.477   | 0.000                                       |
| Sustaining Support             | 3.569   | 0.000                                       |
| Continuing System Improvements | 10.272  | 0.000                                       |
| Indirect Support               | 1.314   | 0.000                                       |
| Other                          | 0.000   | 0.000                                       |
| <b>Total</b>                   | <b>18.697</b>   | <b>--</b>                                   |

| Item             | Total O&S Cost \$M                            |       |                  |                               |
|------------------|---|-------|------------------|-------------------------------|
|                  | JASSM-ER                                      |       |                  | No Antecedent<br>(Antecedent) |
|                  | Current Production APB<br>Objective/Threshold |       | Current Estimate |                               |
| <b>Base Year</b> | 622.5   | 684.8 | 523.5            | N/A                           |
| <b>Then Year</b> | 908.6   | N/A   | 845.3            | N/A                           |

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

Total O&S Cost = total years in service \* average annual cost = 28 \* \$18.696M = \$523.5M

| O&S Cost Variance                            |                |  |
|--|----------------|--|
| Category                                     | BY 2010<br>\$M | Change Explanations                      |
| Prior SAR Total O&S Estimates - Dec 2017 SAR | 632.7          |  |
| Programmatic/Planning Factors                | 0.0            |  |
| Cost Estimating Methodology                  | 0.0            |  |
| Cost Data Update                             | 0.0            |  |
| Labor Rate                                   | 0.0            |  |
| Energy Rate                                  | 0.0            |  |
| Technical Input                              | 0.0            |  |
| Other  | -109.2         | Previous SAR in BY14. Converted to BY10. |
| <b>Total Changes</b>                         | <b>-109.2</b>  |  |
| Current Estimate                             | 523.5          |  |

#### Disposal Estimate Details

**Date of Estimate:** August 18, 2018  
**Source of Estimate:** POE  
**Disposal/Demilitarization Total Cost (BY 2010 \$M):** 67.0

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