

UNCLASSIFIED

**Department of Defense
Fiscal Year (FY) 2020 Budget Estimates**

March 2019



Air Force

Justification Book Volume 1 of 1

Procurement of Ammunition, Air Force

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Air Force • Budget Estimates FY 2020 • Procurement

Volume 1 Table of Contents

Introduction and Explanation of Contents.....Volume 1 - iii
Comptroller Exhibit P-1.....Volume 1 - v
Line Item Table of Contents (by Appropriation then Line Number)..... Volume 1 - xv
Line Item Table of Contents (Alphabetically by Line Item Title)..... Volume 1 - xvii
Acronyms..... Volume 1 - xix
Exhibit P-40s..... Volume 1 - 1

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Appropriation Language Fiscal Year (FY) 2020 President's Budget Procurement of Ammunition, Air Force

For construction, procurement, production, and modification of ammunition and accessories therefor; specialized equipment and training devices; expansion of public and private plants, including ammunition facilities authorized by section 2854 of title 10, United States Code, and the land necessary therefor, for the foregoing purposes, and such lands and interests therein, for the foregoing purposes, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway; other expenses necessary for the foregoing purposes, and overseas contingency operations, \$2,607,394,000 to remain available for obligation until September 30, 2022.

FY 2020 Overseas Contingency Operations funding can be separated into the following categories:

- OCO for Direct War Costs (\$572,621,000): Direct War costs are those combat or direct combat support costs that will not continue to be expended once combat operations end at major contingency locations.
- OCO for Enduring Requirements (\$366,812,000): OCO for Enduring Requirements are enduring in-theater and in-CONUS costs that will likely remain after combat operations cease, and have previously been funded in OCO.
- OCO for Base Requirements (\$1,667,961,000): OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

19 Feb 2019

Appropriation: Procurement of Ammunition, Air Force

Budget Activity -----	FY 2018 (Base + OCO) -----	FY 2019 Base Enacted -----	FY 2019 OCO Enacted -----	FY 2019 Total Enacted -----
01. Ammunition	2,214,875	1,421,354	1,363,016	2,784,370
02. Weapons	38,611	64,502	8,500	73,002
Total Procurement of Ammunition, Air Force	2,253,486	1,485,856	1,371,516	2,857,372

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

19 Feb 2019

Appropriation: Procurement of Ammunition, Air Force

Budget Activity -----	FY 2020 Base -----	FY 2020 OCO for Base Requirements -----	FY 2020 OCO for Direct War and Enduring Costs -----	FY 2020 Total OCO -----
01. Ammunition		1,630,465	933,338	2,563,803
02. Weapons		37,496	6,095	43,591
Total Procurement of Ammunition, Air Force		1,667,961	939,433	2,607,394

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

19 Feb 2019

Appropriation: Procurement of Ammunition, Air Force

Budget Activity -----	FY 2020 Total (Base + OCO) -----
01. Ammunition	2,563,803
02. Weapons	43,591
Total Procurement of Ammunition, Air Force	2,607,394

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
 FY 2020 President's Budget
 Exhibit P-1 FY 2020 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

19 Feb 2019

Appropriation: 3011F Procurement of Ammunition, Air Force

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO)		FY 2019 Base Enacted		FY 2019 OCO Enacted		FY 2019 Total Enacted		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Ammunition											
Rockets											
1	Rockets	A		274,078		271,611				271,611	U
Cartridges											
2	Cartridges	A		205,853		158,640		29,587		188,227	U
Bombs											
3	Practice Bombs	A		28,509		20,876				20,876	U
4	General Purpose Bombs	A		341,501		259,308		551,862		811,170	U
5	Massive Ordnance Penetrator (MOP)			38,382		38,111				38,111	U
6	Joint Direct Attack Munition	A	35106	985,102	6130	234,198	29870	688,451	36000	922,649	U
7	B61		30	(63,668)	250	(110,731)			250	(110,731)	U
	Less: Advance Procurement (PY)					(-11,239)				(-11,239)	U
				63,668		99,492				99,492	
8	B61										
	Advance Procurement (CY)			11,239		52,731				52,731	U
	C (FY 2018 for FY 2019) (M)			(11,239)							
	C (FY 2019 for FY 2020) (M)					(52,731)				(52,731)	
Other Items											
9	Cad/Pad	A		64,162		51,455				51,455	U
10	Explosive Ordnance Disposal (EOD)	A		5,921		6,038				6,038	U
11	Spares And Repair Parts	A		678							U

P-120PB: FY 2020 President's Budget (Published Version), as of February 19, 2019 at 15:31:27

Department of the Air Force
 FY 2020 President's Budget
 Exhibit P-1 FY 2020 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

19 Feb 2019

Appropriation: 3011F Procurement of Ammunition, Air Force

Line No	Item Nomenclature	Ident Code	FY 2020 Base		FY 2020 OCO for Base Requirements		FY 2020 OCO for Direct War and Enduring Costs		FY 2020 Total OCO		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Ammunition											
Rockets											
1	Rockets	A			133,268		84,960		218,228		U
Cartridges											
2	Cartridges	A			140,449		52,642		193,091		U
Bombs											
3	Practice Bombs	A			29,313				29,313		U
4	General Purpose Bombs	A			85,885		545,309		631,194		U
5	Massive Ordnance Penetrator (MOP)										U
6	Joint Direct Attack Munition	A			37000	1,066,224			37000	1,066,224	U
7	B61				533	(133,504)			533	(133,504)	U
	Less: Advance Procurement (PY)					(-52,731)				(-52,731)	U
						80,773				80,773	
8	B61 Advance Procurement (CY) C (FY 2018 for FY 2019) (M) C (FY 2019 for FY 2020) (M)										U
Other Items											
9	Cad/Pad	A			47,069				47,069		U
10	Explosive Ordnance Disposal (EOD)	A			6,133				6,133		U
11	Spares And Repair Parts	A			533				533		U

Department of the Air Force
 FY 2020 President's Budget
 Exhibit P-1 FY 2020 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

19 Feb 2019

Appropriation: 3011F Procurement of Ammunition, Air Force

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO)		S e c
			Quantity	Cost	
Budget Activity 01: Ammunition					
Rockets					
1	Rockets	A		218,228	U
Cartridges					
2	Cartridges	A		193,091	U
Bombs					
3	Practice Bombs	A		29,313	U
4	General Purpose Bombs	A		631,194	U
5	Massive Ordnance Penetrator (MOP)				U
6	Joint Direct Attack Munition	A	37000	1,066,224	U
7	B61		533	(133,504)	U
	Less: Advance Procurement (PY)			(-52,731)	U
				80,773	
8	B61 Advance Procurement (CY)				U
	C (FY 2018 for FY 2019) (M)				
	C (FY 2019 for FY 2020) (M)				
Other Items					
9	Cad/Pad	A		47,069	U
10	Explosive Ordnance Disposal (EOD)	A		6,133	U
11	Spares And Repair Parts	A		533	U

Department of the Air Force
 FY 2020 President's Budget
 Exhibit P-1 FY 2020 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

19 Feb 2019

Appropriation: 3011F Procurement of Ammunition, Air Force

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO)		FY 2019 Base Enacted		FY 2019 OCO Enacted		FY 2019 Total Enacted		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
12	Modifications	A		1,409		847				847	U
13	Items Less Than \$5,000,000	A		5,047		3,070				3,070	U
14	Cancelled Account Adjustment			1,476							U
Flares											
15	Flares	A		127,481		125,286		12,116		137,402	U
Fuzes											
16	Fuzes	A		60,369		99,691		81,000		180,691	U
Total Ammunition				2,214,875		1,421,354		1,363,016		2,784,370	
Budget Activity 02: Weapons											

Small Arms											
17	Small Arms	A		38,611		64,502		8,500		73,002	U
Total Weapons				38,611		64,502		8,500		73,002	
Total Procurement of Ammunition, Air Force				2,253,486		1,485,856		1,371,516		2,857,372	

Department of the Air Force
 FY 2020 President's Budget
 Exhibit P-1 FY 2020 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

19 Feb 2019

Appropriation: 3011F Procurement of Ammunition, Air Force

Line No	Item Nomenclature	Ident Code	FY 2020 Base		FY 2020 OCO for Base Requirements		FY 2020 OCO for Direct War and Enduring Costs		FY 2020 Total OCO		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
12	Modifications	A			1,291				1,291		U
13	Items Less Than \$5,000,000	A			1,677				1,677		U
14	Cancelled Account Adjustment										U
Flares											
15	Flares	A			36,116		93,272		129,388		U
Fuzes											
16	Fuzes	A			1,734		157,155		158,889		U
Total Ammunition					1,630,465		933,338		2,563,803		
Budget Activity 02: Weapons											

Small Arms											
17	Small Arms	A			37,496		6,095		43,591		U
Total Weapons					37,496		6,095		43,591		
Total Procurement of Ammunition, Air Force					1,667,961		939,433		2,607,394		

Department of the Air Force
 FY 2020 President's Budget
 Exhibit P-1 FY 2020 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

19 Feb 2019

Appropriation: 3011F Procurement of Ammunition, Air Force

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO)		S e c -
			Quantity	Cost	
12	Modifications	A		1,291	U
13	Items Less Than \$5,000,000	A		1,677	U
14	Cancelled Account Adjustment				U
Flares					
15	Flares	A		129,388	U
Fuzes					
16	Fuzes	A		158,889	U
Total Ammunition				2,563,803	
Budget Activity 02: Weapons					

Small Arms					
17	Small Arms	A		43,591	U
Total Weapons				43,591	
Total Procurement of Ammunition, Air Force				2,607,394	

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Air Force • Budget Estimates FY 2020 • Procurement

Line Item Table of Contents (by Appropriation then Line Number)

Appropriation 3011F: Procurement of Ammunition, Air Force

Line #	BA	BSA	Line Item Number	Line Item Title	Page
1	01	11	351010	Rockets.....	Volume 1 - 1
2	01	12	352010	Cartridges.....	Volume 1 - 9
3	01	13	353010	Practice Bombs.....	Volume 1 - 39
4	01	13	353020	General Purpose Bombs.....	Volume 1 - 45
5	01	13	353190	Massive Ordnance Penetrator (MOP).....	Volume 1 - 67
6	01	13	353620	Joint Direct Attack Munition.....	Volume 1 - 71
7	01	13	354040	B61.....	Volume 1 - 81
8	01	13	354040	B61, Advance Procurement.....	Volume 1 - 91
9	01	15	355100	Cad/Pad.....	Volume 1 - 95
10	01	15	355450	Explosive Ordnance Disposal (EOD).....	Volume 1 - 99
11	01	15	355900	Spares And Repair Parts.....	Volume 1 - 103
12	01	15	355970	Modifications.....	Volume 1 - 105
13	01	15	355990	Items Less Than \$5,000,000.....	Volume 1 - 107
15	01	16	356010	Flares.....	Volume 1 - 109
16	01	18	356120	Fuzes.....	Volume 1 - 125

UNCLASSIFIED

UNCLASSIFIED

Air Force • Budget Estimates FY 2020 • Procurement

Appropriation 3011F: Procurement of Ammunition, Air Force

Line #	BA	BSA	Line Item Number	Line Item Title	Page
17	02	01	357010	Small Arms.....	Volume 1 - 135

UNCLASSIFIED

UNCLASSIFIED

Air Force • Budget Estimates FY 2020 • Procurement

Line Item Table of Contents (Alphabetically by Line Item Title)

Line Item Title	Line Item Number	Line #	BA	BSA	Page
B61	354040	7	01	13.....	Volume 1 - 81
B61, Advance Procurement	354040	8	01	13.....	Volume 1 - 91
Cad/Pad	355100	9	01	15.....	Volume 1 - 95
Cartridges	352010	2	01	12.....	Volume 1 - 9
Explosive Ordnance Disposal (EOD)	355450	10	01	15.....	Volume 1 - 99
Flares	356010	15	01	16.....	Volume 1 - 109
Fuzes	356120	16	01	18.....	Volume 1 - 125
General Purpose Bombs	353020	4	01	13.....	Volume 1 - 45
Items Less Than \$5,000,000	355990	13	01	15.....	Volume 1 - 107
Joint Direct Attack Munition	353620	6	01	13.....	Volume 1 - 71
Massive Ordnance Penetrator (MOP)	353190	5	01	13.....	Volume 1 - 67
Modifications	355970	12	01	15.....	Volume 1 - 105
Practice Bombs	353010	3	01	13.....	Volume 1 - 39
Rockets	351010	1	01	11.....	Volume 1 - 1
Small Arms	357010	17	02	01.....	Volume 1 - 135
Spares And Repair Parts	355900	11	01	15.....	Volume 1 - 103

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

ACRONYMS

GENERAL ACRONYMS

A&AS	- Advisory & Assistance Services
ABIDES	- Automated Budget Interactive Data Environment System
ACAT	- Acquisition Category
ACTD	- Advanced Concept Technology Demonstration
AGM	- Air-to-Ground Missile
AIM	- Air Intercept Missile
AIS	- Avionics Intermediate Shop
ACMI	- Aircraft Combat Maneuvering Instrumentation
AMRAAM	- Advanced Medium-Range Air-to-Air Missile
APPN	- Appropriation
ATD	- Advanced Technology Development
BA	- Budget Activity
BLSS	- Base Level Self-Sufficiency Spares
BY	- Budget Year
C3	- Command, Control, and Communication System
CFE	- Contractor Furnished Equipment
CONOPS	- Concept of Operation
CONUS	- Continental United States
CPMS	- Comprehensive Power Management System
CPT	- Cockpit Procedures Trainer
CRA	- Continuing Resolution Authority
CTS	- Countermeasures Test Set
CY	- Current Year
ECCM	- Electronic Counter Counter-Measures
ECM	- Electronic Counter Measures
ECO	- Engineering Change Orders
EOQ	- Economic Order Quantity
ECP	- Engineering Change Proposal
EPA	- Economic Price Adjustment
EW	- Electronic Warfare
EWASIP	- Electronic Warfare Avionics Integration Support Facility
FLIR	- Forward Looking Infra Red

UNCLASSIFIED

UNCLASSIFIED

FOT&E	- Follow-on Test and Evaluation
FOC	- Fully Operational Capability
FLTS	- Flight Line Test Set
FPIF	- Fixed Price Incentive Firm
FPIS	- Fixed Price Incentive Fee, Successive Targets
FY	- Fiscal Year
GANS	- Global Access Navigation & Safety
GATM	- Global Air Traffic Management
GFE	- Government Furnished Equipment
GFP	- Government Furnished Property
GPS	- Global Positioning System
GSE	- Ground Support Equipment
ICS	- Interim Contractor Support
IOC	- Initial Operating Capability
IPE	- Increased Performance Engine
JPALS	- Joint Precision Approach and Landing System
MAIS	- Major Automated Information System Program
MDAP	- Major Defense Acquisition Program
METS	- Mobile Electronic Test Stations
MYP	- Multiyear Procurement
MSIP	- Multi-Stage Improvement Program
NAVWAR	- Navigation Warfare
NMC Rate	- Not Mission Capable Rate
OPF	- Operational Flight Program
OT&E	- Operational Test and Evaluation
OWRM	- Other War Reserve Material
PAGEL	- Priced Aerospace Ground Equipment List
PB	- President's Budget
PGSE	- Peculiar Ground Support Equipment
PMA	- Program Management Administration
PMC	- Procurement Method Code
PNO	- Acquisition Program Number (MDAP Codes)
PR	- Purchase Request
PRCP	- Program Resource Collection Process
PTT	- Part Task Trainer
PY	- Prior Year

UNCLASSIFIED

UNCLASSIFIED

R&M	- Reliability and Maintainability
RAA	- Required Asset Availability
RDT&E	- Research, Development, Test and Evaluation
RWR	- Radar Warning Receiver
ROM	- Rough Order of Magnitude
SS	- Sole Source
SOF	- Special Operation Force
TAF	- Tactical Air Force
TCAS	- Traffic Collision Alert and Avoidance System
TEWS	- Tactical Electronic Warfare System
TISS	- TEWS Intermediate Support System
TOA	- Total Obligation Authority
WCF	- Working Capital Fund
WRM	- War Reserve Material
WST	- Weapon System Trainer
UAV	- Unmanned Aerial Vehicle
XML	- Extensible Markup Language

BASE / ORGANIZATIONAL ACRONYMS

ACC	- Air Combat Command
AETC	- Air Education & Training Command
AFCAO	- Air Force Computer Acquisition Office
AFCESA	- Air Force Civil Engineering Support Agency
AFCIC	- AF Communications & Information Center
AFCSC	- Air Force Cryptologic Service Center
AFESC	- Air Force Engineering Services Center
AFGWC	- Air Force Global Weather Central
AFIT	- Air Force Institute of Technology
AFLCMC	- Air Force Life Cycle Management Center
AFMC	- Air Force Materiel Command
AFMETCAL	- Air Force Metrology and Calibration Office
AFMLO	- Air Force Medical Logistics Office
AFOSI	- Air Force Office of Special Investigation
AFOTEC	- Air Force Operational Test & Evaluation Center
AFPC	- Air Force Personnel Center

UNCLASSIFIED

UNCLASSIFIED

AFPSL	- AF Primary Standards Lab
AFR	- Air Force Reserve
AFSOC	- AF Special Operations Command
AFSPC	- Air Force Space Command
AIA	- Air Intelligence Agency
ALC	- Air Logistics Center
AMC	- Air Mobility Command
ANG	- Air National Guard
ASC	- Aeronautical Systems Center
AETC	- Air Education Training Command
AU	- Air University
AWS	- Air Weather Service
CIA	- Central Intelligence Agency
DGSC	- Defense General Support Center
DLA	- Defense Logistics Center
DOE	- Department of Energy
DPSC	- Defense Personnel Support Center
DSCC	- Defense Supply Center, Columbus
DTIC	- Defense Technical Information Center
ER	- Eastern Range
ESC	- Electronic Systems Center
FAA	- Federal Aviation Agency
FBI	- Federal Bureau of Investigation
GSA	- General Services Administration
JCS	- Joint Chiefs of Staff
NATO	- North Atlantic Treaty Organization
OSD	- Office of the Secretary of Defense
PACAF	- Pacific Air Forces
USAF	- United States Air Force
USAFA	- United States Air Force Academy
USAFE	- United States Air Force Europe
USCENTCOM	- United States Central Command
USEUCOM	- United States European Command
USMC	- United States Marine Corps
USSTRATCOM	- United States Strategic Command
WP AFB	- Wright-Patterson AFB, OH

UNCLASSIFIED

UNCLASSIFIED

CONTRACT METHOD / TYPE ACRONYMS

C	- Competitive
BA	- Basic Agreement
BOA	- Basic Ordering Agreement
BPA	- Blanket Purchasing Agreement
CS	- Cost Sharing
IDDQ	- Indefinite Delivery, Definite Quantity
IDIQ	- Indefinite Delivery, Indefinite Quantity
IDRT	- Indefinite Delivery, Requirements
Letter	- Letter
LH	- Labor-hour
MIPR	- Military Interdepartmental Purchase Request
MIPR-C	- Military Interdepartmental Purchase Request - Competitive
MIPR-OPT	- Military Interdepartmental Purchase Request - Option
MIPR-OTH	- Military Interdepartmental Purchase Request – Other
MIPR-SS	- Military Interdepartmental Purchase Request - Sole Source
OPT	- Option
OTH	- Other
PO	- Project Order
REQN	- Requisition
SS	- Sole Source
T&M	- Time and Materials
UCA	- Undefinitized Contract Action
WP	- Work Project

CONTRACTED BY ACRONYMS

11 WING	- 11th Support Wing, Washington, DC
ACC	- Air Combat Command, Langley AFB, VA
AEDC	- Arnold Engineering Development Center, Arnold AFB, TN
AAC	- Air Armament Center, Eglin AFB, FL
AEDC	- Arnold Engineering Development Center, Arnold AFB, TN
AETC	- Air Education and Training Command, Randolph AFB, TX
AFCIC	- Air Force Communications and Information Center, Washington, DC
AFCESA	- Air Force Civil Engineering Support Agency, Tyndall AFB, FL
AFFTC	- Air Force Flight Test Center, Edwards AFB, CA

UNCLASSIFIED

UNCLASSIFIED

AFLCMC	- Air Force Life Cycle Management Center, Wright-Patterson AFB, OH
AFMC	- Air Force Materiel Command, Wright-Patterson AFB, OH
AFMETCAL	- Air Force Metrology and Calibration Office, Heath, Ohio
AFMLO	- Air Force Medical Logistics Office, Ft Detrick, MD
AIA	- Air Intelligence Agency, Kelly AFB, TX
AMC	- Air Mobility Command, Scott AFB, IL
ASC	- Aeronautical Systems Center, Wright-Patterson AFB, OH & Eglin AFB, FL
AFWA	- Air Force Weather Agency, Offutt AFB, NE
DGSC	- Defense General Support Center, Richmond, VA
DPSC	- Defense Personnel Support Center, Philadelphia, PA
ER	- Eastern Range, Patrick AFB, FL
ESC	- Electronic Systems Center, Hanscom AFB, MA
HSC	- Human Services Center, Brook AFB, TX
OC-ALC	- Oklahoma City Air Logistics Center, Tinker AFB, OK
OO-ALC	- Ogden Air Logistics Center, Hill AFB, UT
SMC	- Space & Missile Systems Center, Los Angeles AFB, CA
US STRATCOM	- US Strategic Command, Offutt AFB, NE
WACC	- Washington Area Contracting Center, Washington DC
WR	- Western Range, Vandenberg AFB, CA
WR-ALC	- Warner-Robins Air Logistics Center, Robins AFB, GA
AFSPC	- Air Force Space Command, Peterson AFB, CO
HQ ANG	- Headquarters, Air National Guard, Washington, DC
USAFE	- United States Air Force Europe, Ramstein AB, GE
USAFA	- United States Air Force Academy, Colorado Springs, CO

IDENTIFICATION CODES

Code "A"	- Line items of material which have been approved for Air Force service use.
Code "B"	- Line items of material that have not been approved for Service use
OBAN	- Operating Budget Account Number, 2-digit code for unit allocated funds

UNCLASSIFIED

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 11: Rockets	P-1 Line Item Number / Title: 351010 / Rockets
--	--

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
---	--	-------------------------------------

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	274.078	271.611	0.000	218.228	218.228	109.960	44.054	44.054	25.000	-	986.985
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	274.078	271.611	0.000	218.228	218.228	109.960	44.054	44.054	25.000	-	986.985
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	274.078	271.611	0.000	218.228	218.228	109.960	44.054	44.054	25.000	-	986.985

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$218.228M for Overseas Contingency Operation (OCO); of which \$133.268M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

FY18 funding totals include \$49.050M appropriated for OCO.

The Air Force uses the 2.75 inch diameter rockets system to support various missions including low collateral damage engagements, target marking, and battle field illumination. The system can be employed from both high and low speed aircraft.

- The 2.75 inch diameter rocket motor (HA07) is a single stage, solid grain rocket motor used to propel unguided and guided payloads to their targets. The HA07 is able to carry the WGU-59B (HB24) Advanced Precision Kill Weapons System II (APKWS II) guidance section, and the following payloads: illuminating flare warhead (H812), infrared (IR) illuminating flare warhead (HA06), Signal Practice warhead (H872), White Phosphorus (WP) warhead (H855), M151 High Explosive warheads (H842 and H843), and M282A2 Penetrator warhead. The 2.75 inch rockets are launched from reusable pods, the LAU-131A (H149) and LAU-131A/A (HA91) extended length launcher, carried on A-10 and F-16 aircraft. These items are procured by AFLCMC/EBH through the U.S. Army Missile Command, Joint Attack Munitions Systems (JAMS), PEO Missile and Space at Redstone Arsenal, Alabama, and Department of the Navy PMA-242 at Patuxent River Naval Air Station.

- The WGU-59B APKWS II weapon system is employed on the A-10 and F-16 aircraft. APKWS II All Up Round (AUR) is composed of a fuze, M151/M282 Warhead, WGU-59B guidance and control section, and a MK66 rocket motor launched from a LAU-131A/A or LAU-68F/A rocket launcher. The weapon is effective in any terrain, including, but not limited to, urban, desert and mountainous. It provides an ability to engage and destroy moving and transient targets. APKWS II offers greater precision, reduced collateral damage, and increased standoff range to enhance crew survivability.

- The M151 (H843 and H842) and M282 Multi-Purpose Penetrator (MPP) warheads are low-cost, low-collateral damage capabilities. The M282 MPP warhead provides aircrew and ground commanders greatly enhanced weaponing options to engage targets protected by urban and cave environments. Equipment such as MKIII and MKIV testers, peculiar support equipment, clamping and torquing fixtures and tools, or other assets that pertain to assembling and testing APKWS or unguided rockets are also procured.

- The Illuminating Flare (H812) and IR illuminating flare (HA06) warheads provide forward air control aircraft with the target locations from a standoff distance in a hostile environment.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 11: Rockets		P-1 Line Item Number / Title: 351010 / Rockets
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>- The Signal Practice (H872) warhead provides a training capability.</p> <p>- The White Phosphorus (H855) warhead provides forward air control aircraft with target locations from a standoff distance in a hostile environment.</p> <p>- The LAU-131A/A (HA91) and the LAU-68F/A (HA94) are seven tube (capacity) extended length launchers that can accommodate both legacy length 2.75 inch diameter rockets and the extended length of the APKWS II rockets. The extended length launchers are designed to accommodate the guidance and control section within the launcher.</p> <p>- Items Less Than Five Million Dollars: All items have an annual procurement value of less than \$5,000,000 and are Code A. These items are procured by AFLCMC/EBH through the U.S. Army Missile Command Joint Attack Munitions Systems (JAMS), PEO Missiles and Space at Redstone Arsenal Alabama, and/or the U.S. Navy PMA-242 at Patuxent River Naval Air Station, in accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p> <p>Funding for this exhibit is contained in PE 0207599F and PE 0208030F.</p> <p>Funds may be used to resolve production DMS/MS/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, to include electronic components used commercially and in short supply; and qualification activities to preserve future production capabilities and capacities.</p> <p>Note: Procurement quantities can change based on negotiated options/pricing bands and available funding, in accordance with Title 10, U.S. Code Section 2308 BUY-TO-BUDGET ACQUISITION.</p> <p>As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force	Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 11: Rockets	P-1 Line Item Number / Title: 351010 / Rockets

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
--	---	--

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	(H812) WHD ILLUM M257				- / -	- / 2.500	- / 12.000	- / 0.000	- / -	- / 0.000
P-40a	(H855) WHD 2.75 RKT SMK M156 PD M427				- / -	- / 4.000	- / 13.437	- / 0.000	- / -	- / 0.000
P-40a	(HA06) WARHEAD, 2.75 ILLUM				- / -	- / 4.000	- / 14.300	- / 0.000	- / -	- / 0.000
P-5	APKWS		A		- / -	- / 263.578	- / 231.874	- / 0.000	- / 218.228	- / 218.228
P-40	Total Gross/Weapon System Cost				- / -	- / 274.078	- / 271.611	- / 0.000	- / 218.228	- / 218.228

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.
 Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY2020 supports the purchase of rockets, launchers, warheads, and guidance sections to constitute the APKWS II all-up-round (AUR). Additionally, funding supports training and support equipment required for APKWS.
 FY2020 includes \$218.228M of OCO to procure 5,400 APKWS guidance sections and associated AUR items and training/support equipment.
 The Air Force procures munitions to maintain appropriate operational quantity levels, as well as War Reserve Materiel (WRM) Munitions and test and training stockpiles. Active, Guard and Reserve components draw from the WRM stockpiles as required and receive test and training allocations annually based on current-year requirements.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 11 **P-1 Line Item Number / Title:** 351010 / Rockets **Aggregated Items Title:** (H812) WHD ILLUM M257

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(H812) WHD ILLUM M257	A		-	-	-	-	-	2.500	-	-	12.000	-	-	0.000	-	-	-	-	-	0.000
Subtotal: Uncategorized			-	-	-	-	-	2.500	-	-	12.000	-	-	0.000	-	-	-	-	-	0.000
Total			-	-	-	-	-	2.500	-	-	12.000	-	-	0.000	-	-	-	-	-	0.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force														Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 11						P-1 Line Item Number / Title: 351010 / Rockets						Aggregated Items Title: (H855) WHD 2.75 RKT SMK M156 PD M427							

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware																				
Warhead SMK M156 (H855)	A		-	-	-	-	-	4.000	-	-	13.437	-	-	0.000	-	-	-	-	-	0.000
Subtotal: Hardware			-	-	-	-	-	4.000	-	-	13.437	-	-	0.000	-	-	-	-	-	0.000
Total			-	-	-	-	-	4.000	-	-	13.437	-	-	0.000	-	-	-	-	-	0.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 11 **P-1 Line Item Number / Title:** 351010 / Rockets **Aggregated Items Title:** (HA06) WARHEAD, 2.75 ILLUM

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(HA06) WARHEAD, 2.75 ILLUM	A		-	-	-	-	-	4.000	-	-	14.300	-	-	0.000	-	-	-	-	-	0.000
Subtotal: Uncategorized			-	-	-	-	-	4.000	-	-	14.300	-	-	0.000	-	-	-	-	-	0.000
Total			-	-	-	-	-	4.000	-	-	14.300	-	-	0.000	-	-	-	-	-	0.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 11	P-1 Line Item Number / Title: 351010 / Rockets	Item Number / Title [DODIC]: APKWS

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	263.578	231.874	0.000	218.228	218.228
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	263.578	231.874	0.000	218.228	218.228
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	263.578	231.874	0.000	218.228	218.228

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Advanced Precision Kill Weapon System (APKWS) Cost																		
Recurring Cost																		
Guidance Section	-	-	-	0.023	10,621	242.371	0.023	6,879	154.812	-	-	0.000	0.025	5,400	136.318	0.025	5,400	136.318
(HA07) ROCKET MOTOR MK-66	-	-	-	-	-	-	0.001	70,000	59.428	-	-	0.000	0.001	65,000	58.237	0.001	65,000	58.237
(HA91) LAU-131A/A ROCKET LAUNCHER	-	-	-	0.015	146	2.165	0.007	400	2.652	-	-	0.000	0.007	250	1.676	0.007	250	1.676
Warhead M151	-	-	-	0.000	4,960	1.096	0.000	8,530	2.500	-	-	0.000	0.000	10,125	3.000	0.000	10,125	3.000
Warhead M282	-	-	-	0.003	4,681	11.845	0.003	3,136	8.023	-	-	0.000	0.003	5,517	14.269	0.003	5,517	14.269
Rocket Launcher Tester (AN/USM-715)	-	-	-	-	-	3.000	-	-	-	-	-	0.000	-	-	-	-	-	0.000
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	260.477	-	-	227.415	-	-	0.000	-	-	213.500	-	-	213.500
<i>Subtotal: Hardware - Advanced Precision Kill Weapon System (APKWS) Cost</i>	-	-	-	-	-	260.477	-	-	227.415	-	-	0.000	-	-	213.500	-	-	213.500
Support - APKWS Cost																		
Production Support	-	-	-	-	-	3.101	-	-	4.459	-	-	0.000	-	-	4.728	-	-	4.728
<i>Subtotal: Support - APKWS Cost</i>	-	-	-	-	-	3.101	-	-	4.459	-	-	0.000	-	-	4.728	-	-	4.728
Gross/Weapon System Cost	-	-	-	-	-	263.578	-	-	231.874	-	-	0.000	-	-	218.228	-	-	218.228

Remarks:
Production Support includes travel, shipping, and PMA.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 11	P-1 Line Item Number / Title: 351010 / Rockets	Item Number / Title [DODIC]: APKWS
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 12: Cartridges	P-1 Line Item Number / Title: 352010 / Cartridges
---	---

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
---	--	-------------------------------------

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	205.853	188.227	0.000	193.091	193.091	186.551	171.852	168.021	149.779	-	1,263.374
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	205.853	188.227	0.000	193.091	193.091	186.551	171.852	168.021	149.779	-	1,263.374
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	205.853	188.227	0.000	193.091	193.091	186.551	171.852	168.021	149.779	-	1,263.374

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$193.091M for Overseas Contingency Operations(OCO); of which \$170.141M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

FY2018 funding includes \$11.384M appropriated for Overseas Contingency Operations.

FY2019 funding includes \$29.587M appropriated for Overseas Contingency Operations.

The following Weapon System Cost Elements are represented in this P-1 line:

-7.62MM Ball Linked M80 (A143): The M240 Machine Gun requires this linked round, used against personnel and unarmored targets. Air Force procures this item through the Single Manager for Conventional Ammunition (SMCA), Department of the Army.

-25MM Target Practice (TP), PGU-23/U (A978): 25MM PGU-23 is a target practice round used in the GAU-12/A gun systems applicable to the F-35 and AC-130U aircraft. The round is also a kinetic energy combat round used to limit collateral damage potential. Air Force procures 25MM through the Single Manager for Conventional Ammunition (SMCA), Department of the Army.

-20MM PGU-28A/B (AA22): Primary combat round, high explosive incendiary used with the M61 gun system applicable to the F-15 and F-16 aircraft. Designed for use against air-to-air and air-to-ground targets. Both the Air Force and Navy use this ammunition for combat only. Air Force procures 20MM through the Single Manager for Conventional Ammunition (SMCA), Department of the Army.

-20MM TP Round PGU-27A/B (AA24): This round is used for air-to-air and air-to-ground training in the M61 aircraft gun on F-15, F-16 and F-22A aircraft. The cartridge is electrically primed and has no fuze. The projectile is a solid slug sized to match the ballistics of the 20MM combat round. 20MM is the primary ammunition used in Air Force and Navy aircraft gun systems to provide a training capability to complement the PGU-28 high explosive incendiary combat round and ensure training is consistent with combat operations. Air Force procures 20MM through the Army Single Manager for Conventional Ammunition (SMCA), Department of the Army and engineering support from the Navy.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 12: Cartridges		P-1 Line Item Number / Title: 352010 / Cartridges
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>-5.56MM Blue Marking Cartridge (AB09): This round is used in force-on-force training of personnel in M16A2 and M4 rifles. It consists of a plastic projectile in a brass cartridge case. Air Force procures this item through the Single Manager for Conventional Ammunition (SMCA), Department of the Army.</p> <p>-5.56MM Frangible (AA40): This is the primary training round for the Air Force and consists of a lead-free small rifle primer in a brass cartridge case. These cartridges are more environmentally friendly than standard 5.56MM ball cartridges. The case is made of reusable/recyclable brass, which is the same as 5.56MM ball ammunition. The 5.56MM frangible cartridges are used in M16-series rifles, which include M4 rifles. The Air Force procures this item through the Navy.</p> <p>-5.56MM Ball M855 (AB57): This is a lead-free primary combat round used in the M16A2 and M4 rifles, against personnel and unarmored targets. Air Force procures this item through the Single Manager for Conventional Ammunition (SMCA), Department of the Army.</p> <p>-30MM HEI PGU-13D/B Round (B104): This is a High Explosive Incendiary (HEI) round for the GAU-8/A cannon on the A-10 aircraft. It contains an explosive material for use against light armor and personnel. Air Force procures 30MM from the Single Manager for Conventional Ammunition (SMCA), Department of the Army.</p> <p>-30MM Target Practice (TP) Cartridge PGU-15A/B (B116): A solid, inert projectile used to train aircrew in the use of the GAU-8/A cannon on the A-10 aircraft. The cartridge is mechanically primed and has no fuze, while the projectile is a solid slug designed to match the ballistics of high explosive incendiary and armor piercing incendiary cartridges. Air Force procures 30MM from the Single Manager for Conventional Ammunition (SMCA), Department of the Army.</p> <p>-BBU-35A/B Impulse Cartridge (MG62): Impulse Cartridge used to eject countermeasure flares and chaff from various airframes (A-10, MC-130, F-16, KC-130, C-130, F-15, C-17, B-1). It is an electrically initiated impulse cartridge consisting of a center pin which is glass to metal sealed inside a cylindrical aluminum casing which is crimped over a scored metal closure on the output end. Applications include MJU-48, M212, MJU-46, MJU-50, MJU-66, MJU-64, RR-188, and RR-170.</p> <p>-BBU-36A/B Impulse Cartridge (MG11): Impulse cartridge used to eject countermeasure flares from various airframes (A-10, C-17, F-15, F-16, F-22, MC-130). It is an electrically initiated impulse cartridge consisting of a center pin which is glass to metal sealed inside a cylindrical aluminum casing which is crimped over a scored metal closure on the output end. Applications include MJU-7A/B, MJU-53/B, MJU-62/B, MJU-59/B, MJU-10/B, MJU-40/B, and MJU-51A/B.</p> <p>-BBU-48A/B Impulse Cartridge (SS27): Dual squib impulse cartridge used to eject chaff from various airframes (A-10, C-17, F-15, F-16, F-22, MC-130). It is an electrically initiated impulse cartridge consisting of two squibs each with a glass to metal seal inside a cylindrical aluminum casing with scored metal on the output end. A small circuit board allows for the functioning of one squib at a time without repositioning the countermeasure. Applications include RR-180 and RR-196.</p> <p>-25MM PGU-48/B (AB98): 25MM PGU-48/B (formerly Frangible Armor Piercing (FAP)) round to be used in GAU-22 gun on F-35/JSF.</p> <p>-Items Less Than Five Million Dollars: All items have an annual procurement of less than \$5,000,000 and are Code A.</p> <p>Funds may be used to resolve production DMS/MS/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, to include electronic components used commercially and in short supply; and, qualification activities to preserve future production capabilities and capacities.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p> <p>Funding for this exhibit contained in PEs: 0207580F, 0207599F, 0208015F and 0208030F.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 12: Cartridges		P-1 Line Item Number / Title: 352010 / Cartridges
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 12: Cartridges **P-1 Line Item Number / Title:** 352010 / Cartridges

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	(A143) 7.62MM BALL LINKED (M80)	P-5a	A		- / -	- / -	- / 2.750	- / -	- / 6.000	- / 6.000
P-40a	(A978) CTG, 25MM, TP (PGU-23/U)				- / -	- / 17.000	- / 4.000	- / 0.000	- / -	- / 0.000
P-5	(AA22) 20MM PGU-28A/B SEMI-AP, HEI	P-5a	A		- / -	- / 18.667	- / 33.000	- / -	- / -	- / -
P-5	(AA24) 20MM, TP PGU-27A/B	P-5a	A		- / -	- / 26.694	- / -	- / -	- / 15.362	- / 15.362
P-40a	(AA40) 5.56MM, FRANGIBLE				- / -	- / 9.000	- / 15.000	- / -	- / 11.040	- / 11.040
P-40a	(AB09) 5.56 BLUE MARKING CARTRIDGE				- / -	- / 3.000	- / 1.500	- / -	- / 6.000	- / 6.000
P-5	(AB57) 5.56 CLIPPED BALL, LEAD FREE	P-5a	A		- / -	- / 6.000	- / 10.193	- / -	- / 6.290	- / 6.290
P-40a	(AB98) 25MM PGU-48/B				- / -	- / 4.000	- / 20.100	- / -	- / 16.662	- / 16.662
P-40a	(AC29) PGU-30MM Cartridges HEI/TP Urban Mix				- / -	- / -	- / 9.587	- / -	- / -	- / -
P-40a	(AC30) SKYNET				- / -	- / 36.500	- / -	- / -	- / -	- / -
P-5	(B116) 30MM PGU-15/B, TP	P-5a	A		- / -	- / 36.594	- / 36.850	- / -	- / 76.350	- / 76.350
P-40a	(MG62) BBU-35/B IMPULSE CARTRIDGE				- / -	- / 5.000	- / 5.008	- / -	- / 5.008	- / 5.008
P-40a	(SS-27) BBU-48/B IMPULSE CARTRIDGE				- / -	- / 4.000	- / 4.000	- / -	- / 6.000	- / 6.000
P-40a	CARTRIDGES (ITEMS LESS THAN \$5 MILLION)				- / -	- / 38.992	- / 46.239	- / -	- / 44.379	- / 44.379
P-40	Total Gross/Weapon System Cost				- / -	- / 205.853	- / 188.227	- / 0.000	- / 193.091	- / 193.091

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY2020 funds purchase small arms ammunition for use against personnel and unarmored targets; medium caliber ammunition used in aircraft gun systems against air-to-air, air-to-ground and light armored targets, as well as certain impulse cartridges needed to eject weapons stores from bomb racks and instigate aircraft countermeasures.

The Air Force procures munitions to maintain appropriate quantities in the War Reserve Materiel (WRM) Munitions and test and training stockpiles. Active, Guard and Reserve components draw from the WRM stockpiles as required and receive test and training allocations annually based on current-year requirements.

-20MM PGU-28 (AA22): This procurement is fulfill WRM requirements. Current stockpile inventory is 37% of total inventory objective. Low combat use.

-20MM PGU-27 (AA24): This procurement is critical to replenish WRM stockpiles supporting pilot training and proficiency.

-30MM PGU-15 (B116): This procurement is critical to replenish WRM stockpiles supporting pilot training and proficiency. 95% of total inventory is in the field, 5% in depot. Currently expending rounds equal to purchases each year and thus there is difficulty in meeting training requirements.

-25MM PGU-48/B (AB98): 25MM PGU-48/B (formerly Frangible Armor Piercing (FAP)) or other alternative round to be used in GAU-22 gun on the F-35/JSF.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 12: Cartridges		P-1 Line Item Number / Title: 352010 / Cartridges
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>-20MM PGU-39 Dummy (A931): Procurement is critical to replenish aging stockpiles of dummy ammunition rounds. Rounds are critical in providing gun system training, troubleshooting, and to verify weapon system readiness. Current inventory is severely aged (30+ years).</p> <p>-BBU-35A/B IMPULSE CARTRIDGE (MG62): This procurement is critical to replenish WRM stockpiles/requirements. Approximately 2M assets are expended annually and 24% (1.4M) of the current stockpile is projected to expire by the end of FY18 if unused. Current stockpile inventory is 48% of the total inventory objective requirement.</p> <p>-BBU-36A/B IMPULSE CARTRIDGE (MG11): This procurement is critical to maintain WRM stockpiles/requirements. Approximately 427K assets are expended annually and 12% (162K) of the current stockpile is projected to expire by the end of FY18 if unused. Current stockpile inventory is currently meeting the total inventory objective requirement.</p> <p>-BBU-48A/B IMPULSE CARTRIDGE (SS27): This procurement is critical to replenish WRM stockpiles/requirements. Approximately 68K assets are expended annually and none are projected to expire in FY18. Current stockpile inventory is 46% of the total inventory objective requirement.</p>		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (A143) 7.62MM BALL LINKED (M80)

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	-	2.750	-	6.000	6.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	2.750	-	6.000	6.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	2.750	-	6.000	6.000

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
7.62MM M80 BALL, FLASH SUPPRESSED PROPELLANT ^(†)	-	-	-	-	-	-	0.000	4,576,786	2.563	-	-	-	0.000	10,491,071	5.875	0.000	10,491,071	5.875
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	2.563	-	-	-	-	-	5.875	-	-	5.875
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	-	-	-	2.563	-	-	-	-	-	5.875	-	-	5.875
Support - Support End Item Cost																		
PRODUCTION ENGINEERING	-	-	-	-	-	-	-	-	0.184	-	-	-	-	-	0.110	-	-	0.110
QUALITY ASSURANCE	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-	0.015	-	-	0.015
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	-	-	-	0.187	-	-	-	-	-	0.125	-	-	0.125
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	2.750	-	-	-	-	-	6.000	-	-	6.000

Remarks:

Item has been moved to P-40a Items Less Than \$5 Million.
 Prices are provided by the Single Manager for Conventional Ammunition (SMCA), Department of the Army. Prices shown represent the SMCA efforts to obtain hardware, containers, pallets, straps, explosive material, etc. for the DoD Military Services purchasing the same or similar items, and to load, assemble and pack the Air Force order. Cost drivers may include economic price adjustments, currency rate fluctuations, price of complex or scarce materials and orders from other Military Services (increases/decreases).

^(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (A143) 7.62MM BALL LINKED (M80)
--	---	--

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
7.62MM M80 BALL, FLASH SUPPRESSED PROPELLANT		2019	ALLIANT TECH LCAAP / INDEPENDENCE, MO	MIPR	ACC-ROCK ISLAND	Mar 2019	Oct 2019	4,576,786	0.000	Y		
7.62MM M80 BALL, FLASH SUPPRESSED PROPELLANT	✓	2020	ALLIANT TECH LCAAP / INDEPENDENCE, MO	MIPR	ACC-ROCK ISLAND	Mar 2020	Feb 2021	10,491,071	0.000	Y		

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12 **P-1 Line Item Number / Title:** 352010 / Cartridges **Aggregated Items Title:** (A978) CTG, 25MM, TP (PGU-23/U)

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(A978) CTG, 25MM, TP (PGU-23/U)	A		-	-	-	0.000	590,893	17.000	0.000	173,913	4.000	-	-	0.000	-	-	-	-	-	0.000
Subtotal: Uncategorized			-	-	-	-	-	17.000	-	-	4.000	-	-	0.000	-	-	-	-	-	0.000
Total			-	-	-	-	-	17.000	-	-	4.000	-	-	0.000	-	-	-	-	-	0.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (AA22) 20MM PGU-28A/B SEMI-AP, HEI

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	18.667	33.000	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	18.667	33.000	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	18.667	33.000	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
LOAD, ASSEMBLE, PACK ^(†)	-	-	-	0.000	610,138	18.188	0.000	1,093,000	32.582	-	-	-	-	-	-	-	-	-
BOX, METAL M548	-	-	-	0.000	2,464	0.111	0.000	4,407	0.198	-	-	-	-	-	-	-	-	-
PALLET MK3-0	-	-	-	0.000	221	0.019	0.000	192	0.035	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	<i>18.318</i>	-	-	<i>32.815</i>	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	<i>18.318</i>	-	-	<i>32.815</i>	-	-	-	-	-	-	-	-	-
Support - Support End Item Cost																		
QUALITY ASSURANCE	-	-	-	-	-	0.027	-	-	0.012	-	-	-	-	-	-	-	-	-
FIRST ARTICLE TESTING	-	-	-	-	-	0.322	-	-	0.173	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	<i>0.349</i>	-	-	<i>0.185</i>	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-	-	18.667	-	-	33.000	-	-	-	-	-	-	-	-	-

Remarks:

Prices are provided by the Single Manager for Conventional Ammunition (SMCA), Department of the Army. Prices shown represent the SMCA efforts to obtain containers, pallets, explosive material, lugs, etc. for the DoD Military Services purchasing the same or similar items, and to load, assemble and pack the Air Force order. Cost drivers may include economic price adjustments, currency rate fluctuations, price of complex or scarce materials and orders from other Military Services (increases/decreases).

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
--	--	----------------------------

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (AA22) 20MM PGU-28A/B SEMI-AP, HEI
--	---	---

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Load, Assemble and Pack (LAP) costs are applicable to production, build-up and packing/boxing the ammunition rounds. The LAP quantity is the number of completed rounds to be delivered into the AF inventory.

Packaging, Crating and Handling (PC&H) cost is associated with transferring the completed order from production to the first destination.

(t) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (AA22) 20MM PGU-28A/B SEMI-AP, HEI
--	---	---

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK		2018	General Dynamics & Alliant Tech / Marion, IL and Plymouth, MN	MIPR	AFLCMC Hill AFB	Mar 2018	Feb 2019	610,138	0.000	Y		
LOAD, ASSEMBLE, PACK		2019	General Dynamics & Alliant Tech / Marion, IL and Plymouth, MN	MIPR	AFLCMC Hill AFB	Mar 2020	Feb 2021	1,093,000	0.000	Y		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (AA24) 20MM, TP PGU-27A/B

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	26.694	-	-	15.362	15.362
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	26.694	-	-	15.362	15.362
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	26.694	-	-	15.362	15.362

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
LOAD, ASSEMBLE, PACK ^(†)	-	-	-	0.000	2,125,200	26.097	-	-	-	-	-	-	0.000	1,200,360	14.956	0.000	1,200,360	14.956
BOX METAL M548	-	-	-	0.000	8,587	0.385	-	-	-	-	-	-	0.000	4,920	0.224	0.000	4,920	0.224
PALLET MK3-0	-	-	-	0.000	373	0.067	-	-	-	-	-	-	0.000	176	0.032	0.000	176	0.032
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	26.550	-	-	-	-	-	-	-	-	15.213	-	-	15.213
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	26.550	-	-	-	-	-	-	-	-	15.213	-	-	15.213
Support - Support End Item Cost																		
QUALITY ASSURANCE	-	-	-	-	-	0.013	-	-	-	-	-	-	-	-	0.029	-	-	0.029
FIRST ARTICLE TEST	-	-	-	-	-	0.131	-	-	-	-	-	-	-	-	0.120	-	-	0.120
ACCEPTANCE TESTING	-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	0.144	-	-	-	-	-	-	-	-	0.149	-	-	0.149
Gross/Weapon System Cost	-	-	-	-	-	26.694	-	-	-	-	-	-	-	-	15.362	-	-	15.362

Remarks:

Prices are provided by the Single Manager for Conventional Ammunition (SMCA), Department of the Army. Prices shown represent the SMCA efforts to obtain containers, pallets, explosive material, lugs, etc. for the DoD Military Services purchasing the same or similar items, and to load, assemble and pack the Air Force order. Cost drivers may include economic price adjustments, currency rate fluctuations, price of complex or scarce materials and orders from other Military Services (increases/decreases).

Load, Assemble and Pack (LAP) costs are applicable to production, build-up and packaging the individual round. The LAP quantity is the number of completed rounds to be delivered into the AF inventory.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (AA24) 20MM, TP PGU-27A/B
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
<p>Packaging, Crating and Handling (PC&H) cost is associated with transferring the completed order from production to the first destination.</p> <p>(t) indicates the presence of a P-5a</p>		

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (AA24) 20MM, TP PGU-27A/B
--	---	--

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK		2018	GENERAL DYNAMICS AND ALLIANT TECH / MARION, IL AND PLYMOUTH, MN	MIPR	ACC-ROCK ISLAND	Mar 2018	Feb 2019	2,125,200	0.000	Y		Jan 2018
LOAD, ASSEMBLE, PACK	✓	2020	GENERAL DYNAMICS AND ALLIANT TECH / MARION, IL AND PLYMOUTH, MN	MIPR	ACC-ROCK ISLAND	Mar 2020	Feb 2021	1,200,360	0.000	Y		Jan 2019

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12 **P-1 Line Item Number / Title:** 352010 / Cartridges **Aggregated Items Title:** (AA40) 5.56MM, FRANGIBLE

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
5.56 MM FRANG (AA40)	A		-	-	-	0.000	21,428,571	9.000	0.000	35,714,285	15.000	-	-	-	0.000	26,285,714	11.040	0.000	26,285,714	11.040
Subtotal: Uncategorized			-	-	-	-	-	9.000	-	-	15.000	-	-	-	-	-	11.040	-	-	11.040
Total			-	-	-	-	-	9.000	-	-	15.000	-	-	-	-	-	11.040	-	-	11.040

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
The Air Force purchases Frangible rounds through the Dept of Navy. Prices for current and/or prior fiscal years represent the Vendor's total cost for completed and boxed rounds. Prices for budget years are estimates from industry obtained from the Navy.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force														Date: February 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12							P-1 Line Item Number / Title: 352010 / Cartridges							Aggregated Items Title: (AB09) 5.56 BLUE MARKING CARTRIDGE					

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(AB09) 5.56 BLUE MARKING CARTRIDGE	A		-	-	-	0.000	4,477,612	3.000	0.000	2,368,920	1.500	-	-	-	0.000	9,277,842	6.000	0.000	9,277,842	6.000
Subtotal: Uncategorized			-	-	-	-	-	3.000	-	-	1.500	-	-	-	-	-	6.000	-	-	6.000
Total			-	-	-	-	-	3.000	-	-	1.500	-	-	-	-	-	6.000	-	-	6.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
(AB09) 5.56 Blue Marking Cartridge FY18 funding has been moved to P-40a Cartridges (Items Less Than \$5 Million).

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (AB57) 5.56 CLIPPED BALL, LEAD FREE

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	6.000	10.193	-	6.290	6.290
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	6.000	10.193	-	6.290	6.290
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	6.000	10.193	-	6.290	6.290

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
LOAD, ASSEMBLE, PACK ^(†)	-	-	-	0.000	18,300,000	5.490	0.000	33,113,500	9.272	-	-	-	0.000	19,900,000	5.572	0.000	19,900,000	5.572
BOX, METAL M2A2	-	-	-	0.000	21,786	0.298	0.000	39,752	0.519	-	-	-	0.000	23,890	0.312	0.000	23,890	0.312
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	5.788	-	-	9.791	-	-	-	-	-	5.884	-	-	5.884
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	5.788	-	-	9.791	-	-	-	-	-	5.884	-	-	5.884
Support - Support End Item Cost																		
PRODUCTION ENGINEERING	-	-	-	-	-	0.207	-	-	0.378	-	-	-	-	-	0.384	-	-	0.384
QUALITY ASSURANCE	-	-	-	-	-	0.005	-	-	0.024	-	-	-	-	-	0.022	-	-	0.022
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	0.212	-	-	0.402	-	-	-	-	-	0.406	-	-	0.406
Gross/Weapon System Cost	-	-	-	-	-	6.000	-	-	10.193	-	-	-	-	-	6.290	-	-	6.290

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force								Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12			P-1 Line Item Number / Title: 352010 / Cartridges					Item Number / Title [DODIC]: (AB57) 5.56 CLIPPED BALL, LEAD FREE				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK		2018	OLIN AND ALLIANT / INDEPENDENCE, MO AND EAST ALTON, IL	MIPR	ACC-ROCK ISLAND	Apr 2018	Apr 2019	18,300,000	0.000	Y		Jan 2018
LOAD, ASSEMBLE, PACK		2019	OLIN AND ALLIANT / INDEPENDENCE, MO AND EAST ALTON, IL	MIPR	ACC-ROCK ISLAND	Apr 2019	Apr 2020	33,113,500	0.000	Y		Jan 2019
LOAD, ASSEMBLE, PACK	✓	2020	OLIN AND ALLIANT / INDEPENDENCE, MO AND EAST ALTON, IL	MIPR	ACC-ROCK ISLAND	Mar 2020	Apr 2021	19,900,000	0.000	Y		

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Aggregated Items Title: (AB98) 25MM PGU-48/B
--	---	--

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
25MM PGU-48/B	A		-	-	-	0.000	15,444	4.000	0.000	135,472	20.100	-	-	-	0.000	112,300	16.662	0.000	112,300	16.662
Subtotal: Uncategorized			-	-	-	-	-	4.000	-	-	20.100	-	-	-	-	-	16.662	-	-	16.662
Total			-	-	-	-	-	4.000	-	-	20.100	-	-	-	-	-	16.662	-	-	16.662

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
The PGU-48/B is a high performance 25MM Frangible Armor Piercing (FAP) Round that is being procured for use on the F-35/A.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force															Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12						P-1 Line Item Number / Title: 352010 / Cartridges						Aggregated Items Title: (AC29) PGU-30MM Cartridges HEI/TP Urban Mix							

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(AC29) 30MM Cartridges HEI/TP Urban Mix	A		-	-	-	-	-	-	0.000	213,044	9.587	-	-	-	-	-	-	-	-	-
Subtotal: Uncategorized			-	-	-	-	-	-	-	-	9.587	-	-	-	-	-	-	-	-	-
Total			-	-	-	-	-	-	-	-	9.587	-	-	-	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12 **P-1 Line Item Number / Title:** 352010 / Cartridges **Aggregated Items Title:** (AC30) SKYNET

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(AC30) SKYNET	A		-	-	-	-	-	36.500	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Uncategorized			-	-	-	-	-	36.500	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	-	-	-	36.500	-	-	-	-	-	-	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (B116) 30MM PGU-15/B, TP

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	36.594	36.850	-	76.350	76.350
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	36.594	36.850	-	76.350	76.350
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	36.594	36.850	-	76.350	76.350

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
LOAD,ASSEMBLE,PACK ^(†)	-	-	-	0.000	1,459,180	33.663	0.000	1,477,250	34.080	-	-	-	0.000	3,100,000	71.517	0.000	3,100,000	71.517
CONTAINER CNU-332E	-	-	-	0.001	2,626	1.352	0.000	2,657	1.165	-	-	-	0.000	5,326	2.336	0.000	5,326	2.336
TUBE AND STRAP ASSEMBLY	-	-	-	0.000	2,626	1.167	0.000	2,657	1.181	-	-	-	0.000	5,326	2.367	0.000	5,326	2.367
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	36.183	-	-	36.426	-	-	-	-	-	76.220	-	-	76.220
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	36.183	-	-	36.426	-	-	-	-	-	76.220	-	-	76.220
Support - Support End Item Cost																		
QUALITY ASSURANCE	-	-	-	-	-	0.012	-	-	0.015	-	-	-	-	-	0.060	-	-	0.060
ACCEPTANCE TESTING	-	-	-	-	-	0.129	-	-	0.016	-	-	-	-	-	0.070	-	-	0.070
FIRST ARTICLE TEST	-	-	-	-	-	0.270	-	-	0.393	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	0.411	-	-	0.424	-	-	-	-	-	0.130	-	-	0.130
Gross/Weapon System Cost	-	-	-	-	-	36.594	-	-	36.850	-	-	-	-	-	76.350	-	-	76.350

Remarks:

Prices are provided by the Single Manager for Conventional Ammunition (SMCA), Department of the Army. Prices shown represent the SMCA efforts to obtain hardware, containers, pallets, straps, explosive material, lugs, etc. for the DoD Military Services purchasing the same or similar items, and to load, assemble and pack the Air Force order. Cost drivers may include economic price adjustments, currency rate fluctuations, price of complex or scarce materials and orders from other Military Services (increases/decreases).

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (B116) 30MM PGU-15/B, TP
ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:	
Load, Assemble and Pack (LAP) costs are applicable to production, build-up and packaging the individual round.		
(†) indicates the presence of a P-5a		

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12	P-1 Line Item Number / Title: 352010 / Cartridges	Item Number / Title [DODIC]: (B116) 30MM PGU-15/B, TP
--	---	---

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD,ASSEMBLE,PACK		2018	GENERAL DYNAMICS AND ALLIANT TECH / MARION, IL AND MESA, AZ	MIPR	ACC-ROCK ISLAND	Mar 2018	Apr 2019	1,459,180	0.000	Y		
LOAD,ASSEMBLE,PACK		2019	GENERAL DYNAMICS AND ALLIANT TECH / MARION, IL AND MESA, AZ	MIPR	ACC-ROCK ISLAND	Mar 2019	Mar 2020	1,477,250	0.000	Y		
LOAD,ASSEMBLE,PACK	✓	2020	GENERAL DYNAMICS AND ALLIANT TECH / MARION, IL AND MESA AZ	MIPR	ACC-ROCK ISLAND	Mar 2020	Apr 2021	3,100,000	0.000	Y		

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force															Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12						P-1 Line Item Number / Title: 352010 / Cartridges						Aggregated Items Title: (MG62) BBU-35/B IMPULSE CARTRIDGE							

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(MG62) BBU-35/B IMPULSE CARTRIDGE	A		-	-	-	0.000	3,500,000	5.000	0.000	2,052,459	5.008	-	-	-	0.000	2,052,459	5.008	0.000	2,052,459	5.008
Subtotal: Uncategorized			-	-	-	-	-	5.000	-	-	5.008	-	-	-	-	-	5.008	-	-	5.008
Total			-	-	-	-	-	5.000	-	-	5.008	-	-	-	-	-	5.008	-	-	5.008

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force														Date: February 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12							P-1 Line Item Number / Title: 352010 / Cartridges							Aggregated Items Title: (SS-27) BBU-48/B IMPULSE CARTRIDGE					

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(SS-27) BBU-48/B IMPULSE CARTRIDGE	A		-	-	-	0.000	440,613	4.000	0.000	441,014	4.000	-	-	-	0.000	661,521	6.000	0.000	661,521	6.000
Subtotal: Uncategorized			-	-	-	-	-	4.000	-	-	4.000	-	-	-	-	-	6.000	-	-	6.000
Total			-	-	-	-	-	4.000	-	-	4.000	-	-	-	-	-	6.000	-	-	6.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
(SS-27) BBU-48/B IMPULSE CARTRIDGE FY18 funding was moved to "Cartridges (Items Less Than \$5 Million)".

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force															Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12							P-1 Line Item Number / Title: 352010 / Cartridges								Aggregated Items Title: CARTRIDGES (ITEMS LESS THAN \$5 MILLION)				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
AMMUNITION CARTRIDGES																				
(A014) CTG, 12 GA SHOTGUN, 7-1//2 PLASTIC	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(A017) CTG, 12 GA BUCKSHOT	A		-	-	-	0.000	16,890	0.010	0.000	17,544	0.010	-	-	-	0.000	17,544	0.010	0.000	17,544	0.010
(A062) CTG, 5.56MM BALL M855 LINKED	A		-	-	-	-	-	0.000	-	-	-	-	-	-	0.000	1,013,514	0.750	0.000	1,013,514	0.750
(A080) CTG, 5.56MM BLANK M200	A		-	-	-	-	-	0.000	-	-	-	-	-	-	0.000	142,857	0.100	0.000	142,857	0.100
(A091) CTG, .22 CAL LONG RIFLE	A		-	-	-	0.000	812,500	0.195	-	-	-	-	-	-	0.000	416,667	0.100	0.000	416,667	0.100
(A131) CTG, 7.62MM BALL 4-1 LINKED	A		-	-	-	0.000	3,389,830	2.000	0.000	3,448,276	2.000	-	-	-	0.000	5,172,413	3.000	0.000	5,172,413	3.000
(A143) 7.62MM BALL LINKED (M80)	A		-	-	-	0.000	5,454,400	3.000	0.000	7,142,857	4.000	-	-	-	0.000	10,714,285	6.000	0.000	10,714,285	6.000
(A164) CTG, 7.62MM LINKED	A		-	-	-	-	-	0.000	0.000	1,851,852	1.000	-	-	-	0.000	1,851,852	1.000	0.000	1,851,852	1.000
(A246) CTG, .30 CAL BALL BULK	A		-	-	-	0.000	38,461	0.010	-	-	-	-	-	-	0.000	19,231	0.005	0.000	19,231	0.005
(A165) CARTRIDGE 7.62MM M80	A		-	-	-	-	-	-	0.000	1,818,182	1.000	-	-	-	0.000	2,181,818	1.200	0.000	2,181,818	1.200
(A257) CTG, 7.62MM 9-1 DIM TRACER	A		-	-	-	0.000	363,538	0.200	0.000	363,636	0.200	-	-	-	0.000	363,636	0.200	0.000	363,636	0.200
(A363) 9MM BALL NATO XM882 PISTOL	A		-	-	-	0.000	3,750,000	0.750	0.000	5,000,000	1.000	-	-	-	0.000	5,750,000	1.150	0.000	5,750,000	1.150
(A358) 9MM SUBCAL AT4 TRACER	A		-	-	-	-	-	1.500	-	-	-	-	-	-	-	-	-	-	-	-
(A404) CTG, .38 CAL SP BALL WADCUTTER	A		-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(A475) CTG, CAL .45 BALL M1911	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(A482) CTG CAL .45 BALL WADCUTTER	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(A483) CTG CAL .45 BALL M1911 MTCHGRD	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(A552) CTG, .50 CAL BALL SINGLE ROUND, M33	A		-	-	-	-	-	0.000	-	-	-	-	-	-	0.000	13,953	0.030	0.000	13,953	0.030
(A555) CTG, CAL .50 BALL M2 LINKED	A		-	-	-	0.000	483,092	1.000	0.000	473,934	1.000	-	-	-	0.000	473,934	1.000	0.000	473,934	1.000

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force															Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12					P-1 Line Item Number / Title: 352010 / Cartridges										Aggregated Items Title: CARTRIDGES (ITEMS LESS THAN \$5 MILLION)				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
(A557) CTG, CAL .50 BALL/TRACER/ LINKED M2/M9	A		-	-	-	0.000	576,036	1.250	0.000	909,091	2.000	-	-	-	0.000	568,182	1.250	0.000	568,182	1.250
(A598) CTG CAL.50 BLNK CRMPD W/M9 LNK	A		-	-	-	0.000	191,387	0.400	-	-	-	-	-	-	-	-	-	-	-	-
(A606) CTG, CAL.50 API MK211 MOD 0	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(A607) CTG, .50 CAL ARMOR PIERCING INCENDIARY	A		-	-	-	0.000	126,422	1.000	0.000	75,949	0.600	-	-	-	0.000	75,949	0.600	0.000	75,949	0.600
(AA02) CTG 5.56MM AP/TR M995/M856 4-1	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(AA03) CTG. 7.62 M993 AP	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(AA04) CTG. 7.62MM 4 AP M9331/1TR M62 W/LK M13	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(AA11) CTG. 7.62 NATO M118 SPEC BALL	A		-	-	-	-	-	0.000	0.000	735,294	0.500	-	-	-	0.000	294,118	0.200	0.000	294,118	0.200
(AA16) 9 MILLIME CARTRIDGE FRANG	A		-	-	-	0.000	8,387,096	2.600	-	-	-	-	-	-	-	-	-	-	-	-
(AA51) 12 GA NON-LETHAL PT-CONT	A		-	-	-	0.000	16,129	0.035	0.000	22,727	0.050	-	-	-	0.000	22,727	0.050	0.000	22,727	0.050
(AA52) 12 GA NON-LETHAL CROWD	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(AA53) CTG 5.56 SPECIAL MK262 MOD 1	A		-	-	-	0.000	834,724	0.500	-	-	-	-	-	-	-	-	-	-	-	-
(AB10) 5.56 RED MARKING CARTRIDGES	A		-	-	-	0.000	4,838,709	3.000	0.000	5,238,095	3.300	-	-	-	0.000	5,238,095	3.300	0.000	5,238,095	3.300
(AB13) 9MM BLUE MARKING CARTRIDGE	A		-	-	-	0.000	3,333,333	2.000	0.000	3,770,492	2.300	-	-	-	0.000	2,868,852	1.750	0.000	2,868,852	1.750
(AB14) 9M RED MARKING CARTRIDGE	A		-	-	-	0.000	3,346,552	2.000	0.000	3,770,492	2.300	-	-	-	0.000	2,868,852	1.750	0.000	2,868,852	1.750
(AB39) 7.62MM SPECIAL BALL, LONG RANGE	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity:
3011F / 01 / 12

P-1 Line Item Number / Title:
352010 / Cartridges

Aggregated Items Title:
CARTRIDGES (ITEMS LESS THAN \$5 MILLION)

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
(AB16) 5.56 BLUE MARKING CARTRIDGE	A		-	-	-	-	-	-	0.000	2,702,703	2.000	-	-	-	0.000	1,013,514	0.750	0.000	1,013,514	0.750
(AB56) 5.56MM M855A1 LINKED LEAD FREE CART	A		-	-	-	0.000	2,805,897	1.000	0.000	2,702,703	1.000	-	-	-	0.000	2,702,703	1.000	0.000	2,702,703	1.000
(AB46) 5.56MM SINGLE ROUND DUMMY	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(AB47) 7.62MM DUMMY	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(AB48) .50 CAL SINGLE DUMMY CART	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(AB72) CTG, 7.62MM SINGLE ROUND BLANK (was A112)	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(B508) 40MM CTG GREEN SMOKE M175	A		-	-	-	-	-	-	0.000	3,530	0.500	-	-	-	-	-	-	-	-	-
(B509) 40MM CTG YELLOW SMOKE	A		-	-	-	-	-	-	0.000	3,562	0.500	-	-	-	-	-	-	-	-	-
(B519) CARTRIDGE, 40MM PRACTICE M781	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(B535) 40MM SWS M583	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(B542) 40 MIL CARTRIDGE HEDP	A		-	-	-	0.000	22,699	1.500	0.000	59,900	4.084	-	-	-	0.000	22,000	1.500	0.000	22,000	1.500
(B576) CTG, 40MM PRACTICE, LINKED, HIGH VELOCITY	A		-	-	-	-	-	0.000	0.000	20,738	0.500	-	-	-	0.000	4,148	0.100	0.000	4,148	0.100
AIR FORCE SHOOTING TEAM	A		-	-	-	-	-	0.085	-	-	0.087	-	-	-	-	-	0.087	-	-	0.087
(BA21) 40MM PRACTICE, DAY/ NIGHT LINKED	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(LA51) SIMULATOR, SMALL ARMS FIRE	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(LA52) SIMULATOR, SMALL ARMS FIRE	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: AMMUNITION CARTRIDGES			-	-	-	-	-	24.035	-	-	29.931	-	-	-	-	-	26.882	-	-	26.882
IMPULSE CARTRIDGES																				

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force														Date: February 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 12							P-1 Line Item Number / Title: 352010 / Cartridges							Aggregated Items Title: CARTRIDGES (ITEMS LESS THAN \$5 MILLION)					

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
(3W37) CHAFF, RR-188	A		-	-	-	0.000	952,861	3.497	0.000	665,129	2.308	-	-	-	0.000	1,007,397	3.496	0.000	1,007,397	3.496
(MG11) CTG, IMPULSE, BBU-36/B	A		-	-	-	-	-	-	0.000	955,414	3.000	-	-	-	0.000	955,414	3.000	0.000	955,414	3.000
(JN31) CU-168 SQUIB	A		-	-	-	0.001	3,606	2.000	0.001	2,647	2.000	-	-	-	0.001	2,647	2.000	0.001	2,647	2.000
(WA83) CCU-136	A		-	-	-	0.000	2,717	0.010	-	-	-	-	-	-	-	-	-	-	-	-
(WB24) CCU-145	A		-	-	-	0.000	37,664	0.200	-	-	-	-	-	-	-	-	-	-	-	-
(M943) MK107 IMPULSE CARTRIDGE	A		-	-	-	0.000	4,329	1.500	0.000	4,230	1.500	-	-	-	0.000	4,230	1.500	0.000	4,230	1.500
(MF60) CTG 25MM TP PGU-23/U	A		-	-	-	0.000	28,968	0.250	-	-	-	-	-	-	-	-	-	-	-	-
(MT40) BBU-46 SQUIB, ELECTRIC	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(NY02) CHAFF, RR-196(T-1)AL	A		-	-	-	0.000	74,313	3.000	0.000	72,664	3.000	-	-	-	0.000	72,664	3.000	0.000	72,664	3.000
(SS44) BBU63/B IMPULSE CARTRIDGE	A		-	-	-	0.001	3,702	2.000	0.000	4,040	2.000	-	-	-	0.000	4,040	2.000	0.000	4,040	2.000
(SY16) RR-180 CHAFF CARTRIDGE	A		-	-	-	0.000	264,270	2.500	0.000	253,642	2.500	-	-	-	0.000	253,642	2.501	0.000	253,642	2.501
Subtotal: IMPULSE CARTRIDGES			-	-	-	-	-	14.957	-	-	16.308	-	-	-	-	-	17.497	-	-	17.497
Total			-	-	-	-	-	38.992	-	-	46.239	-	-	-	-	-	44.379	-	-	44.379

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:

All Ammunition Cartridges:

Prices are provided by the Single Manager for Conventional Ammunition (SMCA), Department of the Army. Prices shown represent the SMCA efforts to obtain munitions items for the DoD Military Services purchasing the same or similar items. Cost drivers include economic price adjustments, currency rate fluctuations, price of complex or scarce materials and orders from other Military Services (increases/decreases). FY14 price changes are due to new contracts with Lake City Army Ammo Plant (LCAAP) and the planned procurements of other customers.

The Navy procures Frangible rounds such as DODIC AA16, 9MM for the Air Force and prices provided based on vendor estimates and AF and Navy combined planned procurements.

All Chaff and Impulse Cartridges:

The Navy procures Chaff and some Impulse Cartridge (all CCU and MK cartridges) items based on planned Air Force and Navy requirements.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs	P-1 Line Item Number / Title: 353010 / Practice Bombs
--	---

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
---	--	-------------------------------------

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	28.509	20.876	0.000	29.313	29.313	29.858	30.399	30.946	31.503	-	201.404
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	28.509	20.876	0.000	29.313	29.313	29.858	30.399	30.946	31.503	-	201.404
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	28.509	20.876	0.000	29.313	29.313	29.858	30.399	30.946	31.503	-	201.404

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$29.313M for Overseas Contingency Operations (OCO); of which \$29.313M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

The following Weapon System Cost Elements are represented in this P-1 line:

- BDU-56 (MK-84 inert): A 2,000-pound, non-explosive training shape used to provide combat air forces with aircrew weapons delivery training. The BDU-56 simulates the drop trajectory of a live MK-84/BLU-117. This item is procured through the Single Manager for Conventional Ammunition (SMCA)/Army.

- BDU-50 (MK-82 inert): A 500-pound thick-wall cast ductile iron, non-explosive training shape used to provide combat air forces with aircrew weapons delivery training. The BDU-50 simulates the drop trajectory of a live MK-82/BLU-111. This item is procured through the Single Manager for Conventional Ammunition (SMCA)/Army.

Funds may be used to resolve production DMS/MS/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, to include electronic components used commercially and in short supply, and qualification activities to preserve future production capabilities and capacities.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

Funding for this exhibit contained in PE 0207599F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity:
3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs

P-1 Line Item Number / Title:
353010 / Practice Bombs

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	(E756) BDU-56/B, 2000LB PRAC BOMB		A		- / -	- / -	- / -	- / -	- / 17.536	- / 17.536
P-5	(ED96) BDU-50D/B 500LB CDI PRAC BOMB	P-5a	A		- / -	- / 28.509	- / 20.876	- / -	- / 11.777	- / 11.777
P-40	Total Gross/Weapon System Cost				- / -	- / 28.509	- / 20.876	- / 0.000	- / 29.313	- / 29.313

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
FY2020 funding purchases BDU-56 and BDU-50 non-explosive training bombs to provide combat air forces with weapons build-up and aircrew weapons delivery training. These practice bombs simulate drop trajectory and weight of explosive-filled weapons.

The Air Force procures munitions to maintain appropriate quantities in the War Reserve Materiel (WRM) Munitions and test and training stockpiles. Active, Guard and Reserve components draw from the WRM stockpiles as required and receive test and training allocations annually based on current-year requirements.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353010 / Practice Bombs	Item Number / Title [DODIC]: (E756) BDU-56/B, 2000LB PRAC BOMB

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	-	-	17.536	17.536
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	-	17.536	17.536
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	-	17.536	17.536

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - (E756) BDU-56/B, 2000LB PRAC BOMB Cost																		
Recurring Cost																		
LOAD, ASSEMBLE, PACK (LAP)	-	-	-	-	-	-	-	-	-	-	-	-	0.001	11,684	16.100	0.001	11,684	16.100
LUG SUSP ACFT ORD	-	-	-	-	-	-	-	-	-	-	-	-	0.000	23,367	0.673	0.000	23,367	0.673
PALLET INSPECTION, MHU-149/E	-	-	-	-	-	-	-	-	-	-	-	-	0.000	2,546	0.539	0.000	2,546	0.539
PALLET MHU-149/E	-	-	-	-	-	-	-	-	-	-	-	-	0.000	2,546	0.224	0.000	2,546	0.224
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.536	-	-	17.536
<i>Subtotal: Hardware - (E756) BDU-56/B, 2000LB PRAC BOMB Cost</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.536	-	-	17.536
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.536	-	-	17.536

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353010 / Practice Bombs	Item Number / Title [DODIC]: (ED96) BDU-50D/B 500LB CDI PRAC BOMB

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	28.509	20.876	-	11.777	11.777
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	28.509	20.876	-	11.777	11.777
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	28.509	20.876	-	11.777	11.777

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	-	0.002	13,365	26.730	0.001	13,711	18.944	-	-	-	0.001	7,734	10.684	0.001	7,734	10.684
LUG SUSP ACFT ORD MS3314	-	-	-	0.000	24,700	0.712	0.000	27,640	0.797	-	-	-	0.000	15,668	0.413	0.000	15,668	0.413
PALLET INSPECTION, MHU-149/E	-	-	-	0.000	2,470	0.466	0.000	2,764	0.663	-	-	-	0.000	1,588	0.381	0.000	1,588	0.381
PALLET MHU-149/E	-	-	-	0.000	2,470	0.593	0.000	2,764	0.439	-	-	-	0.000	1,588	0.253	0.000	1,588	0.253
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	28.501	-	-	20.843	-	-	-	-	-	11.731	-	-	11.731
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	28.501	-	-	20.843	-	-	-	-	-	11.731	-	-	11.731
Support - Support End Item Cost																		
QUALITY ASSURANCE	-	-	-	-	-	0.008	-	-	0.003	-	-	-	-	-	0.009	-	-	0.009
FIRST ARTICLE TEST	-	-	-	-	-	0.000	-	-	0.030	-	-	-	-	-	0.037	-	-	0.037
NAVY ENGINEERING SUPPORT	-	-	-	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000	-	-	0.000
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	0.008	-	-	0.033	-	-	-	-	-	0.046	-	-	0.046
Gross/Weapon System Cost	-	-	-	-	-	28.509	-	-	20.876	-	-	-	-	-	11.777	-	-	11.777

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353010 / Practice Bombs	Item Number / Title [DODIC]: (ED96) BDU-50D/B 500LB CDI PRAC BOMB
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Remarks: Prices are provided by the Single Manager for Conventional Ammunition (SMCA), Department of the Army. Prices shown represent the SMCA efforts to obtain hardware, containers, pallets, non-explosive fill material, lugs, etc. for the DoD Military Services purchasing the same or similar items, and to load, assemble and pack the Air Force order. Cost is influenced by economic price adjustments, currency rate fluctuations, price of complex or scarce materials, and orders from other Military Services. The load, assemble, pack (LAP) quantity is the number of completed rounds to be delivered into the AF inventory. The ammunition production plant provides the LAP price to SMCA, which includes cost to receive bomb bodies and for miscellaneous explosives, fillers and packing materials and bomb lugs used to produce an inventory-worthy round. The BDU-50C/B Cast Ductile Iron (CDI) Practice Bomb contains no explosive fill materials, however, the SMCA generically terms the process of assembling the various components (bomb body, lugs, etc), and "package/palletize" the end item as "Load, Assemble and Pack (LAP)", applicable to both general purpose and practice bombs. (t) indicates the presence of a P-5a		

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force								Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13			P-1 Line Item Number / Title: 353010 / Practice Bombs					Item Number / Title [DODIC]: (ED96) BDU-50D/B 500LB CDI PRAC BOMB				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2018	ALLIED MECHANICAL WISCONSIN / APPLETON, WISCONSIN	MIPR	ACC-ROCK ISLAND	Jan 2018	Mar 2018	13,365	0.002	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	ALLIED MECHANICAL WISCONSIN / APPLETON, WISCONSIN	MIPR	ACC-ROCK ISLAND	Jan 2019	Jan 2020	13,711	0.001	Y		
LOAD, ASSEMBLE, PACK (LAP)	✓	2020	ALLIED MECHANICAL WISCONSIN / APPLETON, WISCONSIN	MIPR	ACC-ROCK ISLAND	Mar 2020	Apr 2021	7,734	0.001	Y		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs	P-1 Line Item Number / Title: 353020 / General Purpose Bombs
---	--

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
--	---	--

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	341.501	811.170	0.000	631.194	631.194	1,106.037	896.535	905.658	484.254	-	5,176.349
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	341.501	811.170	0.000	631.194	631.194	1,106.037	896.535	905.658	484.254	-	5,176.349
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	341.501	811.170	0.000	631.194	631.194	1,106.037	896.535	905.658	484.254	-	5,176.349

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$631.194M for Overseas Contingency Operations (OCO); of which \$344.194M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

CY2019 funding total includes \$551.862M appropriated for Overseas Contingency Operations.

The following Weapon System Cost Elements are represented in this P-1 line:

-MXU-651 B/B (EC31/EC28) is an airfoil group consisting of an aft wing assembly, forward canards and attaching hardware needed to assemble a GBU-10 Laser Guided Bomb (BLU-109 2000lb Hard Target Penetrator Bomb or MK84 2000lb class bomb). The system has folding wings which open upon release for increased maneuverability. This item is procured by Munitions Sustainment Division at Hill AFB.

-MXU-650 Fin Assembly kit (EC32) consists of a tail fin, forward canards and attachment hardware needed to assemble the GBU-12 (MK-82 Warhead, 500lb class) Laser Guided Bomb (LGB). This Fin assembly kit, coupled with a Computer Control Group (ED58) complete the GBU-12 weapons build. These weapons are primarily used for precision bombing against non-hardened targets. This item is procured by Munitions Sustainment Division at Hill AFB.

-MAU-209/MAU-169 (ED58) GBU-10/12 Computer Control Group is a laser homing guidance unit used on the GBU-10 and GBU-12 Laser Guided Bombs, (GBU-10, MK-84 Warhead, 2000lb class or GBU-12, MK-82 Warhead, 500lb class). The system has folding wings which open upon release for maneuverability and increased aircraft payload. This item is procured by Hill AFB. Laser Guided Bombs are essential to meeting training, operational and inventory objective requirements worldwide for precision bombing against hardened and non-hardened targets. Yearly procurements ensure the necessary stock on hand to meet these requirements. Paveway II telemetry (TM) kits are radio monitored modules installed in the GBU-10, 12 and 16 weapon systems that monitor and track data during flight. They provide essential data for issues such as flight failures and weapon accuracy as well as data for the long term sustainment of the weapon system.

-GBU-49 Paveway kit: the Enhanced Paveway II kit for the GBU-49 consists of a MAU-210 G/B Enhanced Computer Control Group (ECCG) and an MXU-650 M/B Air Foil Group (AFG). The ECCG and AFG provide GPS-aided INS and laser terminal guidance capabilities to enable the GBU-49 to engage fixed, re-locatable, and moving targets.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs		P-1 Line Item Number / Title: 353020 / General Purpose Bombs
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>-BLU-117 (ED09) is a 2,000-pound class general purpose bomb. The bomb produces blast and fragmentation effects and can be used as either an unguided high or low drag weapon. When used with a guidance kit, it can be employed as a precision guided bomb. The warhead is used on the GBU-10/12 (PAVEWAY) and Joint Direct Attack Munition (GBU-31) weapon systems. The BLU-117 can also be fuzed with proximity, instantaneous, or delayed fuzes to provide a variety of military effects. This item is procured through the Army Single Manager for Conventional Ammunition (SMCA). The MK-84 is a tritonal-filled variant.</p> <p>-BLU-111 (all variants) is a 500 lb General Purpose Bomb, based on the tritonal-filled MK-82, but with PBXN-109 explosive fill and vented aft closure. It has a relatively thin case with a slender body designed for improved ballistics. It can be employed as general purpose/penetrator bomb delivered in high and low drag modes with ground burst, delayed, or air burst fuzes and as precision guided munitions (GBU-12,-22,-38,or -54) and aerial mines depending on the fin/airfoil group and fuzing. Most variants are procured through the Army Single Manager for Conventional Ammunition (SMCA).</p> <p>-BLU-109 warhead is a 2000-pound hard target penetrator bomb used against bunkers, aircraft shelters, and reinforced concrete structures. The warhead is used on the GBU-10, 24, and 27 as well as Joint Direct Attack Munition (JDAM) GBU-31V3 weapon systems. This item is procured through the Army Single Manager for Conventional Ammunition (SMCA). Variants are filled with tritonal or with a more Insensitive munitions (IM) compliant fill.</p> <p>-BLU-137/B (EE59) Advanced 2,000-pound Penetrator (A2K) is a weapon used against bunkers, aircraft shelters, and reinforced concrete structures and is compatible with the JDAM guidance tail kit. Procurement started in FY18 at Eglin AFB (AFLCMC/EBD) but will transition to Hill AFB (AFLCMC/EBH)~FY20. The BLU-137/B begins to complement the BLU-109 when fielded.</p> <p>-BLU-129/B (ED78) Composite Case Warhead - Carbon fiber composite case for high near-field lethality to deliver 3x reduction in collateral damage. New inventory objective is 1,500.</p> <p>-Next Generation Area Attack Weapons (NGAAWs) are a family of unitary area attack weapons which meet the DoD policy on cluster munitions. It consists of the BLU-134/B and BLU-136/B warheads with a height of burst sensor. The BLU-134/B, Improved Lethality Warhead (ILW), Next Generation Area Attack Weapon Increment I, is a 500 lb area attack warhead with improved lethality against personnel and materiel targets. The unitary warhead meets DoD policy on cluster munitions. The BLU-134/B, Next Generation Area Attack Weapon Increment II, is a 2,000 lb, high fragmentation area attack warhead which, augmented by the BLU-134/B, provides for significant improved lethality against lethality personnel and materiel targets and meets DoD policy on cluster munitions.</p> <p>-Items Less Than Five Million Dollars: All items have an annual procurement of less than \$5,000,000 and are Code A.</p> <p>Portion of FY20-FY24 funding will be used for facilitization efforts. This will enhance production line capacity required to replenish inventory, accommodate large caliber warheads, and provide for alternative explosive fills.</p> <p>Funds may be used to resolve production DMS/MS/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, to include electronic components used commercially and in short supply, and qualification activities to preserve future production capabilities and capacities.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p> <p>Funding for this exhibit contained in PEs: 0208030F, 0207599F</p> <p>As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity:
3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs

P-1 Line Item Number / Title:
353020 / General Purpose Bombs

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	(E466) MK-81, 250LB GP BOMB, TRITONAL				- / -	- / 0.000	- / 0.000	- / 0.000	- / 15.000	- / 15.000
P-40a	(EC32) MXU-650 GCG, FIN ASSEMBLY				- / -	- / 18.000	- / 21.300	- / 0.000	- / 14.797	- / 14.797
P-5	(ED09) BLU-117, 2000LB GP BOMB	P-5a	A		- / -	- / 0.000	- / -	- / -	- / 31.500	- / 31.500
P-5	(ED15) BLU-111A/B 500LB GP BOMB	P-5a	A		- / -	- / 5.000	- / 5.000	- / -	- / 47.000	- / 47.000
P-5	(ED49) BLU-109 2000 LB HARD TARGET BOMB	P-5a	A		- / -	- / 69.176	- / 587.349	- / -	- / 208.799	- / 208.799
P-40a	(ED58) MAU-209C/B CCG				- / 0.000	- / 25.000	- / 41.700	- / -	- / 28.820	- / 28.820
P-40a	(ED78) BLU-129/B 500LB BOMB				- / -	- / 8.125	- / 8.125	- / 0.000	- / 8.125	- / 8.125
P-5	(EE59) BLU-137		A		- / -	- / 43.000	- / 45.500	- / -	- / 51.953	- / 51.953
P-5	(F140) BLU-109/B 2000 LB Hard Target Penetrator		A		- / -	- / -	- / -	- / -	- / 100.000	- / 100.000
P-40a	BLU-134/B CDI 500LB				- / -	- / 84.000	- / 84.996	- / 0.000	- / 85.000	- / 85.000
P-40a	BLU-136/B 2000LB GP BOMB				- / -	- / 0.000	- / 0.000	- / 0.000	- / 23.000	- / 23.000
P-40a	GBU-49				- / 0.000	- / 72.000	- / -	- / -	- / -	- / -
P-40a	GENERAL PURPOSE BOMBS (ITEMS LESS THAN \$5 MILLION)				- / 0.000	- / 17.200	- / 17.200	- / -	- / 17.200	- / 17.200
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 341.501	- / 811.170	- / 0.000	- / 631.194	- / 631.194

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
FY2020 funds purchase 500, 1,000 and 2,000 pound conventional general purpose bombs, and guidance and control kits to provide precision bombing capability. In addition, funds may be used for equipment or support required to enhance production line capacity as required for inventory replenishment. These weapons are used to defeat non-hard, hardened and deeply buried targets, bunkers, aircraft shelters, reinforced concrete structures and various armored targets. Built up with assorted componentry, the bombs can also be employed as Joint Direct Attack Munitions or Laser Guided Bombs.

The Air Force procures munitions to maintain appropriate quantities in the War Reserve Materiel (WRM) Munitions and test and training stockpiles. Active, Guard and Reserve components draw from the WRM stockpiles as required and receive test and training allocations annually based on current-year requirements.

Procurement/Replenishment is required to maintain readiness objectives and worldwide war reserve materiel (WRM) stockpiles to support requirements for penetrator bombs, low collateral damage bombs, and multiple precision guided bomb configurations as determined by the non-nuclear consumables annual analysis (NCAA), to execute DoD approved combat plans and training requirements.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force														Date: February 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13						P-1 Line Item Number / Title: 353020 / General Purpose Bombs						Aggregated Items Title: (E466) MK-81, 250LB GP BOMB, TRITONAL							

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
UNCATEGORIZED																				
(E466) MK-81, 250LB BOMB	A		-	-	-	-	-	0.000	-	-	0.000	-	-	0.000	-	-	15.000	-	-	15.000
Subtotal: UNCATEGORIZED			-	-	-	-	-	0.000	-	-	0.000	-	-	0.000	-	-	15.000	-	-	15.000
Total			-	-	-	-	-	0.000	-	-	0.000	-	-	0.000	-	-	15.000	-	-	15.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13 **P-1 Line Item Number / Title:** 353020 / General Purpose Bombs **Aggregated Items Title:** (EC32) MXU-650 GCG, FIN ASSEMBLY

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
MXU-650 FIN ASSEMBLY - EC32	A		-	-	-	0.004	4,500	18.000	0.004	5,592	21.300	-	-	0.000	0.004	3,840	14.797	0.004	3,840	14.797
Subtotal: Uncategorized			-	-	-	-	-	18.000	-	-	21.300	-	-	0.000	-	-	14.797	-	-	14.797
Total			-	-	-	-	-	18.000	-	-	21.300	-	-	0.000	-	-	14.797	-	-	14.797

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:

Prices shown reflect the average unit cost of split-award contracts plus inflation. Due to the competitive nature of the currently qualified vendors, estimated unit cost information from the vendors is not available for planning purposes.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Item Number / Title [DODIC]: (ED09) BLU-117, 2000LB GP BOMB

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	0.000	-	-	31.500	31.500
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	0.000	-	-	31.500	31.500
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	0.000	-	-	31.500	31.500

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	-	-	-	0.000	-	-	-	-	-	-	0.005	2,378	11.966	0.005	2,378	11.966
BOMB BODY 2000LB MK84 MOD 10 IM	-	-	-	-	-	0.000	-	-	-	-	-	-	0.006	2,341	13.540	0.006	2,341	13.540
LUG SUSP ACFT ORD MK3-0	-	-	-	-	-	0.000	-	-	-	-	-	-	0.000	4,830	0.725	0.000	4,830	0.725
CXM-AF7	-	-	-	-	-	0.000	-	-	-	-	-	-	0.000	301,147	4.725	0.000	301,147	4.725
PALLET MK79-1	-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	0.189	-	-	0.189
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	31.145	-	-	31.145
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	31.145	-	-	31.145
Support - Support End Item Cost																		
PRODUCTION ENGINEERING	-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	0.268	-	-	0.268
QUALITY ASSURANCE	-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	0.008	-	-	0.008
FIRST ARTICLE TEST	-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	0.079	-	-	0.079
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	0.355	-	-	0.355
Gross/Weapon System Cost	-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	31.500	-	-	31.500

Remarks:

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Item Number / Title [DODIC]: (ED09) BLU-117, 2000LB GP BOMB
ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:	
<p>This cost analysis represents the Single Manager for Conventional Ammunition (SMCA) efforts to obtain hardware, containers, pallets, straps, explosive material, lugs, etc. for the DoD Military Services purchasing the same or similar items, and to load, assemble and pack (LAP) the Air Force order.</p> <p>The load, assemble, pack (LAP) quantity is the number of completed rounds to be delivered into the AF inventory. The ammunition production plant provides the LAP price to SMCA, which includes cost to receive bomb bodies and for miscellaneous explosives, fillers and packing materials used to produce an inventory-worthy round.</p> <p>Bomb Body price, provided by the manufacturer to SMCA, is the unit price of an empty bomb body/casing. Developing the cost for a completed round, SMCA applies a Production Loss Factor (PLF) to estimate an additional quantity of bomb bodies/casings to mitigate risks during production of complete rounds. Risks may include defective bomb body or need to replace the body after filled with a nonconforming batch of explosives.</p> <p>Primary cost drivers include the total military customer orders (increases/decreases), complex or scarce materials, economic price adjustments, currency rate fluctuations.</p> <p>(†) indicates the presence of a P-5a</p>		

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Item Number / Title [DODIC]: (ED09) BLU-117, 2000LB GP BOMB
--	--	---

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)	✓	2020	MCALESTER ARMY AMMUNITION PLANT / MCALESTER, OK	MIPR	ACC-ROCK ISLAND	Jun 2020	Jun 2021	2,378	0.005	Y		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Item Number / Title [DODIC]: (ED15) BLU-111A/B 500LB GP BOMB

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	5.000	5.000	-	47.000	47.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	5.000	5.000	-	47.000	47.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	5.000	5.000	-	47.000	47.000

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Cost Cost																		
Recurring Cost																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	-	0.002	787	1.234	0.002	904	1.831	-	-	-	0.000	9,828	1.551	0.000	9,828	1.551
BOMB BODY 500 LB MK82 MOD 6 IM	-	-	-	0.002	787	1.954	0.001	904	1.342	-	-	-	0.002	9,820	23.031	0.002	9,820	23.031
LUG SUSP ACFT ORD MS3314	-	-	-	0.000	1,574	0.054	0.000	1,808	0.052	-	-	-	0.000	19,307	1.081	0.000	19,307	1.081
CXM-7	-	-	-	0.000	102,310	1.566	0.000	117,520	1.614	-	-	-	0.000	1,288,081	20.210	0.000	1,288,081	20.210
PALLET INSPECTION, MHU-122E	-	-	-	0.000	131	0.025	0.000	151	0.028	-	-	-	0.000	2,000	0.376	0.000	2,000	0.376
PALLET MHU-122/E	-	-	-	0.000	131	0.031	0.000	151	0.036	-	-	-	0.000	1,762	0.423	0.000	1,762	0.423
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	4.864	-	-	4.903	-	-	-	-	-	46.671	-	-	46.671
<i>Subtotal: Hardware - Cost Cost</i>	-	-	-	-	-	4.864	-	-	4.903	-	-	-	-	-	46.671	-	-	46.671
Support - Support End Item Cost																		
PRODUCTION ENGINEERING	-	-	-	-	-	0.069	-	-	0.080	-	-	-	-	-	0.259	-	-	0.259
QUALITY ASSURANCE	-	-	-	-	-	0.004	-	-	0.010	-	-	-	-	-	0.016	-	-	0.016
FIRST ARTICLE TEST	-	-	-	-	-	0.047	-	-	0.007	-	-	-	-	-	0.054	-	-	0.054
ACCEPTANCE TESTING	-	-	-	-	-	0.016	-	-	0.000	-	-	-	-	-	0.000	-	-	0.000
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	0.136	-	-	0.097	-	-	-	-	-	0.329	-	-	0.329

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13		P-1 Line Item Number / Title: 353020 / General Purpose Bombs
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Gross/Weapon System Cost	-	-	-	-	-	5.000	-	-	5.000	-	-	-	-	-	47.000	-	-	47.000

Remarks:

This cost analysis represents the Single Manager for Conventional Ammunition (SMCA) efforts to obtain hardware, containers, pallets, straps, explosive material, lugs, etc. for the DoD Military Services purchasing the same or similar items, and to load, assemble and pack (LAP) the Air Force order.

The load, assemble, pack (LAP) quantity is the number of completed rounds to be delivered into the AF inventory. The ammunition production plant provides the LAP price to SMCA, which includes cost to receive bomb bodies and for miscellaneous explosives, fillers and packing materials used to produce an inventory-worthy round.

Bomb Body price, provided by the manufacturer to SMCA, is the unit price of an empty bomb body/casing. Developing the cost for a completed round, SMCA applies a Production Loss Factor (PLF) to estimate an additional quantity of bomb bodies/casings to mitigate risks during production of complete rounds. Risks may include defective bomb body or need to replace the body after filled with a nonconforming batch of explosives.

Primary cost drivers include the total military customer orders (increases/decreases), complex or scarce materials, economic price adjustments, currency rate fluctuations.

(t) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Item Number / Title [DODIC]: (ED15) BLU-111A/B 500LB GP BOMB
--	--	--

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2018	MCALESTER ARMY AMMUNITION PLANT / MCALESTER, OK	MIPR	ACC-ROCK ISLAND	Jun 2018	Jun 2019	787	0.002	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	MCALESTER ARMY AMMUNITION PLANT / MCALESTER, OK	MIPR	ACC-ROCK ISLAND	Jun 2019	Jun 2020	904	0.002	Y		
LOAD, ASSEMBLE, PACK (LAP)	✓	2020	MCALESTER ARMY AMMUNITION PLANT / MCALESTER, OK	MIPR	ACC-ROCK ISLAND	Jun 2020	Jun 2021	9,828	0.000	Y		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Item Number / Title [DODIC]: (ED49) BLU-109 2000 LB HARD TARGET BOMB

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	69.176	587.349	-	208.799	208.799
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	69.176	587.349	-	208.799	208.799
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	69.176	587.349	-	208.799	208.799

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
LOAD, ASSEMBLE, PACK ^(†)	-	-	-	0.008	2,045	16.478	0.008	18,426	145.561	-	-	-	0.009	6,044	53.792	0.009	6,044	53.792
BOMB BODY, 2000LB BLU-109/B	-	-	-	0.021	2,006	41.606	0.020	17,760	361.293	-	-	-	0.021	6,044	126.205	0.021	6,044	126.205
CONTAINER, CNU-417/E	-	-	-	0.002	1,023	2.231	0.002	9,213	19.510	-	-	-	0.002	3,022	6.554	0.002	3,022	6.554
CXM-AF-5	-	-	-	0.000	347,650	8.476	0.000	3,132,420	59.641	-	-	-	0.000	1,027,480	21.217	0.000	1,027,480	21.217
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	68.791	-	-	586.006	-	-	-	-	-	207.768	-	-	207.768
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	68.791	-	-	586.006	-	-	-	-	-	207.768	-	-	207.768
Support - Support End Item Cost																		
PRODUCTION ENGINEERING	-	-	-	-	-	0.249	-	-	0.930	-	-	-	-	-	0.790	-	-	0.790
QUALITY ASSURANCE	-	-	-	-	-	0.026	-	-	0.028	-	-	-	-	-	0.021	-	-	0.021
FIRST ARTICLE TEST	-	-	-	-	-	0.110	-	-	0.385	-	-	-	-	-	0.220	-	-	0.220
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	0.385	-	-	1.343	-	-	-	-	-	1.031	-	-	1.031
Gross/Weapon System Cost	-	-	-	-	-	69.176	-	-	587.349	-	-	-	-	-	208.799	-	-	208.799

Remarks:

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Item Number / Title [DODIC]: (ED49) BLU-109 2000 LB HARD TARGET BOMB
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
<p>This cost analysis represents the Single Manager for Conventional Ammunition (SMCA) efforts to obtain hardware, containers, pallets, straps, explosive material, lugs, etc. for the DoD Military Services purchasing the same or similar items, and to load, assemble and pack (LAP) the Air Force order.</p> <p>The load, assemble, pack (LAP) quantity is the number of completed rounds to be delivered into the AF inventory. The ammunition production plant provides the LAP price to SMCA, which includes cost to receive bomb bodies and for miscellaneous explosives, fillers and packing materials used to produce an inventory-worthy round.</p> <p>Bomb Body price, provided by the manufacturer to SMCA, is the unit price of an empty bomb body/casing. Developing the cost for a completed round, SMCA applies a Production Loss Factor (PLF) to estimate an additional quantity of bomb bodies/casings to mitigate risks during production of complete rounds. Risks may include defective bomb body or need to replace the body after filled with a nonconforming batch of explosives.</p> <p>Primary cost drivers include the total military customer orders (increases/decreases), complex or scarce materials, economic price adjustments, currency rate fluctuations.</p> <p>The BLU-137/B Advanced 2,000-pound Penetrator (A2K) will eventually begin to replace the BLU-109 C/B. The BLU-137/B will be initially procured through AFLCMC/EBD at Eglin AFB in FY18 and will transition to Hill (AFLCMC/EBH) for future procurement.</p> <p>(t) indicates the presence of a P-5a</p>		

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force							Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13			P-1 Line Item Number / Title: 353020 / General Purpose Bombs				Item Number / Title [DODIC]: (ED49) BLU-109 2000 LB HARD TARGET BOMB				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK		2018	MCALESTER ARMY AMMUNITION PLANT / MCALESTER, OK	MIPR	ACC-ROCK ISLAND	Jun 2018	Jul 2019	2,045	0.008	Y		
LOAD, ASSEMBLE, PACK		2019	MCALESTER ARMY AMMUNITION PLANT / MCALESTER, OK	MIPR	ACC-ROCK ISLAND	Jun 2019	Jun 2020	18,426	0.008	Y		
LOAD, ASSEMBLE, PACK	✓	2020	MCALESTER ARMY AMMUNITION PLANT / MCALESTER, OK	MIPR	ACC-ROCK ISLAND	Jun 2020	Jun 2021	6,044	0.009	Y		

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Aggregated Items Title: (ED58) MAU-209C/B CCG
--	--	---

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
MAU-209C/B - ED58	A		-	-	0.000	0.007	3,571	25.000	0.008	5,385	41.700	-	-	-	0.008	3,679	28.820	0.008	3,679	28.820
Subtotal: Uncategorized			-	-	0.000	-	-	25.000	-	-	41.700	-	-	-	-	-	28.820	-	-	28.820
Total			-	-	0.000	-	-	25.000	-	-	41.700	-	-	-	-	-	28.820	-	-	28.820

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:

Prices shown reflect the average unit cost of split-award contracts plus inflation. Due to the competitive nature of the currently qualified vendors, estimated unit costs are not available for planning purposes.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13 **P-1 Line Item Number / Title:** 353020 / General Purpose Bombs **Aggregated Items Title:** (ED78) BLU-129/B 500LB BOMB

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
BLU-129/B 500LB BOMB	A		-	-	-	-	-	8.125	0.116	70	8.125	-	-	0.000	0.116	70	8.125	0.116	70	8.125
Subtotal: Uncategorized			-	-	-	-	-	8.125	-	-	8.125	-	-	0.000	-	-	8.125	-	-	8.125
Total			-	-	-	-	-	8.125	-	-	8.125	-	-	0.000	-	-	8.125	-	-	8.125

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:

BLU-129/B Composite Case Warhead - carbon fiber composite case for high near-field lethality to deliver 3x reduction in collateral damage.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Item Number / Title [DODIC]: (EE59) BLU-137

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	43.000	45.500	-	51.953	51.953
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	43.000	45.500	-	51.953	51.953
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	43.000	45.500	-	51.953	51.953

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - (EE59) BLU-137 Cost																		
Recurring Cost																		
Load Assemble Pack (LAP)	-	-	-	0.030	500	15.046	0.013	1,000	12.951	-	-	-	0.019	1,000	18.601	0.019	1,000	18.601
BLU-137/B Warhead Case and Assembly	-	-	-	0.033	500	16.720	0.031	1,000	31.330	-	-	-	0.032	1,000	32.270	0.032	1,000	32.270
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	31.766	-	-	44.281	-	-	-	-	-	50.871	-	-	50.871
<i>Subtotal: Hardware - (EE59) BLU-137 Cost</i>	-	-	-	-	-	31.766	-	-	44.281	-	-	-	-	-	50.871	-	-	50.871
Support - (EE59) BLU-137 Cost																		
Production Engineering	-	-	-	-	-	11.104	-	-	1.109	-	-	-	-	-	1.082	-	-	1.082
First Article Acceptance Test	-	-	-	-	-	0.130	-	-	0.110	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - (EE59) BLU-137 Cost</i>	-	-	-	-	-	11.234	-	-	1.219	-	-	-	-	-	1.082	-	-	1.082
Gross/Weapon System Cost	-	-	-	-	-	43.000	-	-	45.500	-	-	-	-	-	51.953	-	-	51.953

Remarks:

The Advanced 2,000-pound Penetrator (A2K) is a weapon used against bunkers, aircraft shelters, and reinforced concrete structures and is compatible with the JDAM guidance tail kit. Procurement started in FY18 at Eglin AFB (AFLCMC/EBD) but will transition to Hill AFB (AFLCMC/EBH)~FY20. The BLU-137/B begins to complement the BLU-109 when fielded.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Item Number / Title [DODIC]: (F140) BLU-109/B 2000 LB Hard Target Penetrator

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	-	-	-	100.000	100.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	-	100.000	100.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	-	100.000	100.000

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - (F140) BLU-109/B 2000 LB Hard Target Penetrator Cost																		
Recurring Cost																		
LOAD, ASSEMBLE, PACK (LAP)	-	-	-	-	-	-	-	-	-	-	-	-	0.004	2,877	12.002	0.004	2,877	12.002
BOMB BODY, 2000LB BLU-109/B TRITONAL	-	-	-	-	-	-	-	-	-	-	-	-	0.023	3,056	70.907	0.023	3,056	70.907
TNT	-	-	-	-	-	-	-	-	-	-	-	-	0.000	1,654,136	11.000	0.000	1,654,136	11.000
ALUMINUM POWDER	-	-	-	-	-	-	-	-	-	-	-	-	0.000	550,458	1.800	0.000	550,458	1.800
SHIP CONTAINER	-	-	-	-	-	-	-	-	-	-	-	-	0.002	1,521	3.702	0.002	1,521	3.702
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99.410	-	-	99.410
<i>Subtotal: Hardware - (F140) BLU-109/B 2000 LB Hard Target Penetrator Cost</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99.410	-	-	99.410
Support - (F140) BLU-109/B 2000 LB Hard Target Penetrator Cost																		
PRODUCTION SUPPORT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.590	-	-	0.590
<i>Subtotal: Support - (F140) BLU-109/B 2000 LB Hard Target Penetrator Cost</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.590	-	-	0.590
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.000	-	-	100.000

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Aggregated Items Title: BLU-134/B CDI 500LB
--	--	---

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
BLU-134/B, CDI 500 lb	A		-	-	-	-	-	84.000	-	-	84.996	-	-	0.000	0.009	9,274	85.000	0.009	9,274	85.000
Subtotal: Uncategorized			-	-	-	-	-	84.000	-	-	84.996	-	-	0.000	-	-	85.000	-	-	85.000
Total			-	-	-	-	-	84.000	-	-	84.996	-	-	0.000	-	-	85.000	-	-	85.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:

Next Generation Area Attack Weapons (NGAAWs) are a family of unitary area attack weapons which meet the DoD policy on cluster munitions. They consist of BLU-134/B and BLU-136/B warheads with a height of burst sensor.

BLU-134/B, Improved Lethality Warhead (ILW), NGAAW Increment I, is a 500 lb area attack warhead with improved lethality against personnel and materiel targets. The unitary warhead meets DoD policy on cluster munitions.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Aggregated Items Title: BLU-136/B 2000LB GP BOMB
--	--	--

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
BLU-136/B, 2,000 lb.	A		-	-	-	-	-	0.000	-	-	0.000	-	-	0.000	-	-	23.000	-	-	23.000
Subtotal: Uncategorized			-	-	-	-	-	0.000	-	-	0.000	-	-	0.000	-	-	23.000	-	-	23.000
Total			-	-	-	-	-	0.000	-	-	0.000	-	-	0.000	-	-	23.000	-	-	23.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
 Next Generation Area Attack Weapons (NGAAWs) are a family of unitary area attack weapons which meet the DoD policy on cluster munitions. It consists of the BLU-134/B and BLU-136/B warheads with a cockpit-selectable height of burst sensor.

 BLU-136/B, NGAAW Increment II, is a 2,000 lb area attack warhead which, augmented by the BLU-134/B, provides for significant improvement of lethality against personnel and materiel targets while meeting the DoD policy on cluster munitions.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353020 / General Purpose Bombs	Aggregated Items Title: GBU-49
--	--	--

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
GBU-49	A		-	-	0.000	-	-	72.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Uncategorized			-	-	0.000	-	-	72.000	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	0.000	-	-	72.000	-	-	-	-	-	-	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
Procurement of 1,200 guidance kits (notional inventory requirement), necessary support equipment, and qualification testing.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force															Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13						P-1 Line Item Number / Title: 353020 / General Purpose Bombs						Aggregated Items Title: GENERAL PURPOSE BOMBS (ITEMS LESS THAN \$5 MILLION)							

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
MXU-651 AFG, GBU-10 (EC31)	A		-	-	-	0.009	211	1.800	-	-	1.800	-	-	-	-	-	1.800	-	-	1.800
BOMB FUZE PROTECTION ASSEMBLY (ED67)	A		-	-	-	0.000	4,310	0.500	-	-	0.500	-	-	-	-	-	0.500	-	-	0.500
MK84 FIN ASSEMBLY (F607)	A		-	-	-	0.001	1,308	1.000	-	-	1.000	-	-	-	-	-	1.000	-	-	1.000
FIN ASSY BSU-33B/B (EE10)	A		-	-	-	0.000	10,879	3.000	-	-	3.000	-	-	-	-	-	3.000	-	-	3.000
(ED41) BLU-110B/B GENERAL PURPOSE BOMB	A		-	-	0.000	-	-	0.000	-	-	0.000	-	-	-	-	-	-	-	-	-
IM	A		-	-	-	-	-	2.000	-	-	2.000	-	-	-	-	-	2.000	-	-	2.000
LWIP	A		-	-	-	-	-	3.000	-	-	3.000	-	-	-	-	-	3.000	-	-	3.000
GP BOMB IM PRODUCTION ENGINEERING	A		-	-	-	-	-	4.900	-	-	4.900	-	-	-	-	-	4.900	-	-	4.900
PMA OTHER GOVERNMENT COSTS	A		-	-	-	-	-	1.000	-	-	1.000	-	-	-	-	-	1.000	-	-	1.000
Subtotal: Uncategorized			-	-	0.000	-	-	17.200	-	-	17.200	-	-	-	-	-	17.200	-	-	17.200
Total			-	-	0.000	-	-	17.200	-	-	17.200	-	-	-	-	-	17.200	-	-	17.200

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs	P-1 Line Item Number / Title: 353190 / Massive Ordnance Penetrator (MOP)
--	--

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604327F
---	--	--

Line Item MDAP/MAIS Code: 527

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	46.190	38.382	38.111	0.000	-	0.000	0.000	0.000	0.000	0.000	-	122.683
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	46.190	38.382	38.111	0.000	-	0.000	0.000	0.000	0.000	0.000	-	122.683
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	46.190	38.382	38.111	0.000	-	0.000	0.000	0.000	0.000	0.000	-	122.683

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Massive Ordnance Penetrator (MOP) is a 30,000 lb class precision guided penetrator designed to defeat hard and deeply buried targets.

Funds may be used to address long lead items as well as emerging and short-notice Diminishing Manufacturing and Material Shortage (DMSMS) issues.

Funding for this exhibit is contained in PE 0208030F, project 353190.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs **P-1 Line Item Number / Title:** 353190 / Massive Ordnance Penetrator (MOP)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604327F

Line Item MDAP/MAIS Code: 527

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	Massive Ordnance Penetrator (MOP)		A		- / 46.190	- / 38.382	- / 38.111	- / 0.000	- / -	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 46.190	- / 38.382	- / 38.111	- / 0.000	- / -	- / 0.000

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
No FY20 funding requested.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353190 / Massive Ordnance Penetrator (MOP)	Item Number / Title [DODIC]: Massive Ordnance Penetrator (MOP)

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	46.190	38.382	38.111	0.000	-	0.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	46.190	38.382	38.111	0.000	-	0.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	46.190	38.382	38.111	0.000	-	0.000

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - MASSIVE ORDNANCE PENETRATOR (MOP) Cost																		
Recurring Cost																		
MASSIVE ORDNANCE PENETRATOR (MOP)	-	-	46.190	-	-	38.382	-	-	38.111	-	-	0.000	-	-	-	-	-	0.000
<i>Subtotal: Recurring Cost</i>	-	-	46.190	-	-	38.382	-	-	38.111	-	-	0.000	-	-	-	-	-	0.000
<i>Subtotal: Hardware - MASSIVE ORDNANCE PENETRATOR (MOP) Cost</i>	-	-	46.190	-	-	38.382	-	-	38.111	-	-	0.000	-	-	-	-	-	0.000
Gross/Weapon System Cost	-	-	46.190	-	-	38.382	-	-	38.111	-	-	0.000	-	-	-	-	-	0.000

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs	P-1 Line Item Number / Title: 353620 / Joint Direct Attack Munition
---	---

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
---	--	-------------------------------------

Line Item MDAP/MAIS Code: 503

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	239,813	35,106	36,000	-	37,000	37,000	6,800	9,000	6,000	500	-	370,219
Gross/Weapon System Cost (<i>\$ in Millions</i>)	5,685.244	985.102	922.649	0.000	1,066.224	1,066.224	268.002	314.833	268.061	110.578	0.000	9,620.693
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	5,685.244	985.102	922.649	0.000	1,066.224	1,066.224	268.002	314.833	268.061	110.578	0.000	9,620.693
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	5,685.244	985.102	922.649	0.000	1,066.224	1,066.224	268.002	314.833	268.061	110.578	0.000	9,620.693

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	0.024	0.028	0.026	-	0.029	0.029	0.039	0.035	0.045	0.221	-	0.026

Description:

FY 2018 funding totals include \$440.577M appropriated for Overseas Contingency Operations (OCO). These funds procure 19,961 JDAM guidance kits.
 FY 2019 funding totals include \$688.451M appropriated for OCO. These funds procure 27,661 JDAM guidance kits.

FY2020 funding totals include \$0.0M for Base and \$1,066.224M for Overseas Contingency Operations (OCO); of which \$1,066.224M and 37,000 quantity is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

The Joint Direct Attack Munition (JDAM) program is a joint Air Force/Navy program with the Air Force as the lead service. Designated ACAT 1C, this program upgrades the existing inventory of general purpose bombs (MK-82, MK-83, MK-84, BLU-109, and BLU-137) by integrating the bombs with a field installed guidance kit using a Global Positioning System-aided Inertial Navigation System (GPS/INS). JDAM provides an accurate, adverse weather capability. JDAM is integrated with the B-52H, B-2A, B-1B, F-16 (all variants), F/A-18A+/C/D/E/F, F-15E, AV-8B, A-10C and F-22A aircraft. Integration with the MQ-9 and F-35 are in progress.

The Air Force is developing the BLU-137 which is a modernized 2,000-lb. warhead penetrator. The BLU-137 will increase fuze survivability when used against bunkers, aircraft shelters, and reinforced targets. This new warhead uses a modified JDAM tail kit hardback design which will increase tail kit unit costs for this variant.

The Air Force is procuring Strategic Anti-Jam Beamforming Receiver Y-Code (SABR-Y) tail kits which are enhanced GPS-denied environment guidance systems. The SABR-Y procurement is in response to a UON. The SABR-Y tail kit will increase anti-jam capabilities in GPS degraded theaters. This new tail kit leverages existing JDAM tail kit designs but with the upgraded GPS receiver per unit costs will increase for this variant.

Pursuant to section 2308 of Title 10, U.S. Code, this program will seek cost efficiencies where available through production lot negotiations. This program will continue procurement past FY 2024 due to evolving warfighter requirements driven by ongoing combat expenditures.

Funds may be used to resolve production DMS/MS/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, to include electronic components used commercially and in short supply; and qualification activities to preserve future production capabilities and capacities.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs		P-1 Line Item Number / Title: 353620 / Joint Direct Attack Munition
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: 503		

Funding may be used to increase production capacity in order to meet warfighter demand.

Funding for this exhibit contained in PE 0207583F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs	P-1 Line Item Number / Title: 353620 / Joint Direct Attack Munition
---	---

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
--	---	--

Line Item MDAP/MAIS Code: 503

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	Joint Direct Attack Munition	P-5a, P-21	A		239,813 / 5,685.244	35,106 / 985.102	36,000 / 922.649	- / 0.000	37,000 / 1,066.224	37,000 / 1,066.224
P-40	Total Gross/Weapon System Cost				239,813 / 5,685.244	35,106 / 985.102	36,000 / 922.649	- / 0.000	37,000 / 1,066.224	37,000 / 1,066.224

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2020 funding totals include \$1,066.224M to procure 37,000 JDAM guidance kits.
 This program procures JDAM guidance kits, laser sensors, airborne test equipment, and supporting activities to include software block upgrades and other technical services. The hardware purchase includes a mixture of JDAM guidance kits for the MK-82, MK-83, MK-84, BLU-109 and BLU-137 as well as precision laser guidance sensors, and airborne test equipment for flight test.
 This procurement is critical to replenish stockpiles supporting on-going warfighter missions in which JDAM comprises the majority of combat expenditures.
 Note: Procurement quantities can change based on negotiated options/pricing curves and available funding, in accordance with Title 10, U.S. Code Section 2308 BUY-TO-BUDGET ACQUISITION.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13		P-1 Line Item Number / Title: 353620 / Joint Direct Attack Munition
		Item Number / Title [DODIC]: Joint Direct Attack Munition

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	239,813	35,106	36,000	-	37,000	37,000
Gross/Weapon System Cost (\$ in Millions)	5,685.244	985.102	922.649	0.000	1,066.224	1,066.224
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	5,685.244	985.102	922.649	0.000	1,066.224	1,066.224
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	5,685.244	985.102	922.649	0.000	1,066.224	1,066.224

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	0.024	0.028	0.026	-	0.029	0.029

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - END ITEM Cost																		
Recurring Cost																		
JDAM TAIL KIT ⁽¹⁾	0.022	239,813	5,219.702	0.024	35,106	848.951	0.023	36,000	839.743	-	-	0.000	0.025	37,000	920.775	0.025	37,000	920.775
LASER SENSOR	0.013	14,930	192.223	0.013	8,182	103.964	0.012	3,500	43.668	-	-	-	0.013	10,000	127.047	0.013	10,000	127.047
<i>Subtotal: Recurring Cost</i>	-	-	5,411.925	-	-	952.915	-	-	883.411	-	-	0.000	-	-	1,047.822	-	-	1,047.822
<i>Subtotal: Hardware - END ITEM Cost</i>	-	-	5,411.925	-	-	952.915	-	-	883.411	-	-	0.000	-	-	1,047.822	-	-	1,047.822
Ancillary Equipment - TEST EQUIPMENT Cost																		
Recurring Cost																		
AIRBORNE TEST EQUIPMENT	-	-	83.749	-	-	16.876	-	-	0.959	-	-	-	-	-	8.166	-	-	8.166
<i>Subtotal: Recurring Cost</i>	-	-	83.749	-	-	16.876	-	-	0.959	-	-	-	-	-	8.166	-	-	8.166
<i>Subtotal: Ancillary Equipment - TEST EQUIPMENT Cost</i>	-	-	83.749	-	-	16.876	-	-	0.959	-	-	-	-	-	8.166	-	-	8.166
Support - END ITEM SUPPORT Cost																		
PROGRAM MANAGEMENT ADMINISTRATION	-	-	47.253	-	-	3.444	-	-	3.309	-	-	-	-	-	3.353	-	-	3.353
PRODUCTION SUSTAINING ENGINEERING	-	-	142.317	-	-	11.867	-	-	34.970	-	-	-	-	-	6.883	-	-	6.883
<i>Subtotal: Support - END ITEM SUPPORT Cost</i>	-	-	189.570	-	-	15.311	-	-	38.279	-	-	-	-	-	10.236	-	-	10.236

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force												Date: February 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13						P-1 Line Item Number / Title: 353620 / Joint Direct Attack Munition						Item Number / Title [DODIC]: Joint Direct Attack Munition					
ID Code (A=Service Ready, B=Not Service Ready) : A												MDAP/MAIS Code:					

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Gross/Weapon System Cost	0.024	239,813	5,685.244	0.028	35,106	985.102	0.026	36,000	922.649	-	-	0.000	0.029	37,000	1,066.224	0.029	37,000	1,066.224

(t) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353620 / Joint Direct Attack Munition	Item Number / Title [DODIC]: Joint Direct Attack Munition
--	---	---

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
JDAM TAIL KIT ^(†)		2018	BOEING / ST CHARLES, MO	SS / FPIF	AFLCMC Hill AFB	Mar 2018	Feb 2019	35,106	0.024	Y		Oct 2013
JDAM TAIL KIT ^(†)		2019	BOEING / ST CHARLES, MO	SS / FPIF	AFLCMC Hill AFB	Feb 2019	Feb 2020	36,000	0.023	Y		Aug 2017
JDAM TAIL KIT ^(†)		2020	BOEING / ST CHARLES, MO	SS / FPIF	AFLCMC Hill AFB	Feb 2020	Feb 2021	0	0.000	Y		Aug 2017
JDAM TAIL KIT ^(†)	✓	2020	BOEING / ST CHARLES, MO	SS / FPIF	AFLCMC Hill AFB	Feb 2020	Feb 2021	37,000	0.025	Y		Aug 2017

^(†) indicates the presence of a P-21

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353620 / Joint Direct Attack Munition	Item Number / Title [DODIC]: Joint Direct Attack Munition
--	---	---

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2020														Fiscal Year 2021												B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 9	BAL D U E A S O F 1 O C T	Calendar Year 2020														Calendar Year 2021												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
JDAM TAIL KIT																																	
Prior Years Deliveries: 239813																																	
	1	2018	AF	35.106	23.400	11.706	2.925	2.925	2.925	2.931																				.000			
	1	2018	FMS (+)	3.002	2.000	1.002	.250	.250	.250	.252																				.000			
	1	2018	NAVY (+)	7.758	5.168	2.590	.646	.646	.646	.652																				.000			
	1	2018	Total	45.866	30.568	15.298	3.821	3.821	3.821	3.835	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
	1	2019	AF	36.000	.000	36.000	-	-	-	-	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	.000			
	1	2019	FMS (+)	2.299	.000	2.299	-	-	-	-	.191	.191	.191	.191	.191	.191	.191	.191	.191	.191	.191	.191	.191	.191	.191	.191	.191	.198		.000			
	1	2019	NAVY (+)	7.594	.000	7.594	-	-	-	-	.632	.632	.632	.632	.632	.632	.632	.632	.632	.632	.632	.632	.632	.632	.632	.642			.000				
	1	2019	Total	45.893	.000	45.893	-	-	-	-	3.823	3.823	3.823	3.823	3.823	3.823	3.823	3.823	3.823	3.823	3.823	3.823	3.823	3.840	-	-	-	-	-	.000			
	1	2020	FMS (+)	2.000	.000	2.000					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.166	.166	.166	.166	.672			
	1	2020	NAVY (+)	3.388	.000	3.388					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.282	.282	.282	.282	1.132			
	1	2020	Total Base	5.388	.000	5.388					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.448	.448	.448	.448	1.804			
✓	1	2020	AF	37.000	.000	37.000					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.083	3.083	3.083	3.083	12.336			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353620 / Joint Direct Attack Munition	Item Number / Title [DODIC]: Joint Direct Attack Munition
--	---	---

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2022														Fiscal Year 2023												BALANCE				
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022														Calendar Year 2023														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
JDAM TAIL KIT																																			
Prior Years Deliveries: 239813																																			
	1	2018	AF	35.106	35.106	.000																													.000
	1	2018	FMS (+)	3.002	3.002	.000																													.000
	1	2018	NAVY (+)	7.758	7.758	.000																													.000
	1	2018	Total	45.866	45.866	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
	1	2019	AF	36.000	36.000	.000																													.000
	1	2019	FMS (+)	2.299	2.299	.000																													.000
	1	2019	NAVY (+)	7.594	7.594	.000																													.000
	1	2019	Total	45.893	45.893	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
	1	2020	FMS (+)	2.000	1.328	.672	.166	.166	.166	.174																									.000
	1	2020	NAVY (+)	3.388	2.256	1.132	.282	.282	.282	.286																									.000
	1	2020	Total Base	5.388	3.584	1.804	.448	.448	.448	.460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
✓	1	2020	AF	37.000	24.664	12.336	3.083	3.083	3.083	3.087																									.000
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 353620 / Joint Direct Attack Munition	Item Number / Title [DODIC]: Joint Direct Attack Munition
--	---	---

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)								
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder				
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	
1	BOEING - ST CHARLES, MO	10,500	18,900	45,000	0	0	0	0	0	0	5	12	17

(‡) Delivery rows marked with this symbol indicate that they are funded through a separate Line Item. See the respective components' exhibits for details, including the full delivery schedule. "A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs	P-1 Line Item Number / Title: 354040 / B61
---	--

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0101125F	Other Related Program Elements: N/A
--	--	--

Line Item MDAP/MAIS Code: 468

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	30	250	-	533	533	-	-	-	-	-	813
Gross/Weapon System Cost (<i>\$ in Millions</i>)	12.041	63.668	110.731	0.000	133.504	133.504	35.720	2.800	0.000	0.000	0.000	358.464
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	0.000	11.239	0.000	52.731	52.731	0.000	0.000	0.000	0.000	-	63.970
Net Procurement (P-1) (<i>\$ in Millions</i>)	12.041	63.668	99.492	0.000	80.773	80.773	35.720	2.800	0.000	0.000	0.000	294.494
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	11.239	52.731	0.000	-	0.000	0.000	0.000	0.000	0.000	-	63.970
Total Obligation Authority (<i>\$ in Millions</i>)	12.041	74.907	152.223	0.000	80.773	80.773	35.720	2.800	0.000	0.000	0.000	358.464

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	2.122	0.443	-	0.250	0.250	-	-	-	-	-	0.441

Description:

FY2020 funding totals include \$0.0M for Base and \$80.773M for Overseas Contingency Operations (OCO); of which \$80.773M and 533 quantity is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

The purpose of this program is to conduct and support United States Air Force (USAF) and Joint Department of Defense (DoD) / Department of Energy (DOE) acquisition activities for the modernization of nuclear weapons.

B61-12 Life Extension Program (LEP): The B61-12 LEP will integrate DOE efforts to extend the service life of the warhead with DoD efforts to develop a guided Tail Kit Assembly (TKA) required to maintain current B61 mission characteristics. Programmatic integration of the Air Force-led, joint DoD-DOE program is accomplished through the B61 LEP Project Officers Group (POG) and its subgroups. In accordance with Air Force Materiel Command mission assignment memo (dated 17 Feb 11) and National Nuclear Security Administration (NNSA)-Air Force Nuclear Weapons Center (AFNWC) Memorandum of Understanding (MOU dated 28 Jun 12), the USAF is responsible for development, acquisition and delivery of a guided TKA and for All Up Round (AUR) technical integration, system qualification and fielding of the B61-12 variant on multiple platforms. The production effort for the B61 TKA includes the production and delivery of TKAs, accessories, spares, ancillary equipment, Code Management System equipment, TKA and AUR trainers, lot acceptance test assets, and support. The B61 DT program is complete and IOT&E is on schedule for 2QFY19-4QFY19. MS-C approved 1QFY19; the MDA approved proceeding into LRIP/Lot 1 and Lot 2 Advanced Procurement in direct support of Full Rate Production.

The program also plans to use some funds to evaluate Diminishing Manufacturing Sources (DMS) material shortages, obsolescence issues, and reliability improvement, including flight testing.

Funding for this exhibit contained in PE 0101125F.

The October 26, 2018, ADM approved up to an additional 60 TKAs to the program baseline, contingent upon funding availability, to fulfill the 90/10/2 surveillance requirement as decided at the August 2, 2018, Configuration Steering Board. Currently, the Air Force is monitoring contract negotiations and funding options to support the additional 60 TKAs.

FY20 procurement request is \$29.3M less in FY20 PB (vs. FY19 PB). Savings were realized in FY18 through program efficiencies (additional FY16 trainer funding, improved lot acceptance testing strategy), enabling re-phasing which was approved at MS C. Key requirements (e.g., sparing, code management system, bomb assembly trainers) were moved to FY18 & FY19.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs		P-1 Line Item Number / Title: 354040 / B61
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0101125F	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: 468		

Budget documents identify 30 trainers as the units purchased with FY18 funding. Actual funding used to purchase these trainers was in FY16 (15 trainers) and FY18 (15 trainers). Additionally, there is \$1.685M in Prior Years (FY16) advance procurement funds that is not reflected in the Resource Summary (the totals reflect the actual funds: \$10.356M + \$1.685M (AP) = \$12.041M). Corrections will be addressed in future database updates.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs **P-1 Line Item Number / Title:** 354040 / B61

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0101125F **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: 468

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	B61	P-5a, P-21	B		- / 12.041	30 / 63.668	250 / 110.731	- / 0.000	533 / 133.504	533 / 133.504
P-40	Total Gross/Weapon System Cost				- / 12.041	30 / 63.668	250 / 110.731	- / 0.000	533 / 133.504	533 / 133.504

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 The B61-12 LEP TKA program has completed Critical Design Review and continues to meet Reliability and Development Test targets and Manufacturing Readiness Levels. The B61-12 LEP TKA FY19 funding includes the procurement of long lead, non-end item components that will be assembled into TKA and TKA Trainers to support 533 B61-12 LEP TKAs for Lot 2 award in FY20.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 354040 / B61	Item Number / Title [DODIC]: B61

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	30	250	-	533	533
Gross/Weapon System Cost (\$ in Millions)	12.041	63.668	110.731	0.000	133.504	133.504
Less PY Advance Procurement (\$ in Millions)	-	0.000	11.239	0.000	52.731	52.731
Net Procurement (P-1) (\$ in Millions)	12.041	63.668	99.492	0.000	80.773	80.773
Plus CY Advance Procurement (\$ in Millions)	-	11.239	52.731	0.000	-	0.000
Total Obligation Authority (\$ in Millions)	12.041	74.907	152.223	0.000	80.773	80.773

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	0.000	0.000	0.000	0.000	-	0.000
Gross/Weapon System Unit Cost (\$ in Millions)	-	2.122	0.443	-	0.250	0.250

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - B61 Cost																		
Recurring Cost																		
Hardware End Item (TKA) ^(†)	-	-	-	-	-	0.000	0.218	206	44.807	-	-	0.000	0.191	488	93.440	0.191	488	93.440
TKA Trainers ^(†)	-	-	2.152	0.143	30	4.300	0.110	44	4.836	-	-	0.000	0.104	45	4.676	0.104	45	4.676
<i>Subtotal: Recurring Cost</i>	-	-	2.152	-	-	4.300	-	-	49.643	-	-	0.000	-	-	98.116	-	-	98.116
<i>Subtotal: Hardware - B61 Cost</i>	-	-	2.152	-	-	4.300	-	-	49.643	-	-	0.000	-	-	98.116	-	-	98.116
Logistics - B61 Cost																		
Non Recurring Cost																		
CMS	-	-	3.378	-	-	3.746	-	-	0.200	-	-	0.000	-	-	3.297	-	-	3.297
Technical Data	-	-	-	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
<i>Subtotal: Non Recurring Cost</i>	-	-	3.378	-	-	3.746	-	-	0.200	-	-	0.000	-	-	3.297	-	-	3.297
<i>Subtotal: Logistics - B61 Cost</i>	-	-	3.378	-	-	3.746	-	-	0.200	-	-	0.000	-	-	3.297	-	-	3.297
Ancillary Equipment - B61 Cost																		
Recurring Cost																		
TKA Containers	-	-	-	-	-	-	-	-	0.479	-	-	0.000	-	-	1.422	-	-	1.422
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	0.479	-	-	0.000	-	-	1.422	-	-	1.422
Non Recurring Cost																		
Bomb Assembly (BA) Trainers	-	-	6.511	-	-	36.680	-	-	19.366	-	-	0.000	-	-	0.200	-	-	0.200

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force												Date: February 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13						P-1 Line Item Number / Title: 354040 / B61						Item Number / Title [DODIC]: B61					
ID Code (A=Service Ready, B=Not Service Ready) : B										MDAP/MAIS Code:							

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Test Equipment (SATS)	-	-	-	-	-	-	-	-	2.696	-	-	0.000	-	-	-	-	-	0.000
T&H Gear	-	-	-	-	-	16.457	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	6.511	-	-	53.137	-	-	22.062	-	-	0.000	-	-	0.200	-	-	0.200
<i>Subtotal: Ancillary Equipment - B61 Cost</i>	-	-	6.511	-	-	53.137	-	-	22.541	-	-	0.000	-	-	1.622	-	-	1.622
Support - B61 Cost																		
PMA	-	-	-	-	-	2.485	-	-	0.690	-	-	0.000	-	-	3.830	-	-	3.830
NWC Mission Support	-	-	-	-	-	-	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
System T&E	-	-	-	-	-	0.000	-	-	11.951	-	-	0.000	-	-	8.916	-	-	8.916
Training	-	-	-	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Production Sustaining Engineering	-	-	-	-	-	-	-	-	25.706	-	-	0.000	-	-	17.723	-	-	17.723
<i>Subtotal: Support - B61 Cost</i>	-	-	-	-	-	2.485	-	-	38.347	-	-	0.000	-	-	30.469	-	-	30.469
Gross/Weapon System Cost	-	-	12.041	2.122	30	63.668	0.443	250	110.731	-	-	0.000	0.250	533	133.504	0.250	533	133.504

Remarks:

Decrease in Production Sustaining Engineering from FY19 to FY20 associated with the production effort leading into Full Rate Production.

(t) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 354040 / B61	Item Number / Title [DODIC]: B61
--	--	--

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Hardware End Item (TKA) ^(†)		2019	Boeing / Various	SS / FPIF	Eglin AFB	Mar 2019	Aug 2019	206	0.218	N	Feb 2019	Dec 2017
Hardware End Item (TKA) ^(†)	✓	2020	Boeing / Various	SS / FPIF	Eglin AFB	Mar 2020	Aug 2020	488	0.191	N	Feb 2019	Dec 2017
TKA Trainers ^(†)		2018	Boeing / Various	SS / FFP	Eglin AFB	Jul 2018	Nov 2018	30	0.143	N	Jun 2018	Oct 2017
TKA Trainers ^(†)		2019	Boeing / Various	SS / FPIF	Eglin AFB	Mar 2019	Aug 2019	44	0.110	N	Feb 2019	Oct 2017
TKA Trainers ^(†)	✓	2020	Boeing / Various	SS / FPIF	Eglin AFB	Mar 2020	Aug 2020	45	0.104	N	Feb 2019	Oct 2017

^(†) indicates the presence of a P-21

Remarks:

In order to clear XML errors, specifically the FY19 "Gross/Weapon System Unit Cost" error, IDECS is requiring the FY18 Advanced Procurement (AP) dollars of \$11.239M be added to the Hardware End Item (TKA) line on the P-5. The added FY18 AP changes the Hardware End Item (TKA) unit cost to \$.218/unit. In actuality, only \$8.126M of the \$11.239M FY18 AP funds were used on the Hardware End Item (TKA) requirement. The correct Hardware End Item (TKA) unit cost should be \$.202/unit. The remaining AP dollars were executed on other program requirements.

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 354040 / B61	Item Number / Title [DODIC]: B61
--	--	--

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2020													Fiscal Year 2021													BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020													Calendar Year 2021													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
Hardware End Item (TKA)																																	
	1	2019	AF	206	36	170	-	-	-	16	-	20	43	44	-	47													0				
✓	1	2020	AF	488	0	488						A	-	-	-	-	45	45	46	46	39	46	46	46	46	46	46	37	0				
TKA Trainers																																	
	2	2018	AF	30	30	0																							0				
	2	2019	AF	44	8	36	4	4	4	4	4	4	4	4	4														0				
✓	2	2020	AF	45	0	45						A	-	-	-	-	4	4	4	4	2	4	4	6	5	4	-	4	0				
							O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	A	M	J	J	A	S		
							C	O	E	A	E	A	A	A	U	U	U	E	C	O	O	E	A	E	A	A	U	U	A	S	E		
							T	V	C	N	B	R	P	Y	N	L	G	P	T	V	C	N	B	R	P	Y	N	L	G	E	P		

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 354040 / B61	Item Number / Title [DODIC]: B61
--	--	--

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)								
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder				
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	
1	Boeing - Various	206	550	550	0	0	0	0	0	0	6	5	11
2	Boeing - Various	44	50	50	0	0	0	0	0	0	6	5	11

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs	P-1 Line Item Number / Title: 354040 / B61
---	--

Program Elements for Code B Items: 0101125F	Other Related Program Elements: N/A
--	--

Line Item MDAP/MAIS Code: 468

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	11.239	52.731	0.000	-	0.000	0.000	0.000	0.000	0.000	-	63.970
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	11.239	52.731	0.000	-	0.000	0.000	0.000	0.000	0.000	-	63.970
Total Obligation Authority (<i>\$ in Millions</i>)	-	11.239	52.731	0.000	-	0.000	0.000	0.000	0.000	0.000	-	63.970

Description:

The purpose of this program element is to conduct and support United States Air Force (USAF) and Joint Department of Defense (DoD) / Department of Energy (DOE) acquisition activities for the modernization of nuclear weapons.

B61-12 Life Extension Program (LEP): The B61-12 LEP will integrate DOE efforts to extend the service life of the warhead with DoD efforts to develop a guided Tail Kit Assembly (TKA) required to maintain current B61 mission characteristics. Programmatic integration of the Air Force-led, joint DoD-DOE program is accomplished through the B61 LEP Project Officers Group (POG) and its subgroups. In accordance with Air Force Materiel Command mission assignment memo (dated 17 Feb 11) and National Nuclear Security Administration (NNSA)-Air Force Nuclear Weapons Center (AFNWC) Memorandum of Understanding (MOU dated 28 Jun 12), the USAF is responsible for development, acquisition and delivery of a guided TKA and for All Up Round (AUR) technical integration, system qualification and fielding of the B61-12 variant on multiple platforms. The production effort for the B61 TKA includes the production and delivery of TKAs, accessories, spares, ancillary equipment, trainers, lot acceptance test assets, and support. Advance procurement was required for the purchase of long lead items and life of type buy components for the TKA, the AUR trainers, and associated nuclear support equipment, and code management systems prior to entry into Milestone C and the Full Rate Production decision.

Prior Years Advance Procurement (AP) should reflect \$1.685M (in FY16), making the total \$65.655M. This discrepancy is also reflected on the regular procurement P-40 and advance procurement P-10. Corrections will be reflected in future database updates.

UNCLASSIFIED

Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 13: Bombs	P-1 Line Item Number / Title: 354040 / B61
---	--

Program Elements for Code B Items: 0101125F	Other Related Program Elements: N/A
--	--

Line Item MDAP/MAIS Code: 468

Exhibits Schedule				Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-10	B61			- / -	30 / 11.239	250 / 52.731	- / 0.000	533 / -	533 / 0.000
P-40	Total Gross/Weapon System Cost			- / -	30 / 11.239	250 / 52.731	- / 0.000	533 / -	533 / 0.000

*Title represents the P-10 Title for Advance Procurement.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 The B61-12 LEP TKA program required advance procurement for long lead and non-end item components that will be assembled into Tailkit Assemblies (TKA), TKA trainers, All-Up Round (AUR) trainers, Code Management Systems (CMS), and Nuclear Support Equipment (NSE).
 - FY18 \$11.239M Advance Procurement: supports up to 80 Lot 1 TKAs, TKA trainers, CMS and NSE.
 - FY19 \$52.731M Advance Procurement: supports 533 Lot 2 TKA and TKA Trainers.

Prior Years Advance Procurement (AP) should reflect \$1.685M (in FY16), making the total \$65.655M. This discrepancy is also reflected on the regular procurement P-40 and advance procurement P-10. Additionally, the quantities for Prior Years (FY16) and FY18 should be 15 for each column. Corrections will be reflected in future database updates.

UNCLASSIFIED

Exhibit P-10, Advance Procurement Requirements Analysis (page 1 - Budget Funding Justification): PB 2020 Air Force					Date: February 2019		
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13			P-1 Line Item Number / Title: 354040 / B61			P-5 Number / Title: B61	
First System (2020) Award Date: July 2018		First System (2020) Completion Date: November 2018			Interval Between Systems: 0 Months		
B61	Production Leadtime <i>(Months)</i>	Prior Years <i>(Each)</i>	FY 2018 <i>(Each)</i>	FY 2019 <i>(Each)</i>	FY 2020 <i>(Each)</i>		
Quantity	18	-	30	250	533		
Cost Elements	When Required <i>(Months)</i>	Prior Years <i>(\$ M)</i>	FY 2018 <i>(\$ M)</i>	FY 2019 <i>(\$ M)</i>	FY 2020 <i>(\$ M)</i>		
CFE							
Hardware End Item (TKA)	18	0.000	11.239	52.731	0.000		
<i>Total: CFE</i>		<i>0.000</i>	<i>11.239</i>	<i>52.731</i>	<i>0.000</i>		
Total Advance Procurement/Obligation Authority		-	11.239	52.731	0.000		

UNCLASSIFIED

Exhibit P-10, Advance Procurement Requirements Analysis (page 2 - Budget Funding Justification): PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 13	P-1 Line Item Number / Title: 354040 / B61	P-5 Number / Title: B61
--	--	-----------------------------------

Cost Elements	QPA <i>(Each)</i>	FY 2020					Total Cost Request <i>(\$ M)</i>
		Production Leadtime <i>(Months)</i>	Unit Cost <i>(\$ M)</i>	Contract Forecast Date	2020 Qty <i>(Each)</i>	For FY	
CFE							
Hardware End Item (TKA)	-						0.000
<i>Total: CFE</i>							<i>0.000</i>
Total Advance Procurement/Obligation Authority							0.000

Description:
The B61-12 LEP TKA program requires advance procurement for long lead, non-end item components that will be assembled into AUR trainers, CMS end items, NSE, and Tailkit Assemblies.

Prior Years Advance Procurement (AP) should reflect \$1.685M (in FY16). This discrepancy is also noted on the regular procurement P-40 and advance procurement P-40. Corrections will be reflected in future database updates.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 15: Other Items **P-1 Line Item Number / Title:** 355100 / Cad/Pad

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	64.162	51.455	0.000	47.069	47.069	47.945	48.813	49.693	50.588	-	359.725
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	64.162	51.455	0.000	47.069	47.069	47.945	48.813	49.693	50.588	-	359.725
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	64.162	51.455	0.000	47.069	47.069	47.945	48.813	49.693	50.588	-	359.725

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$47.069M for Overseas Contingency Operations (OCO); of which \$47.069M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

Cartridge Actuated Devices/Propellant Actuated Devices (CAD/PAD) are critical explosive items used to activate pilot/aircrew life-support/survival emergency-release and aircrew-escape/ejection systems, other aircrew flight and survival equipment, aerial refueling, and data destruction systems. CAD/PAD components are used in every USAF mission area, i.e. combat, training, force protection, search & rescue, and humanitarian relief. These explosive devices have a limited shelf/service life and are replaced based on time-change during scheduled aircraft maintenance. The CAD/PAD category includes items such as the Universal Water Activated Release System (UWARS), parachute-release cartridges, Shield Mild-Detonating Cord (SMDC), rocket motors, rocket catapults, time-delay cartridges, initiators, rocket catapults, gas generators, etc.

Funds may be used to resolve production DMS/MS/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, to include electronic components used commercially and in short supply, and qualification activities to preserve future production capabilities and capacities.

CAD/PAD items are purchased for AF by the CAD/PAD Joint Program Office at Hill AFB, UT.

Funding for this exhibit contained in PE 0708070F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 15: Other Items **P-1 Line Item Number / Title:** 355100 / Cad/Pad

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Cad/Pad				- / -	- / 64.162	- / 51.455	- / -	- / 47.069	- / 47.069
P-40	Total Gross/Weapon System Cost				- / -	- / 64.162	- / 51.455	- / 0.000	- / 47.069	- / 47.069

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY2020 funds will be used to maintain Aircraft operational availability and pilot safety. CAD/PAD assets expire due to established item shelf/service life, or mandatory "time-change" procedures for installed devices. In accordance with T.O.00-20-1, the aircraft becomes grounded until reliable assets are obtained and installed.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 15 **P-1 Line Item Number / Title:** 355100 / Cad/Pad **Aggregated Items Title:** Cad/Pad

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
BOMBER AIRCRAFT	A		-	-	-	-	-	9.000	-	-	6.400	-	-	-	-	-	6.000	-	-	6.000
CARGO AIRCRAFT	A		-	-	-	-	-	1.851	-	-	13.000	-	-	-	-	-	12.000	-	-	12.000
FIGHTER AIRCRAFT	A		-	-	-	-	-	18.541	-	-	8.855	-	-	-	-	-	8.869	-	-	8.869
TRAINING AIRCRAFT	A		-	-	-	-	-	17.109	-	-	14.000	-	-	-	-	-	13.000	-	-	13.000
COMMON EGRESS ITEMS	A		-	-	-	-	-	11.200	-	-	6.000	-	-	-	-	-	5.000	-	-	5.000
COMMON LIFE SUPPORT ITEMS	A		-	-	-	-	-	1.210	-	-	3.000	-	-	-	-	-	2.000	-	-	2.000
COMMON MISC ITEMS	A		-	-	-	-	-	5.251	-	-	0.200	-	-	-	-	-	0.200	-	-	0.200
Subtotal: Uncategorized			-	-	-	-	-	64.162	-	-	51.455	-	-	-	-	-	47.069	-	-	47.069
Total			-	-	-	-	-	64.162	-	-	51.455	-	-	-	-	-	47.069	-	-	47.069

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity:
3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 15: Other Items **P-1 Line Item Number / Title:**
355450 / Explosive Ordnance Disposal (EOD)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	5.921	6.038	0.000	6.133	6.133	6.247	6.361	6.474	6.590	-	43.764
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	5.921	6.038	0.000	6.133	6.133	6.247	6.361	6.474	6.590	-	43.764
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	5.921	6.038	0.000	6.133	6.133	6.247	6.361	6.474	6.590	-	43.764

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$6.133M for Overseas Contingency Operations (OCO); of which \$6.133M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

Explosive Ordnance Disposal (EOD) materials support Civil Engineer, EOD, Security Forces Military Working Dogs, RED HORSE, Special Forces operations and training, and formal schools with demolition munitions. The materials are used in deployment packages, base response assets and range clearance resources in support of peacetime and contingency operations. These items are certified for use by the Air Force Non-Nuclear Munitions Safety Board (NNMSB) and the Department of Defense Explosives Safety Board (DDESB).

Funds may be used to resolve production DMS/MS/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, to include electronic components used commercially and in short supply, and qualification activities to preserve future production capabilities and capacities.

The Air Force procures munitions to maintain appropriate quantities in the War Reserve Materiel (WRM) Munitions and test and training stockpiles. Active, Guard and Reserve components draw from the WRM stockpiles as required and receive test and training allocations annually based on current-year requirements.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

Funding for this exhibit is contained in PE 0204424F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 15: Other Items **P-1 Line Item Number / Title:** 355450 / Explosive Ordnance Disposal (EOD)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Explosive Ordnance Disposal (EOD)				- / -	- / 5.921	- / 6.038	- / -	- / 6.133	- / 6.133
P-40	Total Gross/Weapon System Cost				- / -	- / 5.921	- / 6.038	- / 0.000	- / 6.133	- / 6.133

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY2020 purchases Explosive Ordnance Disposal (EOD), Demolition Material, Civil Engineering Tools and Equipment including all explosives, explosive tools and related equipment to render unexploded ordnance safe. Assets provide support for Counter Improvised Explosive Devices (IED) operations, Special Operations teams, formal schools, and Military Working Dog training. EOD/Demolition Munitions items are used in deployment packages, base response assets, and range clearance resources in support of peacetime and contingency operations.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 15 **P-1 Line Item Number / Title:** 355450 / Explosive Ordnance Disposal (EOD) **Aggregated Items Title:** Explosive Ordnance Disposal (EOD)

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(AA62) 12 GAUGE M274 ULTRA CARTRIDGE	A		-	-	-	-	-	0.000	-	-	0.000	-	-	-	-	-	-	-	-	-
(M023) - CHARGE, DEMOLITION C4-M112	A		-	-	-	0.000	74,103	2.700	0.000	26,420	1.000	-	-	-	0.000	23,908	0.983	0.000	23,908	0.983
(M031) CHG DEMO TNT 1/2LB	A		-	-	-	-	-	-	0.000	9,346	0.040	-	-	-	-	-	-	-	-	-
(M097) INERT, NON-ELECTRIC CAP	A		-	-	-	-	-	0.000	0.000	149	0.004	-	-	-	-	-	-	-	-	-
(M130) - CAP BLASTING ELECTRIC M6	A		-	-	-	0.000	18,036	0.600	0.000	13,387	0.568	-	-	-	0.000	8,276	0.300	0.000	8,276	0.300
(M131) - CAP, BLASTING NON-ELECTRIC-M7	A		-	-	-	0.000	13,272	0.300	0.000	16,129	0.500	-	-	-	0.000	20,713	0.500	0.000	20,713	0.500
(M456) - CORD ASBLY DETONATING	A		-	-	-	0.000	241,991	0.100	0.000	232,558	0.100	-	-	-	0.000	232,558	0.100	0.000	232,558	0.100
(M591) - DYNAMITE MILITARY M1 1LB BLOCK	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
(M980) - DETA SHEET	A		-	-	-	-	-	0.000	0.000	6,105	0.200	-	-	-	-	-	-	-	-	-
(M993) CHARGE, DEMO, C1.5 DETA SHEET .062	A		-	-	-	-	-	0.000	0.000	1,114	0.400	-	-	-	0.000	861	0.309	0.000	861	0.309
(ML47) - B CAP W/30 FT SHOCK TUBE	A		-	-	-	-	-	0.000	0.000	138	0.010	-	-	-	-	-	-	-	-	-
(MM24) DEMO ECT, MK 142, 300GPF	A		-	-	-	0.000	10,655	0.200	-	-	0.000	-	-	-	-	-	-	-	-	-
(MM30) CHARGE, 20 GRAM MK 140 MOD 0	A		-	-	-	-	-	0.000	-	-	0.000	-	-	-	-	-	-	-	-	-
(MM51) DEMO ECT, MK 143, 600GPF	A		-	-	-	0.000	1,686	0.200	-	-	0.000	-	-	-	0.000	816	0.100	0.000	816	0.100
(MM52) DEMO ECT, MK144, 1200GPF	A		-	-	-	0.000	2,816	0.200	0.000	1,256	0.112	-	-	-	0.000	3,498	0.312	0.000	3,498	0.312
(MM53) - DEMO ECT, MK145, 2400GPF	A		-	-	-	0.000	808	0.093	0.000	1,777	0.200	-	-	-	0.000	1,058	0.200	0.000	1,058	0.200
(MM54) - EXPLOSIVE CUTTING TAPE	A		-	-	-	0.000	6,689	0.600	0.000	5,505	0.600	-	-	-	0.000	5,389	0.500	0.000	5,389	0.500
(MM56) DETONATOR,	A		-	-	-	-	-	0.000	0.000	600,000	0.400	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 15 **P-1 Line Item Number / Title:** 355450 / Explosive Ordnance Disposal (EOD) **Aggregated Items Title:** Explosive Ordnance Disposal (EOD)

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total			
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	
PERCUSSION 175MS DELAY																					
(MN07) - N/E 70FT DELAY SHOCK TUBE	A		-	-	-	-	-	0.000	-	-	0.000	-	-	-	-	-	-	-	-	-	
(MN06) M14 SET UP, N/E CAP WITH TIME FUZE	A		-	-	-	-	-	0.000	-	-	0.000	-	-	-	0.000	15,638	0.152	0.000	15,638	0.152	
(MN08) - IGNITER TIME BLASTING	A		-	-	-	0.000	23,102	0.200	-	-	0.000	-	-	-	-	-	-	-	-	-	
(MN23) - DEMO ECT, MK152, 900GPF (LHFLSC)	A		-	-	-	0.000	4,807	0.269	-	-	0.000	-	-	-	-	-	-	-	-	-	
(MN82) - SEMTEX A	A		-	-	-	0.000	3,425	0.100	-	-	0.000	-	-	-	0.000	3,348	0.100	0.000	3,348	0.100	
(MN85) - DYNAMITE, 75% AMMON NITRATE	A		-	-	-	-	-	0.000	-	-	0.000	-	-	-	-	-	-	-	-	-	
(MN86) CAP, BLAST NON-ELEC W/200 FT MINI-TUBE M19	A		-	-	-	-	-	-	-	-	0.357	-	-	-	-	-	-	-	-	-	
(MN88) - SHOCK TUBE W/BLASTING CAP 500	A		-	-	-	-	-	0.000	-	-	0.000	-	-	-	-	-	-	-	-	-	
(MN90) - M-13 1,000 FT SHOCK TUBE W/ CAP M23	A		-	-	-	-	-	0.000	-	-	0.000	-	-	-	-	-	-	-	-	-	
(MP29) DETONATOR, NONELEC, DUEL 40 FT MK 164 MOD 0	A		-	-	-	-	-	-	-	-	0.400	-	-	-	-	-	-	-	-	-	
(SS01) - CTG, 50 CAL ELEC BLANK MK209 MOD 1	A		-	-	-	0.000	1,860	0.200	0.000	7,239	0.886	-	-	-	0.000	18,792	2.300	0.000	18,792	2.300	
(M670) FUZE, BLASTING TIME	A		-	-	-	-	-	-	-	-	-	-	-	-	0.000	882	0.120	0.000	882	0.120	
(M986) CHB, DEMOLITION C7 DETA SHEET 1.333	A		-	-	-	-	-	-	-	-	-	-	-	-	0.000	306	0.100	0.000	306	0.100	
(YY34) - SHOCK TUBE	A		-	-	-	0.000	196,078	0.100	0.000	384,615	0.200	-	-	-	-	-	-	-	-	-	
PMA	A		-	-	-	-	-	0.059	-	-	0.061	-	-	-	-	-	-	0.057	-	-	0.057
Subtotal: Uncategorized			-	-	-	-	-	5.921	-	-	6.038	-	-	-	-	-	-	6.133	-	-	6.133
Total			-	-	-	-	-	5.921	-	-	6.038	-	-	-	-	-	-	6.133	-	-	6.133

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity:
3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 15: Other Items

P-1 Line Item Number / Title:
355900 / Spares And Repair Parts

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	0.678	0.000	0.000	0.533	0.533	0.543	0.554	0.564	0.574	-	3.446
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	0.678	0.000	0.000	0.533	0.533	0.543	0.554	0.564	0.574	-	3.446
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	0.678	0.000	0.000	0.533	0.533	0.543	0.554	0.564	0.574	-	3.446

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$0.533M for Overseas Contingency Operations (OCO); of which \$0.533M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

This P-1 line funds spares and repair parts for Procurement of Ammunition, Air Force (PAAF) items. Initial spares consist of repairable components, assemblies and subassemblies, as well as consumable items required in support of newly fielded end items. Requirements are based on historical failure/demand data on similar items. Replenishment spares consist of repairable components, assemblies and subassemblies required for follow-on sustainment of end items. Munitions replenishment spare levels are based on item-specific failure/demand driven computations.

Provide Area Attack telemetry kit WSEP analysis for Wind Corrected Munitions Dispenser (WCMD). Contractor will perform engineering study, installation, delivery and testing for WCMD weapons with telemetry kits.

Funds may be used to resolve production DMS/MS/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, to include electronic components used commercially and in short supply, and qualification activities to preserve future production capabilities and capacities.

PE associated with this P-1 Line is 0208030F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

Justification:

FY20 funds are used for spares and repair parts for Procurement of Ammunition, Air Force (PAAF) items. Initial spares consist of repairable components, assemblies and subassemblies, as well as consumable items required in support of newly fielded end items. Requirements are based on historical failure/demand data on similar items. Replenishment spares consist of repairable components, assemblies and subassemblies required for follow on sustainment of end items. Munitions replacement spare levels are based on item-specific failure/demand driven computations. Examples of spares include Flight Test

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 15: Other Items		P-1 Line Item Number / Title: 355900 / Spares And Repair Parts
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>Telemetry packages, telemetry kits, batteries, fuzes, cables, electronic components to support and maintain fielded end items, and test support equipment. Initial or Replenishment spares and repair parts are necessary for the following Air Force (PAAF) P-1 end items: Rockets, Cartridges, Practice Bombs, General Purpose Bombs, CAD/PAD, Explosive Ordinance Disposal, Flares, and Fuzes.</p> <p>The Air Force procures munitions to maintain appropriate quantities in the War Reserve Materiel (WRM) Munitions and test and training stockpiles. Active, Guard and Reserve components draw from the WRM stockpiles as required and receive test and training allocations annually based on current-year requirements.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity:
3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 15: Other Items

P-1 Line Item Number / Title:
355970 / Modifications

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	1.409	0.847	0.000	1.291	1.291	1.313	1.337	1.361	1.386	-	8.944
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	1.409	0.847	0.000	1.291	1.291	1.313	1.337	1.361	1.386	-	8.944
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	1.409	0.847	0.000	1.291	1.291	1.313	1.337	1.361	1.386	-	8.944

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$1.291M for Overseas Contingency Operations (OCO); of which \$1.291M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

This budget line encompasses both new and on-going modification efforts for guided bomb and munitions systems. Permanent modifications consist of configuration changes to in-service systems and equipment which correct material or other deficiencies and can be used to add or remove capability. Safety modifications correct deficiencies which may create personnel, system, or equipment hazards.

The Air Force procures munitions to maintain appropriate quantities in the War Reserve Materiel (WRM) Munitions and test and training stockpiles. Active, Guard and Reserve components draw from the WRM stockpiles as required and receive test and training allocations annually based on current-year requirements.

Funds may be used to resolve production DMS/MS/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, to include electronic components used commercially and in short supply, and qualification activities to preserve future production capabilities and capacities.

Funding for this exhibit contained in PE 0208030F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

Justification:

The FY2020 funding request is a low cost mod for guided bomb and munitions systems that reflects estimated costs based on historical funding requirements and projected future requirements.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity:
3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 15: Other Items

P-1 Line Item Number / Title:
355990 / Items Less Than \$5,000,000

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	5.047	3.070	0.000	1.677	1.677	4.764	4.850	4.937	5.026	-	29.371
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	5.047	3.070	0.000	1.677	1.677	4.764	4.850	4.937	5.026	-	29.371
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	5.047	3.070	0.000	1.677	1.677	4.764	4.850	4.937	5.026	-	29.371

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$1.677M for Overseas Contingency Operations (OCO); of which \$1.677M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

This category includes various munitions items to support air base ground defense, air rescue and aircrew/ground training.

The Air Force procures munitions to maintain appropriate quantities in the War Reserve Materiel Munitions and test and training stockpiles. Active, Guard and Reserve components draw from the WRM stockpiles as required and receive test and training allocations annually based on current-year requirements.

All items have an annual procurement value of less than \$5 million and are code A.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

PEs associated with this P-1 Line are 0207580F and 0207599F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

Justification:

FY2020 purchases miscellaneous munitions such as hand grenades, grenades with colored smoke for signaling aircrews and air-rescue, and ground-burst simulators primarily used for air-base and ground support missions.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 16: Flares **P-1 Line Item Number / Title:** 356010 / Flares

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	127.481	137.402	0.000	129.388	129.388	143.459	101.435	104.392	77.404	-	820.961
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	127.481	137.402	0.000	129.388	129.388	143.459	101.435	104.392	77.404	-	820.961
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	127.481	137.402	0.000	129.388	129.388	143.459	101.435	104.392	77.404	-	820.961

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$129.388M for Overseas Contingency Operations (OCO); of which \$48.232M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

FY2019 funding totals includes \$12.116M appropriated for Overseas Contingency Operations.

The following Weapon System Cost Elements are represented in this P-1 line:

-(L410) M206 Flare is an infrared countermeasures flare used by A-10, F-16, C-17, C-130, and other aircraft against heat seeking missiles. This item is procured through the Single Manager for Conventional Ammunition (SMCA)/Army.

-(L461) MJU-10 flare, which has been used primarily by the F-15 aircraft against heat seeking missiles, was partially replaced in FY18 by the MJU-53/B and will be completely replaced in FY20. The MJU-53/B is procured by the USAF. The USAF will no longer procure the MJU-10 which has been done through SMCA.

-(L462) MJU-23 Infrared Countermeasure Flare used on the B-1B aircraft against heat seeking missiles. The MJU-23 flare includes a specially designed high ejection cartridge (BBU-46) that propels the burning flare pellet upward with sufficient velocity to clear the aircraft during high speed, low level flight.

-(L463) MJU-7 IR Flare is an infrared countermeasures flare applicable to the A-10, F-15, F-16, F-22 and other aircraft. It creates an infrared signature and acts as a decoy against heat seeking missiles. Will be replaced by MJU-53 in 2020. The Air Force transitioned in FY18 to MJU-53 for wartime and other operational uses; MJU-7 is currently used only for training. This item is procured through the Single Manager for Conventional Ammunition (SMCA)/Army.

-(LA36) MJU-62 Flare is a multi-spectral countermeasure designed to be used as part of a flare cocktail pattern to confuse advanced infrared threat missiles. Used primarily on the C-17 and C-5 aircraft which require a 1 inch by 2 inch by 8 inch flare size to accommodate desired cocktail flare mixes. MJU-62 is being evaluated for use on other types of aircraft such as F-16, A-10 and HH-60. This item is procured through USAF.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 16: Flares		P-1 Line Item Number / Title: 356010 / Flares
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>-(LA66) The MJU-61 is an infrared countermeasure flare used by F-35 aircraft against heat seeking missiles. The MJU-61 is currently being tested as a possible replacement for the M206. This item is procured through the Navy PMA-272.</p> <p>-(LA61) MJU-66 decoy Countermeasure Flare is an improved version of the MJU-64 providing increased decoy effectiveness and protection for the A-10, C-130 and F-35 aircraft and HH-53 and HH-60 helicopters and is being evaluated for other aircraft. It is a one-piece aluminum case containing a payload of advanced special material elements, loaded into a multiple jettison unit magazine installed on a countermeasure dispenser. When deployed into the air stream, the special material reacts to emit an infrared signal to decoy infrared seeking missiles. This item is procured through Navy PMA-272 and USAF.</p> <p>-(LA67) MJU-71 IR Flare is a magnesium based thrusted flare used in a cocktail mix of flares on aircraft to improve the effectiveness of the countermeasures against heat-seeking missile threats. The 1x1x8 inch size provides better protection of the aircraft and flight crew. Other versions of thrusted flares are larger and use more space in the flare dispensers, severely limiting the number of ejection events. Initially approved for use on the C-130, A-10 and F-16 aircraft with on-going tests for use on other platforms. This item is procured through the Navy, PMA-272 and USAF.</p> <p>-(LA68) MJU-68 Flare is a magnesium based countermeasure and was developed specifically for the F-35/JSF aircraft to provide protection from advanced infrared threat missiles. This item is procured through Navy PMA-272.</p> <p>-(LA21) MJU-53/B Flare is a magnesium base IR countermeasure. It consists of an aluminum case, crimped and sealed plastic end cap, rubber spacer, plastic piston, safe and ignition device, flare pellet and sealed cartridge cup. It is dispensed and ignited in flight by a BBU-36 impulse cartridge cup. Used on C-17, C-5, and being evaluated for future use on other aircraft such as A-10, F-16 and HH-60. The MJU-53/b was updated for reliability and safety and will change from the BBU-36 to the BBU-35 impulse cartridge for ignition improvement. This item is procured through USAF.</p> <p>-(LY12) The ALA-17C is an infrared countermeasure used by B-52 aircraft against heat seeking missiles. This item is procured through the US Air Force Global Strike Command and is currently upgrading to the ALE-47 dispenser system which may eliminate the ALA-17 and provide the ability to use common flares.</p> <p>-(LA76) The MJU-73 is a spectral flare that is used in a cocktail mix of flares to increase protection against heat-seeking missile threats. This 1x1x8 inch sized flare is primarily used on the HH-60, and is expected to be qualified on several fixed-wing aircraft in the near future. This item is procured through the US Air Force.</p> <p>-(LA78) The XM219 is a bundled flare that is used in a cocktail mix of flares to increase protection against heat-seeking missile threats. This 1x1x8 inch sized flare provides a unique dispensing pattern and is primarily used on the HH-60. This item is procured by the US Army/SOCOM.</p> <p>-Items Less Than Five Million Dollars: All items have an annual procurement of less than \$5,000,000 and are Code A.</p> <p>Funds may be used to resolve production DMS/MS/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, to include electronic components used commercially and in short supply; and, qualification activities to preserve future production capabilities and capacities.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p> <p>Funding for this exhibit contained in PEs:0208030F and 0207599F.</p> <p>As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force			Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 16: Flares		P-1 Line Item Number / Title: 356010 / Flares	
ID Code (A=Service Ready, B=Not Service Ready): A		Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A			

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	(L410) M206 FLARE	P-5a	A		- / -	- / 20.000	- / 25.000	- / 0.000	- / 20.156	- / 20.156
P-5	(L461) MJU-10 FLARE	P-5a	A		- / -	- / 2.500	- / 0.000	- / -	- / -	- / -
P-5	(L463) MJU-7A/B, IR FLARE	P-5a	A		- / -	- / 7.549	- / 12.000	- / -	- / 8.000	- / 8.000
P-40a	(LA21) MJU-53/B IR CM FLARE				- / -	- / 43.498	- / 42.116	- / -	- / 45.000	- / 45.000
P-40a	(LA36) MJU-62/B IR CM FLARE				- / -	- / 6.000	- / 5.000	- / -	- / 4.000	- / 4.000
P-40a	(LA61) MJU-66 CM ACFT FLARE				- / -	- / 16.434	- / 10.286	- / -	- / 8.000	- / 8.000
P-40a	(LA66) MJU-61 IR CM FLARE				- / -	- / 4.500	- / 8.000	- / -	- / 8.000	- / 8.000
P-40a	(LA67) FLARE, IR, CM (MJU-71/B)				- / -	- / 22.000	- / 17.000	- / -	- / 16.232	- / 16.232
P-40a	(LA68) MJU-68/B IR CM FLARE				- / -	- / -	- / 18.000	- / -	- / 12.000	- / 12.000
P-40a	(LY12) ALA-17 FLARE CARTRIDGE				- / -	- / 5.000	- / -	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / -	- / 127.481	- / 137.402	- / 0.000	- / 129.388	- / 129.388

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.
 Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY2020 funds purchase countermeasures and flares used by A-10, AC-130, F-15, F-16, C-5, C-17 and F-35/JSF aircraft, HH-53 and HH-60 helicopters and other aircraft to protect the warfighter against advanced air-to-air and ground-to-air infrared and heat seeking attack weapon systems and missiles.

The Air Force procures munitions to maintain appropriate quantities in the War Reserve Materiel (WRM) Munitions and test and training stockpiles. Active, Guard and Reserve components draw from the WRM stockpiles as required and receive test and training allocations annually based on current-year requirements.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16	P-1 Line Item Number / Title: 356010 / Flares	Item Number / Title [DODIC]: (L410) M206 FLARE

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	20.000	25.000	0.000	20.156	20.156
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	20.000	25.000	0.000	20.156	20.156
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	20.000	25.000	0.000	20.156	20.156

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
M206 FLARE - L410 ^(t)	-	-	-	0.000	513,326	19.491	0.000	645,009	24.491	-	-	0.000	0.000	505,502	19.568	0.000	505,502	19.568
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	19.491	-	-	24.491	-	-	0.000	-	-	19.568	-	-	19.568
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	19.491	-	-	24.491	-	-	0.000	-	-	19.568	-	-	19.568
Support - Support End Item Cost																		
PRODUCTION ENGINEERING	-	-	-	-	-	0.503	-	-	0.503	-	-	0.000	-	-	0.585	-	-	0.585
QUALITY ASSURANCE	-	-	-	-	-	0.006	-	-	0.006	-	-	0.000	-	-	0.003	-	-	0.003
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	0.509	-	-	0.509	-	-	0.000	-	-	0.588	-	-	0.588
Gross/Weapon System Cost	-	-	-	-	-	20.000	-	-	25.000	-	-	0.000	-	-	20.156	-	-	20.156

Remarks:

The Single Manager for Conventional Ammunition (SMCA), Department of Army provides this cost analysis with estimates obtained from industry based on quantity range matrices and forecasted cost of materials.

^(t) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16	P-1 Line Item Number / Title: 356010 / Flares	Item Number / Title [DODIC]: (L410) M206 FLARE
--	---	--

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
M206 FLARE - L410		2018	KILGORE AND ARMTEC / TOONE, TN AND COACHELLA, CA	MIPR	ACC-ROCK ISLAND	Mar 2018	Mar 2019	513,326	0.000	Y		
M206 FLARE - L410		2019	KILGORE AND ARMTEC / TOONE, TN AND COACHELLA, CA	MIPR	ACC-ROCK ISLAND	Mar 2019	Mar 2020	645,009	0.000	Y		
M206 FLARE - L410	✓	2020	KILGORE AND ARMTEC / TOON, TN AND COACHELLA, CA	MIPR	ACC-ROCK ISLAND	Mar 2020	Mar 2021	505,502	0.000	Y		

Remarks:
The Single Manager for Conventional Ammunition (SMCA/Army) procures the M206 Flare for the Air Force and other Military Services having requirements for the same or similar items. SMCA establishes contracts based on the competitive environment among qualified sources.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16	P-1 Line Item Number / Title: 356010 / Flares	Item Number / Title [DODIC]: (L461) MJU-10 FLARE

ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	2.500	0.000	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	2.500	0.000	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	2.500	0.000	-	-	-	-
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
MJU-10 FLARE - L461 ^(t)	-	-	-	0.000	13,538	2.497	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	2.497	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	2.497	-	-	-	-	-	-	-	-	-	-	-	-
Support - Support End Item Cost																		
QUALITY ASSURANCE	-	-	-	-	-	0.003	-	-	0.000	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	0.003	-	-	0.000	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-	-	2.500	-	-	0.000	-	-	-	-	-	-	-	-	-

Remarks:

The Single Manager for Conventional Ammunition (SMCA), Department of Army provides this cost analysis with estimates obtained from industry based on quantity range matrices and forecasted cost of materials.

(t) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force								Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16			P-1 Line Item Number / Title: 356010 / Flares					Item Number / Title [DODIC]: (L461) MJU-10 FLARE				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date
MJU-10 FLARE - L461		2018	KILGORE AND ARMTEC / TOONE, TN AND COACHELLA, CA	MIPR	ACC-ROCK ISLAND	Mar 2018	Mar 2019	13,538	0.000	Y		

Remarks:
The Single Manager for Conventional Ammunition (SMCA/Army) procures the MJU-10 Countermeasure Flare for the Air Force and other Military Services having requirements for the same or similar items. SMCA establishes contracts based on the competitive environment among qualified sources.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16	P-1 Line Item Number / Title: 356010 / Flares	Item Number / Title [DODIC]: (L463) MJU-7A/B, IR FLARE

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	7.549	12.000	-	8.000	8.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	7.549	12.000	-	8.000	8.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	7.549	12.000	-	8.000	8.000

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
MJU-7A/B IR FLARE - L463 ^(t)	-	-	-	0.000	131,928	7.541	0.000	209,710	11.987	-	-	-	0.000	139,800	7.991	0.000	139,800	7.991
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	<i>7.541</i>	-	-	<i>11.987</i>	-	-	-	-	-	<i>7.991</i>	-	-	<i>7.991</i>
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	<i>7.541</i>	-	-	<i>11.987</i>	-	-	-	-	-	<i>7.991</i>	-	-	<i>7.991</i>
Support - Support End Item Cost																		
QUALITY ASSURANCE	-	-	-	-	-	0.008	-	-	0.013	-	-	-	-	-	0.009	-	-	0.009
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	<i>0.008</i>	-	-	<i>0.013</i>	-	-	-	-	-	<i>0.009</i>	-	-	<i>0.009</i>
Gross/Weapon System Cost	-	-	-	-	-	7.549	-	-	12.000	-	-	-	-	-	8.000	-	-	8.000

Remarks:

The Single Manager for Conventional Ammunition (SMCA), Department of Army provides this cost analysis with estimates obtained from industry based on quantity range matrices and forecasted cost of materials.

(t) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16	P-1 Line Item Number / Title: 356010 / Flares	Item Number / Title [DODIC]: (L463) MJU-7A/B, IR FLARE
--	---	--

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
MJU-7A/B IR FLARE - L463		2018	KILGORE AND ARMTEC / TOONE, TN AND COACHELLA, CA	MIPR	ACC-ROCK ISLAND	Mar 2018	Mar 2019	131,928	0.000	Y		
MJU-7A/B IR FLARE - L463		2019	KILGORE AND ARMTEC / TOONE, TN AND COACHELLA, CA	MIPR	ACC-ROCK ISLAND	Mar 2019	Feb 2020	209,710	0.000	Y		
MJU-7A/B IR FLARE - L463	✓	2020	KILGORE AND ARMTEC / TOONE, TN AND COACHELLA, CA	MIPR	ACC-ROCK ISLAND	Mar 2020	Mar 2021	139,800	0.000	Y		

Remarks:
The Single Manager for Conventional Ammunition (SMCA/Army) procures the MJU-7 Infrared Flare for the Air Force and other Military Services having requirements for the same or similar items. SMCA establishes contracts based on the competitive environment among qualified sources.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16 **P-1 Line Item Number / Title:** 356010 / Flares **Aggregated Items Title:** (LA21) MJU-53/B IR CM FLARE

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
UNCATEGORIZED																				
(LA21) MJU-53/B INFRARED COUNTERMEASURE FLARE	A		-	-	-	0.000	579,973	43,498	0.000	561,546	42,116	-	-	-	0.000	600,000	45,000	0.000	600,000	45,000
Subtotal: UNCATEGORIZED			-	-	-	-	-	43,498	-	-	42,116	-	-	-	-	-	45,000	-	-	45,000
Total			-	-	-	-	-	43,498	-	-	42,116	-	-	-	-	-	45,000	-	-	45,000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:

The MJU-53 Infrared Countermeasure Flare is purchased by the Munitions Division, AFMC. Unit prices are estimates from industry.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16 **P-1 Line Item Number / Title:** 356010 / Flares **Aggregated Items Title:** (LA36) MJU-62/B IR CM FLARE

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(LA36) MJU-62 IR CM FLARE	A		-	-	-	0.000	20,690	6.000	0.000	17,241	5.000	-	-	-	0.000	13,792	4.000	0.000	13,792	4.000
Subtotal: Uncategorized			-	-	-	-	-	6.000	-	-	5.000	-	-	-	-	-	4.000	-	-	4.000
Total			-	-	-	-	-	6.000	-	-	5.000	-	-	-	-	-	4.000	-	-	4.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
The MJU-62 Infrared Countermeasure Flare is purchased by the Munitions Division, AFMC. Unit prices are estimates from industry.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16	P-1 Line Item Number / Title: 356010 / Flares	Aggregated Items Title: (LA61) MJU-66 CM ACFT FLARE
--	---	---

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(LA61) MJU-66 Decoy ACFT Flare	A		-	-	-	0.000	136,950	16.434	0.000	76,193	10.286	-	-	-	0.000	66,667	8.000	0.000	66,667	8.000
Subtotal: Uncategorized			-	-	-	-	-	16.434	-	-	10.286	-	-	-	-	-	8.000	-	-	8.000
Total			-	-	-	-	-	16.434	-	-	10.286	-	-	-	-	-	8.000	-	-	8.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:

The MJU-66 Decoy is purchased through Navy PMA-272 and USAF. The cost analysis is provided to the Navy and USAF with estimates obtained from industry based on quantity range matrices and forecasted cost of materials. FY2017 prices have been amended to reflect more closely the proposed costs based in materiel cost increases.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16 **P-1 Line Item Number / Title:** 356010 / Flares **Aggregated Items Title:** (LA66) MJU-61 IR CM FLARE

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(LA66) MJU-61 IR CM Flare	A		-	-	-	0.000	60,000	4.500	0.000	106,667	8.000	-	-	-	0.000	106,666	8.000	0.000	106,666	8.000
Subtotal: Uncategorized			-	-	-	-	-	4.500	-	-	8.000	-	-	-	-	-	8.000	-	-	8.000
Total			-	-	-	-	-	4.500	-	-	8.000	-	-	-	-	-	8.000	-	-	8.000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16 **P-1 Line Item Number / Title:** 356010 / Flares **Aggregated Items Title:** (LA67) FLARE, IR, CM (MJU-71/B)

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(LA67) FLARE, IR, CM (MJU-71/B)	A		-	-	-	0.001	44,000	22,000	0.001	34,000	17,000	-	-	-	0.001	32,464	16,232	0.001	32,464	16,232
Subtotal: Uncategorized			-	-	-	-	-	22,000	-	-	17,000	-	-	-	-	-	16,232	-	-	16,232
Total			-	-	-	-	-	22,000	-	-	17,000	-	-	-	-	-	16,232	-	-	16,232

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:

The MJU-71 Infrared Countermeasure Flare is purchased by USAF and the Navy. Unit prices are estimates from industry.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16 **P-1 Line Item Number / Title:** 356010 / Flares **Aggregated Items Title:** (LA68) MJU-68/B IR CM FLARE

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(LA68) MJU-68 IR CM FLARE	A		-	-	-	-	-	-	0.003	6,000	18,000	-	-	-	0.003	4,000	12,000	0.003	4,000	12,000
Subtotal: Uncategorized			-	-	-	-	-	-	-	-	18,000	-	-	-	-	-	12,000	-	-	12,000
Total			-	-	-	-	-	-	-	-	18,000	-	-	-	-	-	12,000	-	-	12,000

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
The MJU-68 Infrared Countermeasure Flare is purchased by the Navy. Unit prices are estimates from industry.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 16	P-1 Line Item Number / Title: 356010 / Flares	Aggregated Items Title: (LY12) ALA-17 FLARE CARTRIDGE
--	---	---

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
(LY17) ALA-17 Flare Cartridge	A		-	-	-	0.001	7,862	5.000	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: Uncategorized			-	-	-	-	-	5.000	-	-	-	-	-	-	-	-	-	-	-	
Total			-	-	-	-	-	5.000	-	-	-	-	-	-	-	-	-	-	-	

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 18: Fuzes **P-1 Line Item Number / Title:** 356120 / Fuzes

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	22.168	60.369	180.691	0.000	158.889	158.889	226.259	163.565	168.021	140.557	-	1,120.519
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	22.168	60.369	180.691	0.000	158.889	158.889	226.259	163.565	168.021	140.557	-	1,120.519
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	22.168	60.369	180.691	0.000	158.889	158.889	226.259	163.565	168.021	140.557	-	1,120.519

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$158.889M for Overseas Contingency Operations (OCO); of which \$62.334M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

FY 2018 funding includes \$47.000M requested for Overseas Contingency Operations.

FY 2019 funding includes \$81.000M requested for Overseas Contingency Operations.

The following Weapon System Cost Elements are represented in this P-1 line:

Procure advanced fuze/sensor systems and modernization capabilities required by US and Allied warfighters to support the commander's intent. These fuze/sensor systems provide the DoD with reliable and effective weapon safing, arming, sensing, and attack capabilities.

- FMU-152A/B Joint Programmable Fuze (JPF) (EC11) is a multi-function unitary fuze developed and procured for the Joint Direct Attack Munition and other conventional inventory weapons. The FMU-152A/B provides a highly reliable bomb fuze with multiple arm times, instantaneous and multiple short and long delay detonation times, hard target survivability, cockpit programmability, and increased service/shelf life. The JPF is compatible with MK-80 series guided and unguided bombs. It has replaced and/or supplemented the FMU-139A/B and FMU-139C/B, FMU-143, and M904/M905 fuzes, and provides fuzing capability for hard target, general purpose, and guided bombs. The Air Force is the lead service for procurement.

-The FMU-139D/B is a Navy-led general purpose fuze Engineering Change Proposal (ECP) program to replace the FMU-139C/B and FMU-152A/B in the Navy and Air Force inventories, respectively. The USAF will evaluate its penetration characteristics in FY19. This effort is a low cost option that meets both service requirements for a better buying power business case. The contract for this effort was competitively awarded by the Navy on 17 September 2015. The ECP is being qualified and tested by the Navy. The AF production buy decision is planned for the 3QFY19 during the first ordering period with production deliveries beginning no later than 3QFY20. Three additional one-year ordering periods are on contract.

- DSU-33D/B Proximity Sensor (KY70) is a battery operated, RF, Doppler radar proximity sensor. It is used to provide low altitude proximity function to the bomb fuze. The sensor interfaces with FMU-139 and FMU-152 fuzes. This line item includes existing sensor production, Engineering Change Proposals (ECPs), and product improvement efforts, for example, modifications to eliminate obsolescence. DSU-33D/B will be replaced by C-HOBS. This item will be procured through the Army SMCA.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 18: Fuzes		P-1 Line Item Number / Title: 356120 / Fuzes
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

- Hard Target Void Sensing Fuze (HTVSF) (EE27), FMU-167 is an advanced system designed to provide fuzing and void sensing functions, enabling a weapon to penetrate and destroy hardened, deeply buried targets protected by multiple layers of soil and/or reinforced concrete. The HTVSF provides for in-flight cockpit programmability, safing and arming, multi-function (time delay and void sensing) and multi-delay arming capabilities. The United States Air Force (USAF) and Department of the Navy (DON) will employ HTVSF in penetrator warheads, contributing to the ability to strike and functionally defeat high value/high payoff targets in order to achieve strategic and operational objectives. HTVSF completed MS-C in May FY 2015 & Low-Rate Initial Production (LRIP) was awarded in July 2015. LRIP II was awarded in September 2016 and Full Rate Production was awarded in September 2017. Anticipate awarding additional Full Rate Production lots in January 2019.

- Items Less Than Five Million Dollars: Various fuzes, to include inert training items, that have an annual procurement value of less than \$5,000,000 and are code A.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), these items are necessary for use by the active components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

PEs associated with this P-1 Line are 0208030F and 0207599F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 01: Ammunition / BSA 18: Fuzes **P-1 Line Item Number / Title:** 356120 / Fuzes

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	(ED51) FMU-152 FUZE SYSTEM, UNIVERSAL				- / -	- / 16.718	- / 37.000	- / -	- / 62.334	- / 62.334
P-5	(KY70) DSU-33D/B PROX SENSOR	P-5a	A		- / -	- / 2.000	- / -	- / -	- / -	- / -
P-5	FMU-139D/B	P-5a	A		- / 22.168	2,418 / 9.860	20,191 / 67.787	- / -	25,525 / 77.923	25,525 / 77.923
P-5	(EE27) FMU-167 HTVSF	P-5a	A		- / -	- / 31.791	- / 75.904	- / -	- / 18.632	- / 18.632
P-40	Total Gross/Weapon System Cost				- / 22.168	- / 60.369	- / 180.691	- / 0.000	- / 158.889	- / 158.889

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 The Air Force procures munitions to maintain appropriate quantities in the War Reserve Materiel (WRM) Munitions and test and training stockpiles. Active, Guard and Reserve components draw from the WRM stockpiles as required and receive test and training allocations annually based on current-year requirements.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force														Date: February 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 18							P-1 Line Item Number / Title: 356120 / Fuzes							Aggregated Items Title: (ED51) FMU-152 FUZE SYSTEM, UNIVERSAL					

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
FMU-152 FUZE SYSTEM UNIVERSAL	A		-	-	-	0.004	4,179	16.718	0.004	10,000	37.000	-	-	-	0.004	15,583	62.334	0.004	15,583	62.334
Subtotal: Uncategorized			-	-	-	-	-	16.718	-	-	37.000	-	-	-	-	-	62.334	-	-	62.334
Total			-	-	-	-	-	16.718	-	-	37.000	-	-	-	-	-	62.334	-	-	62.334

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
 - FMU-152A/B Joint Programmable Fuze (JPF) (EC11) is a multi-function unitary fuze developed and procured for the Joint Direct Attack Munition and other conventional inventory weapons. The FMU-152A/B provides a highly reliable bomb fuze with multiple arm times, instantaneous and multiple short and long delay detonation times, hard target survivability, cockpit programmability, and increased service/shelf life. The JPF is compatible with MK-80 series guided and unguided bombs. It has replaced and/or supplemented the FMU-139A/B and FMU-139C/B, FMU-143, and M904/M905 fuzes, and provides fuzing capability for hard target, general purpose, and guided bombs. The Air Force is the lead service for procurement.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 18	P-1 Line Item Number / Title: 356120 / Fuzes	Item Number / Title [DODIC]: (KY70) DSU-33D/B PROX SENSOR

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	-	2.000	-	-	-	-
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	-	2.000	-	-	-	-
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	-	2.000	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Millions)</i>	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - (KY70) DSU-33D/B PROX SENSOR Cost																		
Recurring Cost																		
DSU-33D/B PROX FUZE ^(†)	-	-	-	0.005	400	2.000	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	2.000	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware - (KY70) DSU-33D/B PROX SENSOR Cost</i>	-	-	-	-	-	2.000	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-	-	2.000	-	-	-	-	-	-	-	-	-	-	-	-

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 18	P-1 Line Item Number / Title: 356120 / Fuzes	Item Number / Title [DODIC]: (KY70) DSU-33D/B PROX SENSOR
--	--	---

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
DSU-33D/B PROX FUZE		2018	ATK TACTICAL SYSTEMS CO. / Rocket Center, WV	MIPR	ACC-ROCK ISLAND	Apr 2018	Apr 2019	400	0.005	Y		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 18	P-1 Line Item Number / Title: 356120 / Fuzes	Item Number / Title [DODIC]: FMU-139D/B

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	2,418	20,191	-	25,525	25,525
Gross/Weapon System Cost (\$ in Millions)	22.168	9.860	67.787	-	77.923	77.923
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	22.168	9.860	67.787	-	77.923	77.923
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	22.168	9.860	67.787	-	77.923	77.923

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	0.004	0.003	-	0.003	0.003

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost Cost																		
Recurring Cost																		
FMU-139 D/B Fuzes ^(†)	-	-	-	0.003	2,418	7.256	0.003	20,191	60.574	-	-	-	0.003	25,525	76.576	0.003	25,525	76.576
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	7.256	-	-	60.574	-	-	-	-	-	76.576	-	-	76.576
<i>Subtotal: Hardware - Hardware End Item Cost Cost</i>	-	-	-	-	-	7.256	-	-	60.574	-	-	-	-	-	76.576	-	-	76.576
Support - FMU-139D/B, PGM SPT, Qual Test Cost																		
Program Management Administration	-	-	2.266	-	-	0.060	-	-	1.140	-	-	-	-	-	1.347	-	-	1.347
Technical Support	-	-	4.973	-	-	0.000	-	-	2.500	-	-	-	-	-	0.000	-	-	0.000
Testing	-	-	14.929	-	-	2.544	-	-	3.573	-	-	-	-	-	0.000	-	-	0.000
<i>Subtotal: Support - FMU-139D/B, PGM SPT, Qual Test Cost</i>	-	-	22.168	-	-	2.604	-	-	7.213	-	-	-	-	-	1.347	-	-	1.347
Gross/Weapon System Cost	-	-	22.168	0.004	2,418	9.860	0.003	20,191	67.787	-	-	-	0.003	25,525	77.923	0.003	25,525	77.923

^(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 18	P-1 Line Item Number / Title: 356120 / Fuzes	Item Number / Title [DODIC]: FMU-139D/B
--	--	---

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
FMU-139 D/B Fuzes		2018	Northrop Grumman Innovation Systems / Rocket Center, WV	C / FFP	AFLCMC/EB - Weapons	Apr 2019	Apr 2020	2,418	0.003	Y		
FMU-139 D/B Fuzes		2019	Orbital ATK / Rocket Center, WV	C / FFP	AFLCMC/EB - Weapons	Sep 2019	Sep 2020	20,191	0.003	Y		
FMU-139 D/B Fuzes	✓	2020	Northrop Grumman Innovation Systems / Rocket Center, WV	C / FFP	AFLCMC/EB - Weapons	Sep 2020	Sep 2021	25,525	0.003	Y		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 18	P-1 Line Item Number / Title: 356120 / Fuzes	Item Number / Title [DODIC]: (EE27) FMU-167 HTVSF

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	31.791	75.904	-	18.632	18.632
Less PY Advance Procurement (\$ in Millions)	-	0.000	0.000	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	31.791	75.904	-	18.632	18.632
Plus CY Advance Procurement (\$ in Millions)	-	0.000	0.000	-	-	-
Total Obligation Authority (\$ in Millions)	-	31.791	75.904	-	18.632	18.632

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	0.000	0.000	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware End Item Cost																		
Recurring Cost																		
Hard Target Void Sensing Fuze CLIN 1001 ^(t)	-	-	-	0.018	1,742	31.651	0.015	4,950	74.250	-	-	-	0.015	1,109	16.632	0.015	1,109	16.632
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	31.651	-	-	74.250	-	-	-	-	-	16.632	-	-	16.632
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	31.651	-	-	74.250	-	-	-	-	-	16.632	-	-	16.632
Support - Support End Item Cost																		
Program Management Administration	-	-	-	-	-	0.140	-	-	1.654	-	-	-	-	-	2.000	-	-	2.000
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	0.140	-	-	1.654	-	-	-	-	-	2.000	-	-	2.000
Gross/Weapon System Cost	-	-	-	-	-	31.791	-	-	75.904	-	-	-	-	-	18.632	-	-	18.632

(t) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 01 / 18	P-1 Line Item Number / Title: 356120 / Fuzes	Item Number / Title [DODIC]: (EE27) FMU-167 HTVSF
--	--	---

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Hard Target Void Sensing Fuze CLIN 1001		2018	Northrop Grumman Innovation Systems / Rocket Center, WV	C / FFP	AFLCMC/EB - Weapons	Apr 2019	Oct 2020	1,742	0.018	Y		
Hard Target Void Sensing Fuze CLIN 1001		2019	Northrop Grumman Innovation Systems / Rocket Center, WV	C / FFP	AFLCMC/EB - Weapons	Apr 2019	Oct 2020	4,950	0.015	Y		
Hard Target Void Sensing Fuze CLIN 1001	✓	2020	Northrop Grumman Innovation Systems / Rocket Center, WV	C / FFP	AFLCMC/EB - Weapons	Feb 2020	Mar 2021	1,109	0.015	Y		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 02: Weapons / BSA 1: Small Arms	P-1 Line Item Number / Title: 357010 / Small Arms
---	---

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
--	---	--

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	10.102	38.611	73.002	0.000	43.591	43.591	33.017	39.174	33.466	33.457	-	304.420
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	10.102	38.611	73.002	0.000	43.591	43.591	33.017	39.174	33.466	33.457	-	304.420
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	10.102	38.611	73.002	0.000	43.591	43.591	33.017	39.174	33.466	33.457	-	304.420

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY2020 funding totals include \$0.0M for Base and \$43.591M for Overseas Contingency Operations (OCO); of which \$37.496M is realigned as part of the OCO for Base Requirements. FY2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

Small Arms encompasses small caliber, hand fired weapons (pistols and rifles) used to support air base ground defense, aircrew protection, Office of Special Investigations, security functions, and other activities requiring small, portable firearms. This line also procures various accessories needed to improve or maintain existing weapons.

The M4 Carbine is a 5.56mm, gas-operated, air-cooled, magazine-fed, selective-rate, shoulder-fired weapon. It is fed by a 30-round magazine and has continued to replace select M16 series rifles. It provides the individual Airman operating in close quarters the capability to engage targets at extended ranges with accurate lethal fire. More compact than the M16 series rifle and featuring a collapsible stock, it achieves over 85% commonality with the M16A2 Rifle. The M4 carbine also includes a Combat Optic and the Modular Weapon System (MWS) which provides two additional magazines, the M4 Rail Assembly System and the Back-up Iron Sight.

The M4A1 Carbine is a 5.56mm, gas-operated, air-cooled, magazine-fed, selective-rate, shoulder-fired weapon. It is fed by a 30-round magazine and has continued to replace select M16 series rifles. It provides the individual Airman operating in close quarters the capability to engage targets at extended ranges with accurate lethal fire. More compact than the M16 series rifle and featuring a collapsible stock, it achieves over 85% commonality with the M16A2 Rifle. The M4 carbine also provides automatic fire.

The Modular Handgun System(MHS)is a DoD, non-developmental, COTS, full & open competition for a new DoD handgun to replace all M9s, M11s and Glock-19s in the inventory. The M17 and M18 are 9mm, lightweight, striker-fired semi-automatic pistols. USAF A4 has decided that the M18 will be the only version used. The USAF has determined the configuration for the new General Officer Personal Defense Weapon will also be the M18 General Officer Pistol.

PEs associated with this P-1 line are 0207227F, 0207580F, 0408011F and 0804731F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F: Procurement of Ammunition, Air Force / BA 02: Weapons / BSA 1: Small Arms **P-1 Line Item Number / Title:** 357010 / Small Arms

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	M320A1 (40MM GRENADE LAUNCHER)				- / -	- / -	- / 33.606	- / -	- / -	- / -
P-5	M4 Carbine (5.56mm)	P-5a	A		- / 10.102	- / -	- / 25.600	- / -	- / 39.120	- / 39.120
P-40a	Modular Handgun System (MHS)				- / -	- / 15.977	- / 9.000	- / -	- / 0.028	- / 0.028
P-40a	SMALL ARMS Items Less Than \$5M				- / -	- / 22.634	- / 4.796	- / -	- / 4.443	- / 4.443
P-40	Total Gross/Weapon System Cost				- / 10.102	- / 38.611	- / 73.002	- / 0.000	- / 43.591	- / 43.591

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY2020 funding in the amount of \$43.591M procures approximately 20,000 M4 Carbines for \$22M; 100 M18 GO Pistols for \$27,600; weapon modification projects for \$250,000; First Destination Transportation costs for \$2M; and 10 M2A1s for \$143,000. IMR Blue initiatives could include 8 possible upgrades to the M4A1 for \$17,120,400, and PMA dollars to support small arms installation and unit mission requirements for all Air Force Personnel.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 02 / 1 **P-1 Line Item Number / Title:** 357010 / Small Arms **Aggregated Items Title:** M320A1 (40MM GRENADE LAUNCHER)

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Uncategorized																				
M320A1 (40MM GRENADE LAUNCHER) ⁽¹⁾	A		-	-	-	-	-	-	0.006	6,001	33.606	-	-	-	-	-	-	-	-	-
Subtotal: Uncategorized			-	-	-	-	-	-	-	-	33.606	-	-	-	-	-	-	-	-	-
Total			-	-	-	-	-	-	-	-	33.606	-	-	-	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
Unit costs for FY20 are estimates and are subject to change.

Footnotes:
⁽¹⁾ FY16 dollars are for Government Furnished Material (GFM).

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 02 / 1	P-1 Line Item Number / Title: 357010 / Small Arms	Item Number / Title [DODIC]: M4 Carbine (5.56mm)

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	10.102	-	25.600	-	39.120	39.120
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	10.102	-	25.600	-	39.120	39.120
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	10.102	-	25.600	-	39.120	39.120

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>
Support - Support End Item Cost																		
M4A1 CARBINE (5.56mm) ^(t)	0.001	14,200	10.102	-	-	-	0.001	36,572	25.600	-	-	-	-	-	-	-	-	-
M4 Carbine (5.56mm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22.000	-	-	22.000
IMR Blue Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.120	-	-	17.120
<i>Subtotal: Support - Support End Item Cost</i>	-	-	10.102	-	-	-	-	-	25.600	-	-	-	-	-	39.120	-	-	39.120
Gross/Weapon System Cost	-	-	10.102	-	-	-	-	-	25.600	-	-	-	-	-	39.120	-	-	39.120

(t) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 02 / 1	P-1 Line Item Number / Title: 357010 / Small Arms	Item Number / Title [DODIC]: M4 Carbine (5.56mm)
---	---	--

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
M4A1 CARBINE (5.56mm)		2017	TBD / TBD	MIPR	ARMY/ACC	Jan 2019	Jan 2021	14,200	0.001	Y		Aug 2018
M4A1 CARBINE (5.56mm)		2019	TBD / TBD	MIPR	ARMY/ACC	Jan 2019	Jan 2021	36,572	0.001	Y		

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3011F / 02 / 1	P-1 Line Item Number / Title: 357010 / Small Arms	Aggregated Items Title: Modular Handgun System (MHS)
---	---	--

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Modular Handgun System																				
M17	A		-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M18	A		-	-	-	0.000	86,200	15.947	0.000	45,000	9.000	-	-	-	-	-	-	-	-	-
General Officer's Handgun	A		-	-	-	0.000	150	0.030	-	-	-	-	-	-	0.000	100	0.028	0.000	100	0.028
Subtotal: Modular Handgun System			-	-	-	-	-	15.977	-	-	9.000	-	-	-	-	-	0.028	-	-	0.028
Total			-	-	-	-	-	15.977	-	-	9.000	-	-	-	-	-	0.028	-	-	0.028

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
The MHS is a DoD, non-developmental, COTS, full & open competition for a new DoD handgun to replace all M9s, M11s and Glock-19s in the inventory.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force															Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3011F / 02 / 1							P-1 Line Item Number / Title: 357010 / Small Arms								Aggregated Items Title: SMALL ARMS Items Less Than \$5M				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
SMALL ARMS ITEMS LESS THAN \$5 MILLION																				
AN/PEQ-15 Laser Designator	A		-	-	-	0.001	100	0.090	0.001	100	0.090	-	-	-	-	-	0.090	-	-	0.090
M2A1 (.50 Cal Machine Gun)	A		-	-	-	0.014	10	0.140	0.014	10	0.140	-	-	-	-	-	0.143	-	-	0.143
M240B Machinegun (7.62mm)	A		-	-	-	0.008	25	0.203	0.005	15	0.073	-	-	-	-	-	-	-	-	-
Ballistic Sighting Module	A		-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M249 Automatic Rifle (5.56mm)	A		-	-	-	0.004	25	0.095	0.004	25	0.095	-	-	-	-	-	-	-	-	-
M4A1 Carbine (5.56mm - Auto)	A		-	-	-	0.001	16,064	10.040	0.001	25	0.017	-	-	-	-	-	-	-	-	-
Modular Combat Shotgun (12 Ga)	A		-	-	-	0.001	25	0.021	0.001	25	0.021	-	-	-	-	-	-	-	-	-
M9 Pistol (9mm)	A		-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glock 19	A		-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M134 Mini Gun	A		-	-	-	0.050	160	8.000	-	-	-	-	-	-	-	-	-	-	-	-
MOD PROJECTS PARTS PROCUREMENT	A		-	-	-	-	-	0.250	-	-	0.250	-	-	-	-	-	0.250	-	-	0.250
FIRST DESTINATION TRANSPORTATION	A		-	-	-	-	-	1.836	-	-	2.000	-	-	-	-	-	2.000	-	-	2.000
PMA- OTHER GOVERNMENT COST	A		-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.250	-	-	0.250
PMA- CONTRACTOR SERVICES	A		-	-	-	-	-	1.364	-	-	1.200	-	-	-	-	-	1.400	-	-	1.400
PMA-GPC	A		-	-	-	-	-	0.080	-	-	0.080	-	-	-	-	-	0.080	-	-	0.080
PMA-TRAVEL	A		-	-	-	-	-	0.080	-	-	0.080	-	-	-	-	-	0.080	-	-	0.080
PMA-RMIS CORPORATE TAX	A		-	-	-	-	-	0.150	-	-	0.150	-	-	-	-	-	0.150	-	-	0.150
Hold for Price Adjustments	A		-	-	-	-	-	0.285	-	-	0.600	-	-	-	-	-	-	-	-	-
Subtotal: SMALL ARMS ITEMS LESS THAN \$5 MILLION			-	-	-	-	-	22.634	-	-	4.796	-	-	-	-	-	4.443	-	-	4.443
Total			-	-	-	-	-	22.634	-	-	4.796	-	-	-	-	-	4.443	-	-	4.443

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Remarks:
Unit costs for FY20 are estimates and subject to change.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED