

UNCLASSIFIED



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-503



Joint Direct Attack Munition (JDAM)

As of FY 2020 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

UNCLASSIFIED

Table of Contents

Sensitivity Originator	3
Common Acronyms and Abbreviations for MDAP Programs	4
Program Information	6
Responsible Office	6
References	7
Mission and Description	8
Executive Summary	9
Threshold Breaches	11
Schedule	12
Performance	15
Track to Budget	17
Cost and Funding	17
Low Rate Initial Production	30
Foreign Military Sales	31
Nuclear Costs	34
Unit Cost	35
Cost Variance	38
Contracts	41
Deliveries and Expenditures	44
Operating and Support Cost	45

Sensitivity Originator

No originator information is 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 Direct Attack Munition (JDAM)

DoD Component

Air Force

Joint Participants

Navy

Responsible Office

Col W. Scott Bell
6033 Elm Lane, Bldg 1247
Hill AFB, UT 84056

william.bell@us.af.mil

Phone: 801-777-5434

Fax: 801-777-2099

DSN Phone: 777-5434

DSN Fax:

Date Assigned: June 15, 2015

References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 23, 2001

Approved APB

Air Force Acquisition Executive (AFAE) Approved Acquisition Program Baseline (APB) dated April 8, 2018

Mission and Description

The Joint Direct Attack Munition (JDAM) program is a joint Air Force/Navy program with the Air Force as the lead acquisition Service. Designated Acquisition Category IC, this program upgrades the existing inventory of general purpose bombs by integrating the bombs with a field installed guidance kit equipped with a Global Positioning System Aided Inertial Navigation System. JDAM provides the capability to accurately and autonomously attack fixed, or relocatable, land and maritime targets under adverse weather conditions from medium and high altitudes. JDAM is integrated with the A-10C, AV-8B, B-1B, B-2A, B-52H, F-15E, F-16 (all blocks), F/A-18A+/C/D/E/F, and F-22A aircraft. Follow-on integration with the MQ-9 and F-35 Joint Strike Fighter (JSF) are in progress (F-35 is integrated with the 2,000 lb. class, but not the 500 lb. class). Laser JDAM (LJDAM) provides moving target capability to the JDAM family of weapons.

JDAM provides an improved aerial delivery capability for existing MK-82/BLU-111/BLU-126/BLU-129 (500 lb.), MK-83/BLU-110 (1,000 lb.), MK-84/BLU-117/BLU-109 (2,000 lb.) warheads. The improved capability is via a strap-on inertial guidance kit with Global Positioning System (GPS) updates. The kit provides autonomous adverse weather delivery accuracy from five meters Circular Error Probable (CEP) when GPS is available to the weapon, to less than 30 meters when GPS is absent or jammed. The laser sensor kit added to the JDAM weapon kit provides ability to attack moving targets when designated by airborne or ground laser.

Executive Summary

Program Highlights Since Last Report

This is the final SAR submission for the JDAM program. JDAM reached 100% of the original combined Service acquisition objective of 87,496 tail kits with Production Lot 7 in FY 2004, but has been obligated to continue reporting a SAR given the recurring extension of procurements. JDAM has no history of cost growth or schedule delays, and continually meets reliability requirements. There is no value added by continuing to report a SAR, and therefore this is the final report for the program.

JDAM Tail Kit Production

- Boeing and the JDAM supply base have successfully increased JDAM tail kit production from 75 kits/day to 180 kits/day (45,000 kits/year).
- The Lot 22 Delivery Order was awarded on March 30, 2018 with a total quantity of 45,000 tail kits for all customers.
- Urgent Operational Need (UON) to procure 1,000 Strategic Anti-Jam Beamforming Receiver (SABR-Y) JDAM tail kits executed as part of the Lot 22 Delivery Order.

Laser JDAM Sensor Production

- The Navy Direct Attack Moving Target Capability Office serves as lead service for Air Force, Navy, and FMS procurements of the laser sensor kits for Guided Bomb Unit (GBU)-54 (500lb. weapon) and the GBU-56 (2000lb. weapon).
- Boeing and the Laser JDAM (LJDAM) supply base are ramping Laser JDAM sensor production from 6,000 kits/year to 12,000 kits/year. Boeing will achieve this rate by the end of CY 2019 when Lot 7 starts delivering.
- The LJDAM Lot 7 Delivery Order was awarded in November 2018 with a total quantity of 6,000 laser sensors for all customers.
- The Air Force plans to purchase the Direct Service Unit 40 (DSU-40) laser sensor when Lot 7 is modified for additional capacity (estimated completion 3rd Quarter FY 2019). The Air Force has acquired 5 test assets for the GBU-56, which features the DSU-40 laser sensor.

The JDAM APB was updated and received final approval from Component Acquisition Executive on April 8, 2018.

FY 2017 RDT&E (3600) received a reprogramming increase of \$1.633M for M-Code integration.

FY 2018 Procurement (3011) received a reprogramming increase of \$275.0M that is included in this report.

FY 2019 RDT&E (3600) \$15.787M realigned to common M-Code budget line.

FY 2019 Procurement (3011) received a \$50.0M Congressional mark.

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

History of Significant Developments Since Program Initiation	
History of Significant Developments Since Program Initiation	
Date	Significant Development Description
June 1992	Milestone 0
October 1993	Milestone I
April 1994	Demonstration/Validation Contract Award
August 1995	Critical Design Review Complete
September 1995	Milestone II
October 1995	Exercised Engineering Manufacturing Development Contract Option
December 1995	Flight Tests Start
January 1997	Operational Assessment Complete
August 1997	Exercise Lot 1 Option
May 1998	Lot 1 First Production Delivery
June 1998	Flight Test Complete (2,000lb. Kit)
June 1998	Exercise Lot 2 Option Low Rate Initial Production (LRIP)
August 1998	Flight Test Complete (1,000lb. Kit)
March 1999	Required Assets Availability
June 1999	Award Lot 3 LRIP
September 2000	Initial Operational Test and Evaluation (IOT&E)/Operational Evaluation (OPEVAL) Complete (Dedicated 2,000lb. Kit)
February 2001	Initial Operational Capability (IOC) (F/A-18)
March 2001	Milestone III (2,000lb. Kit)
June 2001	OT&E/OPEVAL Complete (1,000lb. Kit on F/A-18C/D)
February 2002	Milestone III (1,000lb. Kit on F/A-18C/D)
September 2002	Milestone I JDAM Product Improvement Program
July 2003	IOT&E/OPEVAL Complete (1,000lb. Kit on F/A-18C/D)
July 2003	Initial Production (500lb. Kit)
November 2004	Required Assets Availability (500lb. Kit)
February 2005	IOC (500lb. Kit on F/A-18C/D)
March 2005	Selective Availability Anti-Spoofing Module/Anti-Jam Production Award

Threshold Breaches

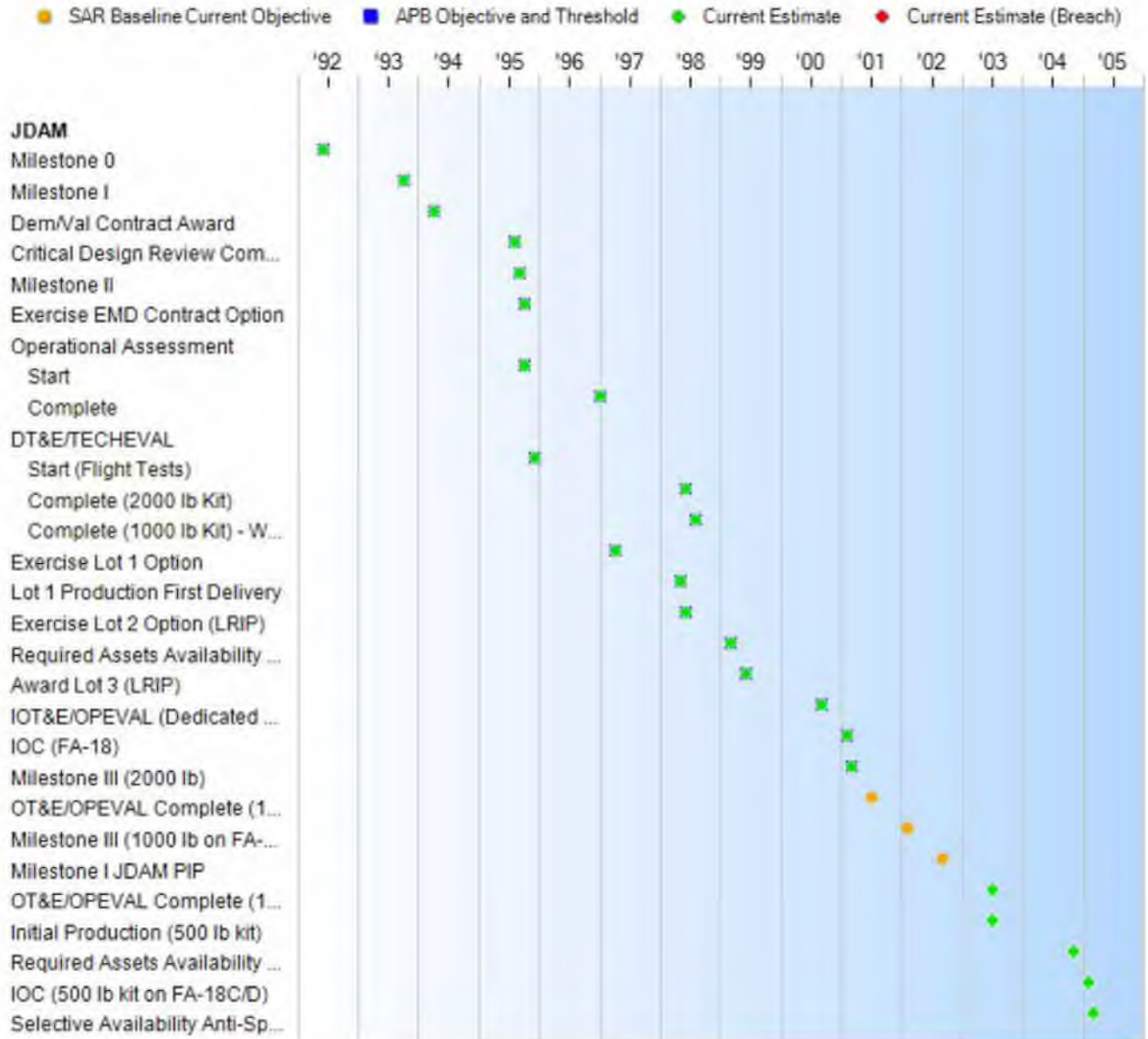
APB Breaches

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

Nunn-McCurdy Breaches

- Current UCR Baseline
 - PAUC None
 - APUC None
- Original UCR Baseline
 - PAUC None
 - APUC None

Schedule



Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate
Milestone 0	Jun 1992	Jun 1992	Jun 1992	Jun 1992
Milestone I	Oct 1993	Oct 1993	Oct 1993	Oct 1993
Dem/Val Contract Award	Apr 1994	Apr 1994	Apr 1994	Apr 1994
Critical Design Review Complete	Aug 1995	Aug 1995	Aug 1995	Aug 1995
Milestone II	Sep 1995	Sep 1995	Sep 1995	Sep 1995
Exercise EMD Contract Option	Oct 1995	Oct 1995	Oct 1995	Oct 1995
Operational Assessment				
Start	Oct 1995	Oct 1995	Oct 1995	Oct 1995
Complete	Mar 1997	Jan 1997	Jan 1997	Jan 1997
DT&E/TECHEVAL				
Start (Flight Tests)	Oct 1995	Dec 1995	Dec 1995	Dec 1995
Complete (2000 lb Kit)	Dec 1997	Jun 1998	Jun 1998	Jun 1998
Complete (1000 lb Kit) - Weapon Only	Feb 1998	Aug 1998	Aug 1998	Aug 1998
Exercise Lot 1 Option	Apr 1997	Apr 1997	Apr 1997	Apr 1997
Lot 1 Production First Delivery	Apr 1998	May 1998	May 1998	May 1998
Exercise Lot 2 Option (LRIP)	Apr 1998	Jun 1998	Jun 1998	Jun 1998
Required Assets Availability (AF)	Mar 1999	Mar 1999	Mar 1999	Mar 1999
Award Lot 3 (LRIP)	Jun 1999	Jun 1999	Jun 1999	Jun 1999
IOT&E/OPEVAL (Dedicated 2000 lb Kit) Complete	Sep 2000	Sep 2000	Sep 2000	Sep 2000
IOC (FA-18)	Nov 2000	Feb 2001	Feb 2001	Feb 2001
Milestone III (2000 lb)	Nov 2000	Mar 2001	Mar 2001	Mar 2001
OT&E/OPEVAL Complete (1000 lb Kit/FA-18C/D)	Jul 2001	N/A	N/A	N/A
Milestone III (1000 lb on FA-18C/D)	Feb 2002	N/A	N/A	N/A
Milestone I JDAM PIP	Sep 2002	N/A	N/A	N/A
OT&E/OPEVAL Complete (1000 lb Kit/FA-18C/D)	N/A	Jul 2003	Jul 2003	Jul 2003
Initial Production (500 lb kit)	N/A	Jul 2003	Jul 2003	Jul 2003
Required Assets Availability (RAA) (500 lb on B-2)	N/A	Nov 2004	Nov 2004	Nov 2004
IOC (500 lb kit on FA-18C/D)	N/A	Feb 2005	Feb 2005	Feb 2005
Selective Availability Anti-Spoofing Module (SAASM)/GPS Anti-Jam Production Award	N/A	Mar 2005	Mar 2005	Mar 2005

Change Explanations

None

Acronyms and Abbreviations

AF - Air Force
Dem/Val - Demonstration/Validation
DT&E - Development Test and Evaluation
GPS - Global Positioning System
IOT&E - Initial Operational Test and Evaluation
lb - Pound
LRIP - Low Rate Initial Production
OPEVAL - Operational Evaluation
OT&E - Operational Test and Evaluation
PIP - Product Improvement Program
TECHEVAL - Technical Evaluation

Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold	Demonstrated Performance	Current Estimate	
Weather Capability				
Adverse	Adverse	(T=O) Adverse	Adverse	Adverse
Accuracy (CEP) (Meters)				
GPS Available, Impact Angles > 60 Deg				
13 Horizontal Targets	5 Meters Against Horizontal Targets	13 Meters Against Horizontal Targets	4.2 Meters Against Horizontal Targets	5 Meters Against Horizontal Targets
Inflight Re-targeting Capability (captive carry)				
Yes	Yes	(T=O) Yes	Yes	Yes
Carrier Operability				
Yes	Yes	(T=O) Yes	Yes	Yes
Warhead Compatibility				
MK-82/BLU-111, MK-83, Improved 1000-lbs, BLU-113/116/117	MK-82/BLU-111, MK-83, Improved 1000-lbs, BLU-113/116/117	BLU-109, MK-84, MK-83 (F-22)	MK-82/BLU-111/BLU-126/BLU-129, MK-83 (F-22)/BLU-110, MK-84/BLU-117/BLU-109	MK-82/BLU-111/BLU-126/BLU-129, MK-83 (F-22)/BLU-110, MK-84/BLU-117/BLU-109
Aircraft Compatibility				
Bomber				
B-1B, B-2	B-1B, B-2	B-52H	B-52H, B-1B, B-2A	B-52H, B-1B, B-2A
Fighter Attack				
F-16C/D, F/A-18E/F, F-117A, F-15E, F-14A/B/D, P-3, S-3, JSF, A-10	F-16C/D, F/A-18E/F, F-117A, F-15E, F-14A/B/D, P-3, S-3, JSF, A-10	F/A-18C/D, F-22 (MK-83), AV-8B & F/A-18C/D (MK-83)	F-16C/D, F/A-18A+/C/D/E/F, F-15E, AV-8B, A-10C, F-22A, F-35	F-16C/D, F/A-18A+/C/D/E/F, F-15E, AV-8B, A-10C, F-22A, F-35, MQ-9
Mission Reliability				
.90	.90	(T=O) .90	.938	.90
Interoperability				
N/A	Satisfy 100% of critical IERs	(T=O) Satisfy 100% of critical IERs	Satisfied	Satisfied
JDAM PIP Accuracy (CEP) (Meters)				
3	N/A	N/A	N/A	N/A
JDAM PIP Weather Capability				
Adverse	N/A	N/A	N/A	N/A

JDAM PIP Warhead Compatibility

MK-82, MK-83	N/A	N/A	N/A	N/A
--------------	-----	-----	-----	-----

Requirements Reference

ORD dated March 10, 2001

Change Explanations

None

Acronyms and Abbreviations

CEP - Circular Error Probable

Deg - Degree

GPS - Global Positioning System

IER - Information Exchange Requirement

PIP - Product Improvement Program

T=O - Threshold = Objective

Track to Budget

RDT&E

Appn	BA	PE		
Navy	1319	05	0604618N	
	Project		Name	
	2137		JDAM	(Sunk)
Air Force	3600	05	0604618F	
	Project		Name	
	3890		JDAM	(Sunk)
Air Force	3600	04	0604618F	
	Project		Name	
	641200		JDAM Development & Prototyping	(Sunk)
Air Force	3600	07	0604618F	
	Project		Name	
	653891		JDAM M-Code Integration	
	674138		JDAM Development	(Sunk)

Procurement

Appn	BA	PE		
Navy	1508	01	0204162N	
	Line Item		Name	
	0145		General Purpose Bombs	(Shared)
	0148		JDAM	
Navy	1508	01	0206138M	
	Line Item		Name	
	0148		JDAM	(Sunk)
Air Force	3011	01	0207583F	
	Line Item		Name	
	353620		Joint Direct Attack Munition	

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 1995 \$M			BY 1995 \$M	TY \$M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	490.3	619.2	681.1	585.7	517.3	673.7	621.7
Procurement	1810.0	11472.1	12619.3	8625.8	2089.4	16586.9	11907.7
Flyaway	--	--	--	8143.4	--	--	11267.5
Recurring	--	--	--	8139.3	--	--	11261.5
Non Recurring	--	--	--	4.1	--	--	6.0
Support	--	--	--	482.4	--	--	640.2
Other Support	--	--	--	482.4	--	--	640.2
Initial Spares	--	--	--	0.0	--	--	0.0
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	2300.3	12091.3	N/A	9211.5	2606.7	17260.6	12529.4

Current APB Cost Estimate Reference

POE dated December 22, 2017

Cost Notes

If an Independent Cost Estimate, Component Cost Estimate, or Program Office Estimate has been completed for the program in the previous year, list any program risks identified in the estimates, the potential impacts of the risks on program cost, and approaches to mitigate the risks.

At the time of the baseline update, the JDAM program was 21 years into Production and Deployment and is considered a mature program. Technical and programmatic risk is considered very low. Performance and reliability metrics have consistently exceeded the standards set forth early on in the program's acquisition planning. The remaining risks fall under cost and schedule as the System Program Office assesses current and future acquisition strategies and contracts. Current contingency operations are driving an urgent need to increase and maintain healthy inventory levels. The ongoing struggle is communicating the warfighter need while balancing fiscal priorities set forth in the budget. As a result of the risks described above, varying probability distributions and risk bounds were used to model cost risk and uncertainty in the cost estimate.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	630	804	804
Procurement	88435	661305	469852
Total	89065	662109	470656

Quantity Notes

The end item unit of measure includes only the JDAM tail kits. Laser JDAM sensors are not included in total quantity.

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	613.8	0.0	0.0	7.9	0.0	0.0	0.0	0.0	621.7
Procurement	8370.1	1103.5	1148.9	340.3	394.7	353.0	197.2	0.0	11907.7
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	8983.9	1103.5	1148.9	348.2	394.7	353.0	197.2	0.0	12529.4
PB 2019 Total	8689.8	1169.3	408.4	348.3	394.7	353.1	0.0	0.0	11363.6
Delta	294.1	-65.8	740.5	-0.1	0.0	-0.1	197.2	0.0	1165.8

Funding Notes

FY 2022-FY 2024 does not include any Overseas Contingency Operations (OCO) funding.

FY 2017 RDT&E (3600) received a reprogramming increase of \$1.633M for Military Code (M-Code) integration.

FY 2018 Procurement (3011) received a reprogramming increase of \$275.0M that is included in this report.

FY 2019 RDT&E (3600) \$15.787M realigned to common M-Code budget line.

FY 2019 Procurement (3011) received a \$50.0M Congressional mark.

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	804	0	0	0	0	0	0	0	0	804
Production	0	351104	43594	40388	9665	12108	9246	3747	0	469852
PB 2020 Total	804	351104	43594	40388	9665	12108	9246	3747	0	470656
PB 2019 Total	804	342165	43594	13644	10065	11808	8946	0	0	431026
Delta	0	8939	0	26744	-400	300	300	3747	0	39630

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1993	--	--	--	--	--	--	23.2
1994	--	--	--	--	--	--	7.8
1995	--	--	--	--	--	--	23.0
1996	--	--	--	--	--	--	25.4
1997	--	--	--	--	--	--	22.1
1998	--	--	--	--	--	--	11.6
1999	--	--	--	--	--	--	6.1
2000	--	--	--	--	--	--	7.2
2001	--	--	--	--	--	--	23.0
2002	--	--	--	--	--	--	27.3
2003	--	--	--	--	--	--	15.5
2004	--	--	--	--	--	--	1.3
2005	--	--	--	--	--	--	0.5
2006	--	--	--	--	--	--	0.3
Subtotal	114	--	--	--	--	--	194.3

Annual Funding 1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 1995 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1993	--	--	--	--	--	--	23.8
1994	--	--	--	--	--	--	7.8
1995	--	--	--	--	--	--	22.7
1996	--	--	--	--	--	--	24.7
1997	--	--	--	--	--	--	21.2
1998	--	--	--	--	--	--	11.0
1999	--	--	--	--	--	--	5.7
2000	--	--	--	--	--	--	6.7
2001	--	--	--	--	--	--	21.0
2002	--	--	--	--	--	--	24.7
2003	--	--	--	--	--	--	13.8
2004	--	--	--	--	--	--	1.1
2005	--	--	--	--	--	--	0.4
2006	--	--	--	--	--	--	0.2
Subtotal	114	--	--	--	--	--	184.8

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
1993	--	--	--	--	--	--	21.5
1994	--	--	--	--	--	--	61.9
1995	--	--	--	--	--	--	62.9
1996	--	--	--	--	--	--	76.4
1997	--	--	--	--	--	--	32.7
1998	--	--	--	--	--	--	21.1
1999	--	--	--	--	--	--	28.7
2000	--	--	--	--	--	--	11.3
2001	--	--	--	--	--	--	9.7
2002	--	--	--	--	--	--	16.5
2003	--	--	--	--	--	--	17.0
2004	--	--	--	--	--	--	36.0
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	7.3
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	2.5
2015	--	--	--	--	--	--	2.5
2016	--	--	--	--	--	--	--
2017	--	--	--	--	--	--	11.5
2018	--	--	--	--	--	--	--
2019	--	--	--	--	--	--	--
2020	--	--	--	--	--	--	--
2021	--	--	--	--	--	--	7.9
Subtotal	690	--	--	--	--	--	427.4

Annual Funding							
3600 RDT&E Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 1995 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1993	--	--	--	--	--	--	21.9
1994	--	--	--	--	--	--	62.1
1995	--	--	--	--	--	--	62.0
1996	--	--	--	--	--	--	73.9
1997	--	--	--	--	--	--	31.2
1998	--	--	--	--	--	--	20.0
1999	--	--	--	--	--	--	26.9
2000	--	--	--	--	--	--	10.5
2001	--	--	--	--	--	--	8.8
2002	--	--	--	--	--	--	14.9
2003	--	--	--	--	--	--	15.1
2004	--	--	--	--	--	--	31.3
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	5.8
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	1.8
2015	--	--	--	--	--	--	1.8
2016	--	--	--	--	--	--	--
2017	--	--	--	--	--	--	7.9
2018	--	--	--	--	--	--	--
2019	--	--	--	--	--	--	--
2020	--	--	--	--	--	--	--
2021	--	--	--	--	--	--	5.0
Subtotal	690	--	--	--	--	--	400.9

Annual Funding							
1508 Procurement Procurement of Ammunition, Navy and Marine Corps							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1998	547	10.0	--	--	10.0	10.9	20.9
1999	745	14.6	--	--	14.6	20.6	35.2
2000	916	19.3	--	--	19.3	15.7	35.0
2001	2325	50.2	--	--	50.2	15.4	65.6
2002	14551	292.4	--	--	292.4	10.1	302.5
2003	12280	242.4	--	--	242.4	8.5	250.9
2004	12422	243.7	--	--	243.7	8.2	251.9
2005	6876	142.5	--	--	142.5	8.6	151.1
2006	3288	72.5	--	--	72.5	9.0	81.5
2007	3324	73.9	--	--	73.9	12.7	86.6
2008	1422	35.5	--	--	35.5	7.1	42.6
2009	560	13.3	--	--	13.3	5.2	18.5
2010	--	--	--	--	--	2.0	2.0
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	--
2014	1137	23.8	--	--	23.8	--	23.8
2015	876	18.7	--	--	18.7	--	18.7
2016	1912	40.0	--	--	40.0	--	40.0
2017	5246	110.4	--	--	110.4	--	110.4
2018	7758	162.6	--	--	162.6	--	162.6
2019	7594	180.9	--	--	180.9	--	180.9
2020	3388	82.7	--	--	82.7	--	82.7
2021	2865	72.3	--	--	72.3	--	72.3
2022	3108	79.8	--	--	79.8	--	79.8
2023	3246	84.9	--	--	84.9	--	84.9
2024	3247	86.6	--	--	86.6	--	86.6
Subtotal	99633	2153.0	--	--	2153.0	134.0	2287.0

Annual Funding								
1508 Procurement Procurement of Ammunition, Navy and Marine Corps								
Fiscal Year	Quantity	BY 1995 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
1998	547	9.4	--	--	9.4	10.2	19.6	
1999	745	13.5	--	--	13.5	19.1	32.6	
2000	916	17.6	--	--	17.6	14.4	32.0	
2001	2325	45.3	--	--	45.3	13.9	59.2	
2002	14551	261.2	--	--	261.2	9.0	270.2	
2003	12280	211.7	--	--	211.7	7.4	219.1	
2004	12422	207.3	--	--	207.3	7.0	214.3	
2005	6876	117.8	--	--	117.8	7.1	124.9	
2006	3288	58.5	--	--	58.5	7.2	65.7	
2007	3324	58.2	--	--	58.2	10.1	68.3	
2008	1422	27.6	--	--	27.6	5.5	33.1	
2009	560	10.2	--	--	10.2	4.0	14.2	
2010	--	--	--	--	--	1.5	1.5	
2011	--	--	--	--	--	--	--	
2012	--	--	--	--	--	--	--	
2013	--	--	--	--	--	--	--	
2014	1137	16.8	--	--	16.8	--	16.8	
2015	876	13.0	--	--	13.0	--	13.0	
2016	1912	27.2	--	--	27.2	--	27.2	
2017	5246	73.7	--	--	73.7	--	73.7	
2018	7758	106.3	--	--	106.3	--	106.3	
2019	7594	116.0	--	--	116.0	--	116.0	
2020	3388	52.0	--	--	52.0	--	52.0	
2021	2865	44.6	--	--	44.6	--	44.6	
2022	3108	48.2	--	--	48.2	--	48.2	
2023	3246	50.3	--	--	50.3	--	50.3	
2024	3247	50.3	--	--	50.3	--	50.3	
Subtotal	99633	1636.7	--	--	1636.7	116.4	1753.1	

Annual Funding								
3011 Procurement Procurement of Ammunition, 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	
1997	937	16.6	--	--	16.6	6.4	23.0	
1998	1828	33.5	--	--	33.5	5.7	39.2	
1999	3778	72.4	--	--	72.4	7.1	79.5	
2000	8725	180.1	--	--	180.1	9.1	189.2	
2001	8904	189.9	--	--	189.9	13.6	203.5	
2002	14392	285.9	--	--	285.9	14.5	300.4	
2003	23420	458.5	--	--	458.5	18.6	477.1	
2004	20476	404.2	--	--	404.2	20.3	424.5	
2005	22880	491.8	--	--	491.8	22.6	514.4	
2006	8205	200.8	--	--	200.8	24.4	225.2	
2007	7261	163.6	17.1	--	180.7	13.4	194.1	
2008	4319	102.1	--	--	102.1	22.0	124.1	
2009	6340	149.1	--	--	149.1	16.9	166.0	
2010	7488	169.5	7.6	--	177.1	21.3	198.4	
2011	14551	350.6	6.9	--	357.5	15.9	373.4	
2012	4637	111.5	--	--	111.5	15.7	127.2	
2013	4728	113.8	19.9	--	133.7	10.9	144.6	
2014	8584	191.5	47.0	--	238.5	12.0	250.5	
2015	9980	218.8	34.4	--	253.2	8.4	261.6	
2016	29439	636.6	29.7	6.0	672.3	14.9	687.2	
2017	28941	635.7	32.9	--	668.6	13.5	682.1	
2018	35106	849.0	104.0	--	953.0	32.1	985.1	
2019	36000	839.7	43.7	--	883.4	39.2	922.6	
2020	37000	920.8	127.0	--	1047.8	18.4	1066.2	
2021	6800	169.3	65.8	--	235.1	32.9	268.0	
2022	9000	227.5	67.6	--	295.1	19.8	314.9	
2023	6000	163.5	69.4	--	232.9	35.2	268.1	
2024	500	18.0	71.2	--	89.2	21.4	110.6	
Subtotal	370219	8364.3	744.2	6.0	9114.5	506.2	9620.7	

Annual Funding							
3011 Procurement Procurement of Ammunition, Air Force							
Fiscal Year	Quantity	BY 1995 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	937	15.7	--	--	15.7	6.0	21.7
1998	1828	31.3	--	--	31.3	5.4	36.7
1999	3778	66.8	--	--	66.8	6.5	73.3
2000	8725	164.3	--	--	164.3	8.3	172.6
2001	8904	171.2	--	--	171.2	12.2	183.4
2002	14392	253.2	--	--	253.2	12.8	266.0
2003	23420	397.6	--	--	397.6	16.2	413.8
2004	20476	342.1	--	--	342.1	17.2	359.3
2005	22880	404.9	--	--	404.9	18.6	423.5
2006	8205	161.0	--	--	161.0	19.6	180.6
2007	7261	128.5	13.5	--	142.0	10.5	152.5
2008	4319	79.1	--	--	79.1	17.0	96.1
2009	6340	114.0	--	--	114.0	12.9	126.9
2010	7488	127.3	5.7	--	133.0	15.9	148.9
2011	14551	258.9	5.1	--	264.0	11.8	275.8
2012	4637	80.9	--	--	80.9	11.4	92.3
2013	4728	81.1	14.1	--	95.2	7.8	103.0
2014	8584	134.5	33.1	--	167.6	8.4	176.0
2015	9980	151.2	23.8	--	175.0	5.8	180.8
2016	29439	431.0	20.0	4.1	455.1	10.1	465.2
2017	28941	421.9	21.8	--	443.7	9.0	452.7
2018	35106	552.4	67.6	--	620.0	20.9	640.9
2019	36000	535.6	27.9	--	563.5	25.0	588.5
2020	37000	575.8	79.4	--	655.2	11.5	666.7
2021	6800	103.8	40.3	--	144.1	20.2	164.3
2022	9000	136.7	40.7	--	177.4	11.9	189.3
2023	6000	96.3	41.0	--	137.3	20.7	158.0
2024	500	10.4	41.1	--	51.5	12.4	63.9
Subtotal	370219	6027.5	475.1	4.1	6506.7	366.0	6872.7

LASER JDAM (NON END ITEM RECURRING FLYAWAY) NOTES:

- FY 2018 Non End Item Related Recurring Flyaway costs include 8,182 Laser JDAM kits (4,927 actual, 3,255 projected)
- FY 2019 Non End Item Related Recurring Flyaway costs include 3,500 Laser JDAM kits (projected)
- FY 2020 Non End Item Related Recurring Flyaway costs include 10,000 Laser JDAM kits per year (projected)
- FY 2021-FY 2024 Non End Item Related Recurring Flyaway costs include 5,000 Laser JDAM kits per year (projected)

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	9/20/1995	1/21/2000
Approved Quantity	425	15998
Reference	Milestone II ADM	LRIP 4 ADM
Start Year	1997	1997
End Year	1998	2000

Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost \$M	Description
Belgium	3/30/2018	396	8.3	JDAM Kits
Chile	3/30/2018	44	1.0	JDAM Kits
Indonesia	3/30/2018	102	2.2	JDAM Kits
Israel	3/30/2018	6	0.1	JDAM Kits
Japan	3/30/2018	13	0.3	JDAM Kits
Korea	3/30/2018	1132	28.3	JDAM Kits
Netherlands	3/30/2018	140	3.1	JDAM Kits
Qatar	3/30/2018	504	10.8	JDAM Kits
Singapore	3/30/2018	7	0.2	JDAM Kits
Turkey	3/30/2018	658	13.7	JDAM Kits
Belgium	2/28/2017	36	0.8	JDAM kits
Jordan	2/28/2017	198	4.1	JDAM kits
Korea	2/28/2017	275	6.4	JDAM kits
NATO	2/28/2017	420	8.9	JDAM kits purchased for NATO Single Procurement Agency (NSPA)
Romania	2/28/2017	180	3.7	JDAM kits
Singapore	2/28/2017	5	0.1	JDAM kits
Spain	2/28/2017	15	0.3	JDAM kits
Turkey	2/28/2017	100	2.1	JDAM kits
United Arab Emirates	2/28/2017	1500	32.8	JDAM kits
Belgium	5/31/2016	227	4.7	JDAM Kits
Denmark	5/31/2016	150	3.1	JDAM Kits
Finland	5/31/2016	8	0.2	JDAM Kits
Japan	5/31/2016	6	0.1	JDAM Kits
Korea	5/31/2016	15	0.3	JDAM Kits
Kuwait	5/31/2016	51	1.1	JDAM Kits
Morocco	5/31/2016	70	1.4	JDAM Kits
Oman	5/31/2016	108	2.2	JDAM Kits
Saudi Arabia	5/31/2016	2645	56.2	JDAM Kits
Turkey	5/31/2016	900	19.6	JDAM Kits
United Arab Emirates	5/31/2016	3504	87.9	JDAM Kits
Belgium	11/20/2015	60	1.3	JDAM Kits
Canada	11/20/2015	350	7.9	JDAM Kits
Denmark	11/20/2015	50	1.2	JDAM Kits
Finland	11/20/2015	18	0.4	JDAM Kits
Israel	11/20/2015	100	2.4	JDAM Kits
Netherlands	11/20/2015	300	6.6	JDAM Kits
Singapore	11/20/2015	917	22.0	JDAM Kits
Taiwan	11/20/2015	1	0.0	JDAM Kit
Turkey	11/20/2015	400	9.4	JDAM Kits
Israel	10/31/2014	3000	65.5	JDAM kits
Norway	10/31/2014	238	4.9	JDAM kits
Morocco	10/30/2014	20	0.4	JDAM kits

United Arab Emirates	10/30/2014	3600	74.4	JDAM kits
Oman	7/1/2013		0.9	Fuzes
Belgium	5/15/2013		0.1	Fuzes
Norway	3/8/2013		2.8	Fuzes
Israel	3/7/2013	3113	88.8	JDAM Kits and Support
Korea	3/7/2013	210	7.8	JDAM Kits, Fuzes
Japan	3/1/2013	68	4.2	JDAM Kits
Poland	1/31/2013		1.1	JDAM Manpower
Turkey	12/19/2012	300	13.4	JDAM Kits, Fuzes
Korea	11/27/2012	140	5.1	JDAM Kits, Fuzes
Israel	11/21/2012	1500	40.8	JDAM Kits
Finland	7/15/2012		0.2	Repair and Return, Spares, Support
Korea	5/1/2012	106	3.6	JDAM Kits
Iraq	4/19/2012	358	2.0	Fuzes
Canada	4/17/2012	0	0.2	Fuzes
Saudi Arabia	2/22/2012		5.4	Repair and Return, Spares, Support
Saudi Arabia	2/22/2012	0	61.4	Engineering Support
Saudi Arabia	2/11/2012	600	154.5	JDAM Kits, Precision Laser Guidance Sets, Fuzes
Japan	10/12/2011	8	0.7	JDAM Kits
Japan	10/12/2011	16	0.7	JDAM Kits
Belgium	9/8/2011	180	5.4	JDAM Kits, Fuzes
Malaysia	8/23/2011	0	1.8	JDAM Spares, Test Assets
Canada	8/11/2011	533	15.9	JDAM Kits, Integration Support
Japan	7/15/2011	0	2.7	Fuzes
Chile	6/10/2011	210	8.0	JDAM Kits, Fuzes
Norway	4/26/2011	254	9.5	JDAM Kits
Denmark	4/11/2011	210	8.9	JDAM Kits
Belgium	2/2/2011	30	0.8	Spares
Brazil	1/28/2011	0	0.3	Fuzes
Morocco	9/8/2010	10	6.0	JDAM Kits
Japan	2/9/2010	96	4.9	JDAM Kits, Fuzes
Japan	1/29/2010	31	1.7	JDAM Kits, Fuzes
Singapore	1/27/2010	670	35.5	JDAM Kits
Israel	1/22/2010	150	2.1	Precision Laser Guidance Set
Israel	1/12/2010	150	3.5	JDAM Kits
Netherlands	12/4/2009	0	2.8	Fuzes
South Korea	11/30/2009	0	3.8	JDAM Integration on F-16
Malaysia	9/28/2009	50	5.8	JDAM Kits
Norway	6/10/2009	30	5.2	JDAM Kits, Support
Kuwait	3/31/2009	51	5.9	JDAM Kits, Support
United Arab Emirates	3/24/2009	0	1.1	Repair and Return, Spares, Support
Japan	3/12/2009	120	9.2	JDAM Kits
Finland	2/25/2009	96	7.0	JDAM Kits
Singapore	2/11/2009	35	4.1	JDAM Kits
Japan	2/3/2009	36	3.1	JDAM Kits, Fuzes
Oman	2/2/2009	0	0.8	Repair and Return, Spares, Support
Israel	1/12/2009	500	14.9	JDAM Kits
Israel	1/12/2009	2950	71.6	JDAM Kits
South Korea	12/29/2008		0.4	Fuzes

South Korea	12/16/2008	4	0.5	JDAM Kits
Germany	10/28/2008		0.2	Fuzes
South Korea	9/3/2008		0.2	Fuzes
Israel	7/21/2008		0.6	Engineering Support
Saudi Arabia	7/2/2008	900	44.2	JDAM Kits, Support
South Korea	3/11/2008		2.2	Fuzes
Japan	3/7/2008	36	2.1	JDAM Kits, Fuzes
United Arab Emirates	2/21/2008	300	70.6	JDAM Kits
South Korea	2/19/2008		4.3	Fuzes, Global Positioning System (GPS) Security
South Korea	12/28/2007		0.4	Fuzes
South Korea	12/28/2007		0.4	Fuzes
Australia	12/11/2007		2.6	Engineering Support
Greece	11/20/2007	100	21.9	JDAM Kits, Integration Support
Netherlands	10/24/2007		2.8	Fuzes
Israel	10/2/2007	1000	28.0	JDAM Kits
Israel	9/26/2007	650	17.3	JDAM Kits
Israel	7/13/2007	300	8.3	JDAM Kits
Turkey	5/29/2007		0.4	Fuzes
Israel	3/5/2007	500	12.9	JDAM Kits
Japan	12/18/2006	42	1.8	JDAM Kits
Spain	12/14/2006	40	2.5	JDAM Kits
Pakistan	9/30/2006	500	23.6	JDAM Kits
Israel	7/25/2006		0.1	Engineering Support
Japan	3/27/2006	44	3.5	JDAM Kits
Japan	3/17/2006		0.1	Engineering Support
Turkey	12/28/2005		6.9	Integration
Turkey	12/28/2005	398	9.9	JDAM Kits
Greece	12/13/2005		2.3	Integration Support
Netherlands	10/7/2005	56	1.7	JDAM Kits
Turkey	4/26/2005		4.7	Integration Support
Australia	4/5/2005		0.3	Integration Support
Netherlands	3/1/2005	360	8.7	JDAM Kits, Support
Japan	1/25/2005	27	8.5	JDAM Kits, Integration, Test Assets
Belgium	12/22/2004	300	7.9	JDAM Kits
Israel	8/16/2004		17.6	F-15 Integration
Israel	7/14/2004	840	18.1	JDAM Kits, Integration
Portugal	4/15/2004	50	3.7	JDAM Kits, Support
Netherlands	2/23/2004	350	13.8	JDAM Kits, Support
Oman	2/15/2004	20	0.5	JDAM Kits
Israel	7/3/2003	1000	21.5	JDAM Kits
Poland	4/18/2003	272	10.6	JDAM Kits, Integration, Test Assets
Denmark	12/20/2002	274	11.0	JDAM Kits, Support
United Arab Emirates	8/20/2002	300	9.0	JDAM Kits
South Korea	6/12/2002	14	1.1	JDAM Kits
Oman	5/2/2002	80	3.2	JDAM Kits
Belgium	2/11/2002		0.8	Fuzes
Chile	2/1/2002	12	3.0	JDAM Kits, Integration, Test Assets
Australia	11/28/2000		6.8	Fuzes

Australia	11/28/2000		3.2	Fuzes
United Arab Emirates	8/8/2000		1.3	Integration, Test Assets
Israel	2/9/2000	700	31.5	JDAM Kits, Integration

Notes**Acronyms and Abbreviations**

NSPA - NATO Single Procurement Agency
PLGS - Precision Laser Guided Set

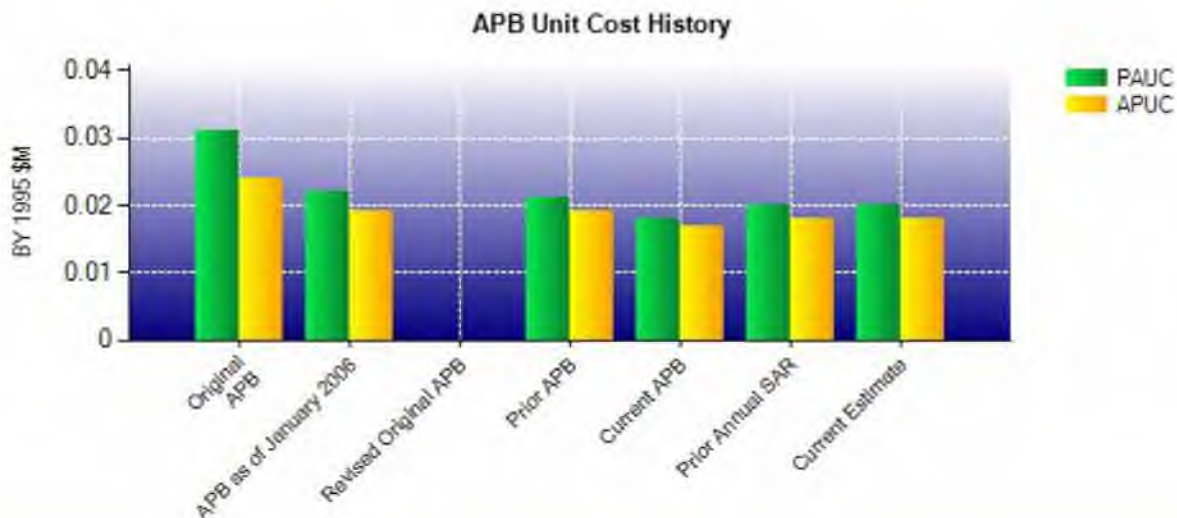
Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 1995 \$M	BY 1995 \$M	% Change
	Current UCR Baseline (Apr 2018 APB)	Current Estimate (Dec 2018 SAR)	
Program Acquisition Unit Cost			
Cost	12091.3	9211.5	
Quantity	662109	470656	
Unit Cost	0.018	0.020	+11.11
Average Procurement Unit Cost			
Cost	11472.1	8625.8	
Quantity	661305	469852	
Unit Cost	0.017	0.018	+5.88

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 1995 \$M	BY 1995 \$M	% Change
	Original UCR Baseline (Sep 1995 APB)	Current Estimate (Dec 2018 SAR)	
Program Acquisition Unit Cost			
Cost	2720.4	9211.5	
Quantity	88126	470656	
Unit Cost	0.031	0.020	-35.48
Average Procurement Unit Cost			
Cost	2090.6	8625.8	
Quantity	87496	469852	
Unit Cost	0.024	0.018	-25.00



APB Unit Cost History					
Item	Date	BY 1995 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Sep 1995	0.031	0.024	0.038	0.033
APB as of January 2006	Oct 2002	0.022	0.019	0.025	0.023
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Jun 2015	0.021	0.019	0.026	0.024
Current APB	Apr 2018	0.018	0.017	0.026	0.025
Prior Annual SAR	Dec 2017	0.020	0.018	0.026	0.025
Current Estimate	Dec 2018	0.020	0.018	0.027	0.025

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.038	-0.002	-0.005	0.002	0.001	-0.005	0.000	0.000	-0.009	0.029

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.029	0.000	-0.004	-0.001	0.000	0.002	0.000	0.001	-0.002	0.027

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.033	-0.002	-0.003	0.002	0.000	-0.006	0.000	0.000	-0.009	0.024

Current SAR Baseline to Current Estimate (TY \$M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.024	0.000	-0.001	-0.001	0.000	0.002	0.000	0.001	0.001	0.025

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	Oct 1993	Oct 1993	Oct 1993	Oct 1993
Milestone II	Oct 1995	Sep 1995	Sep 1995	Sep 1995
Milestone III	Jul 1999	Nov 2000	Nov 2000	Mar 2001
IOC	Sep 1999	Sep 1999	Nov 2000	Feb 2001
Total Cost (TY \$M)	681.5	3392.3	2606.7	12529.4
Total Quantity	378	88126	89065	470656
PAUC	1.803	0.038	0.029	0.027

IOC of February 2001 is specifically for the F/A-18C/D.

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	517.3	2089.4	--	2606.7
Previous Changes				
Economic	+3.7	+55.0	--	+58.7
Quantity	--	+7724.7	--	+7724.7
Schedule	--	-206.1	--	-206.1
Engineering	+71.5	--	--	+71.5
Estimating	+43.4	+652.4	--	+695.8
Other	--	--	--	--
Support	--	+412.3	--	+412.3
Subtotal	+118.6	+8638.3	--	+8756.9
Current Changes				
Economic	+0.2	+45.3	--	+45.5
Quantity	--	+1078.2	--	+1078.2
Schedule	--	-185.8	--	-185.8
Engineering	--	+118.6	--	+118.6
Estimating	-14.4	+55.1	--	+40.7
Other	--	--	--	--
Support	--	+68.6	--	+68.6
Subtotal	-14.2	+1180.0	--	+1165.8
Total Changes	+104.4	+9818.3	--	+9922.7
CE - Cost Variance	621.7	11907.7	--	12529.4
CE - Cost & Funding	621.7	11907.7	--	12529.4

Summary BY 1995 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	490.3	1810.0	--	2300.3
Previous Changes				
Economic	--	--	--	--
Quantity	--	+5209.6	--	+5209.6
Schedule	--	-11.5	--	-11.5
Engineering	+49.9	--	--	+49.9
Estimating	+54.9	+605.1	--	+660.0
Other	--	--	--	--
Support	--	+305.4	--	+305.4
Subtotal	+104.8	+6108.6	--	+6213.4
Current Changes				
Economic	--	--	--	--
Quantity	--	+652.7	--	+652.7
Schedule	--	-92.0	--	-92.0
Engineering	--	+76.2	--	+76.2
Estimating	-9.4	+29.9	--	+20.5
Other	--	--	--	--
Support	--	+40.4	--	+40.4
Subtotal	-9.4	+707.2	--	+697.8
Total Changes	+95.4	+6815.8	--	+6911.2
CE - Cost Variance	585.7	8625.8	--	9211.5
CE - Cost & Funding	585.7	8625.8	--	9211.5

Previous Estimate: December 2017

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	+0.2
Revised estimate to reflect reprogramming increase for Military Code (M-Code) Application Specific Integrated Circuit (ASIC) contract award. (Estimating)	+1.1	+1.6
Revised estimate to reflect centralization of funding to Air Force level Military Code (M-Code) program office. (Estimating)	-10.4	-15.8
Adjustment for current and prior escalation. (Estimating)	-0.1	-0.2
RDT&E Subtotal	-9.4	-14.2

Procurement	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	+45.3
Quantity variance resulting from an increase of 5,844 tail kits from 93,789 to 99,633 (Navy). (Quantity)	+96.1	+164.1
Quantity variance resulting from an increase of 33,786 tail kits from 336,433 to 370,219 (Air Force). (Quantity)	+556.6	+914.1
Acceleration of procurement buy profile beginning in FY 2017 (Navy). (Schedule)	0.0	-4.2
Additional schedule variance resulting from the acceleration of procurement buy profile due to increased production capacity resulting in additional quantity discounts (Navy). (Schedule)	-28.6	-47.0
Acceleration of procurement buy profile beginning in FY 2018 (Air Force). (Schedule)	0.0	-31.6
Additional schedule variance resulting from the acceleration of procurement buy profile due to increased production capacity resulting in additional quantity discounts (Air Force). (Schedule)	-63.4	-103.0
Adjusted cost to account for capability enhancements for the Urgent Operational Need of Strategic Anti-Jam Beamforming Receiver (SABR-Y) tail kit. (Engineering)	+67.7	+105.4
Adjusted cost to account for changes in physical and functional configuration of Kit Munition Unit 557 (KMU-557) (Arming Generator Relocator Adapter (AGRA) implementation). (Engineering)	+8.5	+13.2
Adjustment for current and prior escalation. (Estimating)	-19.4	-29.5
Revised estimate to reflect to reflect application of out year inflationary guidance (Air Force). (Estimating)	+0.1	-0.3
Revised estimate to reflect Congressional mark to reduce Laser JDAM Quantity (Air Force). (Estimating)	-31.9	-50.0
Revised estimate to account for increased demand for Laser JDAM production. Laser JDAM is not the primary unit of measure, so this does not affect quantity variance (Air Force). (Estimating)	+81.1	+134.9
Adjustment for current and prior escalation. (Support)	-0.5	-1.0
Increase in Other Support for additional testing and integration activities for SABR-Y, AGRA, and Guided Bomb Unit 56 (GBU-56) (Air Force). (Support)	+40.9	+69.6
Procurement Subtotal	+707.2	+1180.0

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: JDAM Lot 20 Production Contract FY16
Contractor: Boeing
Contractor Location: 6200 JS McDonnell Blvd
 St Louis, MO 63134
Contract Number: FA8213-15-D-0002/3
Contract Type: Firm Fixed Price (FFP), Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 31, 2016
Definitization Date: May 31, 2016

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
325.7	N/A	15000	486.1	683.5	22644	486.1	486.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to additional quantities added to the contract and changing from FFP to FPIF.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP/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 Darlene Costello, Principal Deputy Assistant Secretary of the Air Force (Acquisition and Logistics) on December 20, 2017.

Notes

Data includes Air Force and Navy only. Foreign Military Sales data is not included in the contract price or quantity.

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

Contract Identification

Appropriation: Procurement
Contract Name: JDAM Lot 21 Production Contract FY17
Contractor: Boeing
Contractor Location: 6200 JS McDonnell Blvd
 St Louis, MO 63134
Contract Number: FA8213-17-F-1001
Contract Type: Firm Fixed Price (FFP), Fixed Price Incentive(Firm Target) (FPIF)
Award Date: February 28, 2017
Definitization Date: February 28, 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
731.8	N/A	33650	927.0	950.7	42271	927.0	927.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modification to maximize production capacity to 45,000 for all customers.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP/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 Darlene Costello, Principal Deputy Assistant Secretary of the Air Force (Acquisition and Logistics) on December 20, 2017.

Notes

Data includes Air Force and Navy only. Foreign Military Sales data is not included in the contract price or quantity.

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

Contract Identification

Appropriation: Procurement
Contract Name: JDAM Lot 22 Production Contract FY18
Contractor: Boeing
Contractor Location: 6200 JS McDonnell Blvd
 St Louis, MO 63134
Contract Number: FA8213-18-F-1001
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 30, 2018
Definitization Date: March 30, 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
919.9	994.0	41998	919.9	994.0	41998	919.9	919.9

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 Darlene Costello, Principal Deputy Assistant Secretary of the Air Force (Acquisition and Logistics) on December 20, 2017.

Notes

This is the first time this contract is being reported.

Data includes Air Force and Navy only. Foreign Military Sales data is not included in the contract price or quantity.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	804	804	804	100.00%
Production	323063	323063	469852	68.76%
Total Program Quantity Delivered	323867	323867	470656	68.81%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	12529.4	Years Appropriated	27
Expended to Date	7832.9	Percent Years Appropriated	84.38%
Percent Expended	62.52%	Appropriated to Date	10087.4
Total Funding Years	32	Percent Appropriated	80.51%

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

Notes

Deliveries and Expenditures include both U.S. Air Force and U.S. Navy.

This report does not include quantities or costs paid for with Defense Emergency Response Funds (DERF). DERF funds acquired 6,348 U.S. Air Force Tail Kits and 7,890 U.S. Navy Tail Kits.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	August 28, 2014
Source of Estimate:	POE
Quantity to Sustain:	470656
Unit of Measure:	Total Quantity
Service Life per Unit:	35.00 Years
Fiscal Years in Service:	FY 1998 - FY 2049

The JDAM O&S cost estimate was based on the Joint Munitions Operations & Support Model which was tailored to reflect specific JDAM program attributes. This model estimated Air Force and Navy O&S costs for the JDAM tail kits only (excludes other components that make up a complete weapon such as the bomb body and fuze). The ground rules used in the O&S cost estimate are as follows: The total JDAM inventory that had been expended was 90,513 tail kits. JDAM uses a 20 year extended warranty to cover all tail kit repairs except for government induced failures. In the model, one half of a percent of the total JDAM failures were assumed to be induced out-of-warranty failures. The base year of the estimate was FY 2015 (all sunk costs from FY 1998 to FY 2014 are excluded from the estimate). The estimate included calculations for 35 years (FY 2015 to FY 2049) to cover unwarranted failures for 15 years after the warranty period ended. The fiscal years in service is stated to end in FY 2049; however, the actual program complete date is indefinite as long as there is continued demand for JDAM. This end date will not match the end date of the production program due to the indefinite nature of the program.

Sustainment Strategy

The JDAM system support strategy is a 20-year warranty that includes both the tail kit and storage container; bomb bodies and fuzes are not included. Boeing is the Source of Repair under the warranty. Non-warranty repairs and sustaining engineering support are covered under separate technical support contracts with Boeing.

Antecedent Information

No Antecedent

Cost Element	Annual O&S Costs BY1995 \$M	
	JDAM Average Annual Cost Per Total Quantity	No Antecedent (Antecedent)
Unit-Level Manpower	0.647	--
Unit Operations	15.671	--
Maintenance	0.001	--
Sustaining Support	3.562	--
Continuing System Improvements	--	--
Indirect Support	0.477	--
Other	--	--
Total	20.358	--

Item	Total O&S Cost \$M			
	JDAM			No Antecedent (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	712.5	783.8	712.5	N/A
Then Year	1494.9	N/A	1494.9	0.0

Equation to Translate Annual Cost to Total Cost

Total O&S Cost = Average Annual Cost x Assumed Life in Years = \$20.358M x 35 years = \$712.5M (BY 1995\$)

O&S Cost Variance		
Category	BY 1995 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2017 SAR	712.5	
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	0.0	
Total Changes	0.0	
Current Estimate	712.5	

Disposal Estimate Details

Date of Estimate: August 28, 2014
Source of Estimate: POE
Disposal/Demilitarization Total Cost (BY 1995 \$M): 51.3