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

March 2019



Air Force

Justification Book Volume 1 of 1

Missile Procurement, Air Force

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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 - xix
Line Item Table of Contents (Alphabetically by Line Item Title)..... Volume 1 - xxiii
Exhibit P-1M, Procurement Programs - Modification Summary..... Volume 1 - xxv
Acronyms..... Volume 1 - xxix
Exhibit P-40s..... Volume 1 - 1

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

For construction, procurement, and modification of missiles, rockets, and related equipment, including spare parts and accessories therefor, ground handling equipment, and training devices; expansion of public and private plants, Government-owned equipment and installation thereof in such plants, erection of structures, and acquisition of land, for the foregoing purposes, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; reserve plant and Government and contractor-owned equipment layaway; and other expenses necessary for the foregoing purposes including rents, transportation of things, and overseas contingency operations, \$3,090,858,000, to remain available for obligations until September 30, 2022.

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

- OCO for Direct War Costs (\$201,671,000): 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 (\$0): 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 (\$0): 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.

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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: Missile Procurement, Air Force

Budget Activity -----	FY 2018 (Base + OCO) -----	FY 2019 Base Enacted -----	FY 2019 OCO Enacted -----	FY 2019 Total Enacted -----
01. Ballistic Missiles	94,744	13,927		13,927
02. Other Missiles	1,648,345	1,225,799	459,924	1,685,723
03. Modification of Inservice Missiles	126,358	192,379	33,602	225,981
04. Spares and Repair Parts	94,153	97,481		97,481
05. Other Support	732,305	1,048,722		1,048,722
Total Missile Procurement, Air Force	2,695,905	2,578,308	493,526	3,071,834

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: Missile Procurement, 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. Ballistic Missiles	55,888			
02. Other Missiles	1,606,816		201,671	201,671
03. Modification of Inservice Missiles	148,009			
04. Spares and Repair Parts	84,400			
05. Other Support	994,074			
Total Missile Procurement, Air Force	2,889,187		201,671	201,671

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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: Missile Procurement, Air Force

Budget Activity -----	FY 2020 Total (Base + OCO) -----
01. Ballistic Missiles	55,888
02. Other Missiles	1,808,487
03. Modification of Inservice Missiles	148,009
04. Spares and Repair Parts	84,400
05. Other Support	994,074
Total Missile Procurement, Air Force	3,090,858

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: 3020F Missile Procurement, 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: Ballistic Missiles											

Missile Replacement Equipment - Ballistic											
1	Missile Replacement Eq-Ballistic	A		94,744		13,927				13,927	U
Total Ballistic Missiles				94,744		13,927				13,927	
Budget Activity 02: Other Missiles											

Tactical											
2	Replac Equip & War Consumables	A									U
3	Joint Air-To-Ground Munition	A									U
4	Joint Air-Surface Standoff Missile	A	360	433,117	216	541,228	144	61,600	360	602,828	U
5	LRASM0		16	61,728	15	54,385			15	54,385	U
6	Sidewinder (AIM-9X)	A	310	124,650	256	121,253			256	121,253	U
7	AMRAAM	A	185	264,327	177	304,886	10	2,600	187	307,486	U
8	Predator Hellfire Missile	A	5158	379,347	437	33,765	3297	255,000	3734	288,765	U
9	Small Diameter Bomb	A	7471	384,250	1835	68,634	3909	140,724	5744	209,358	U
10	SMALL DIAMETER BOMB II	B			510	100,861			510	100,861	U
Industrial Facilities											
11	Industr'l Preparedns/Pol Prevention	A		926		787				787	U
Total Other Missiles				1,648,345		1,225,799		459,924		1,685,723	

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: 3020F Missile Procurement, 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: Ballistic Missiles											

Missile Replacement Equipment - Ballistic											
1	Missile Replacement Eq-Ballistic	A		55,888							U
Total Ballistic Missiles				55,888							
Budget Activity 02: Other Missiles											

Tactical											
2	Replac Equip & War Consumables	A		9,100							U
3	Joint Air-To-Ground Munition	A	60	15,000							U
4	Joint Air-Surface Standoff Missile	A	411	482,525			19	20,900	19	20,900	U
5	LRASMO										U
6	Sidewinder (AIM-9X)	A	355	160,408							U
7	AMRAAM	A	220	332,250							U
8	Predator Hellfire Missile	A	1531	118,860			2328	180,771	2328	180,771	U
9	Small Diameter Bomb	A	7078	275,438							U
10	SMALL DIAMETER BOMB II	B	1175	212,434							U
Industrial Facilities											
11	Industr'l Preparedns/Pol Prevention	A		801							U
Total Other Missiles				1,606,816				201,671		201,671	

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: 3020F Missile Procurement, Air Force

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO)		S e c
			Quantity	Cost	
Budget Activity 01: Ballistic Missiles					

Missile Replacement Equipment - Ballistic					
1	Missile Replacement Eq-Ballistic	A		55,888	U

Total Ballistic Missiles				55,888	
Budget Activity 02: Other Missiles					

Tactical					
2	Replac Equip & War Consumables	A		9,100	U
3	Joint Air-To-Ground Munition	A	60	15,000	U
4	Joint Air-Surface Standoff Missile	A	430	503,425	U
5	LRASM0				U
6	Sidewinder (AIM-9X)	A	355	160,408	U
7	AMRAAM	A	220	332,250	U
8	Predator Hellfire Missile	A	3859	299,631	U
9	Small Diameter Bomb	A	7078	275,438	U
10	SMALL DIAMETER BOMB II	B	1175	212,434	U
Industrial Facilities					
11	Industr'l Preparedns/Pol Prevention	A		801	U

Total Other Missiles				1,808,487	

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: 3020F Missile Procurement, 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 03: Modification of Inservice Missiles											

Class IV											
12	ICBM FUZE MOD	A		6,334		15,767				15,767	U
13	ICBM FUZE MOD										
	Advance Procurement (CY)					4,100				4,100	U
	C (FY 2019 for FY 2022) (M)					(4,100)				(4,100)	
	C (FY 2020 for FY 2023) (M)										
14	MM III Modifications	A		63,978		124,592				124,592	U
15	AGM-65D Maverick	A		10,289		288		33,602		33,890	U
16	Air Launch Cruise Missile (ALCM)	A		31,671		47,632				47,632	U
17	Small Diameter Bomb	A		14,086							U
Total Modification of Inservice Missiles				126,358		192,379		33,602		225,981	
Budget Activity 04: Spares and Repair Parts											

Missile Spares and Repair Parts											
18	Msl Sprs/Repair Parts (Initial)	A		11,651		15,383				15,383	U
19	Replen Spares/Repair Parts	A		82,502		82,098				82,098	U
Total Spares and Repair Parts				94,153		97,481				97,481	

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: 3020F Missile Procurement, 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 03: Modification of Inservice Missiles											

Class IV											
12	ICBM FUZE MOD	A	6	5,000							U
13	ICBM FUZE MOD										U
	Advance Procurement (CY)			14,497							U
	C (FY 2019 for FY 2022) (M)										
	C (FY 2020 for FY 2023) (M)			(14,497)							
14	MM III Modifications	A		50,831							U
15	AGM-65D Maverick	A		294							U
16	Air Launch Cruise Missile (ALCM)	A		77,387							U
17	Small Diameter Bomb	A									U
Total Modification of Inservice Missiles				148,009							
Budget Activity 04: Spares and Repair Parts											

Missile Spares and Repair Parts											
18	Msl Sprs/Repair Parts (Initial)	A		1,910							U
19	Replen Spares/Repair Parts	A		82,490							U
Total Spares and Repair Parts				84,400							

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: 3020F Missile Procurement, Air Force

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO)		S e c
			Quantity	Cost	
Budget Activity 03: Modification of Inservice Missiles					

Class IV					
12	ICBM FUZE MOD	A	6	5,000	U
13	ICBM FUZE MOD				
	Advance Procurement (CY)			14,497	U
	C (FY 2019 for FY 2022) (M)				
	C (FY 2020 for FY 2023) (M)			(14,497)	
14	MM III Modifications	A		50,831	U
15	AGM-65D Maverick	A		294	U
16	Air Launch Cruise Missile (ALCM)	A		77,387	U
17	Small Diameter Bomb	A			U
Total Modification of Inservice Missiles				148,009	
Budget Activity 04: Spares and Repair Parts					

Missile Spares and Repair Parts					
18	Msl Sprs/Repair Parts (Initial)	A		1,910	U
19	Replen Spares/Repair Parts	A		82,490	U
Total Spares and Repair Parts				84,400	

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: 3020F Missile Procurement, 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 05: Other Support											

Special Programs											
23	Special Update Programs	A		44,917		188,539				188,539	U
999	Classified Programs			687,388		860,183				860,183	U
				-----		-----		-----		-----	
Total Other Support				732,305		1,048,722				1,048,722	
				-----		-----		-----		-----	
Total Missile Procurement, Air Force				2,695,905		2,578,308		493,526		3,071,834	

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: 3020F Missile Procurement, 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 05: Other Support											

Special Programs											
23	Special Update Programs	A		144,553							U
999	Classified Programs			849,521							U
				-----		-----		-----		-----	
Total Other Support				994,074							
				-----		-----		-----		-----	
Total Missile Procurement, Air Force				2,889,187				201,671		201,671	

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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: 3020F Missile Procurement, Air Force

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO)		S e c -
			Quantity	Cost	
Budget Activity 05: Other Support -----					
Special Programs					
23	Special Update Programs	A		144,553	U
999	Classified Programs			849,521	U
Total Other Support				994,074	
Total Missile Procurement, Air Force				3,090,858	

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Air Force • Budget Estimates FY 2020 • Procurement

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

Appropriation 3020F: Missile Procurement, Air Force

Line #	BA	BSA	Line Item Number	Line Item Title	Page
1	01	03	00099L	Missile Replacement Eq-Ballistic.....	Volume 1 - 1

Appropriation 3020F: Missile Procurement, Air Force

Line #	BA	BSA	Line Item Number	Line Item Title	Page
2	02	02	222000	Replac Equip & War Consumables.....	Volume 1 - 13
3	02	02	JAGM00	Joint Air-to-Ground Munition.....	Volume 1 - 15
4	02	02	JASSM0	Joint Air-Surface Standoff Missile.....	Volume 1 - 23
5	02	02	LRASM0	LRASM0.....	Volume 1 - 39
6	02	02	M09HAI	Sidewinder (AIM-9X).....	Volume 1 - 49
7	02	02	MAMRA0	AMRAAM.....	Volume 1 - 63
8	02	02	PRDTA2	Predator Hellfire Missile.....	Volume 1 - 75
9	02	02	SDB000	Small Diameter Bomb.....	Volume 1 - 85
10	02	02	SDB002	SMALL DIAMETER BOMB II.....	Volume 1 - 97

UNCLASSIFIED

UNCLASSIFIED

Air Force • Budget Estimates FY 2020 • Procurement

Appropriation 3020F: Missile Procurement, Air Force

Line #	BA	BSA	Line Item Number	Line Item Title	Page
11	02	05	000042	Industr'l Preparedns/Pol Prevention.....	Volume 1 - 107

Appropriation 3020F: Missile Procurement, Air Force

Line #	BA	BSA	Line Item Number	Line Item Title	Page
12	03	01	M30FLH	ICBM FUZE MOD.....	Volume 1 - 109
13	03	01	M30FLH	ICBM FUZE MOD, Advance Procurement.....	Volume 1 - 115
15	03	01	M30MLG	MM III Modifications.....	Volume 1 - 119
16	03	01	M65DAG	AGM-65D Maverick.....	Volume 1 - 133
17	03	01	MALCBG	Air Launch Cruise Missile (ALCM).....	Volume 1 - 135
18	03	01	SDB000	Small Diameter Bomb.....	Volume 1 - 161

Appropriation 3020F: Missile Procurement, Air Force

Line #	BA	BSA	Line Item Number	Line Item Title	Page
19-21	04	10	00098A-00099K	Missile Spares/Repair Parts.....	Volume 1 - 163

UNCLASSIFIED

UNCLASSIFIED

Air Force • Budget Estimates FY 2020 • Procurement

Appropriation 3020F: Missile Procurement, Air Force

Line #	BA	BSA	Line Item Number	Line Item Title	Page
23	05	04	MSPPRG	Special Update Programs.....	Volume 1 - 169

UNCLASSIFIED

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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
AGM-65D Maverick	M65DAG	16	03	01.....	Volume 1 - 133
AMRAAM	MAMRA0	7	02	02.....	Volume 1 - 63
Air Launch Cruise Missile (ALCM)	MALCBG	17	03	01.....	Volume 1 - 135
ICBM FUZE MOD	M30FLH	12	03	01.....	Volume 1 - 109
ICBM FUZE MOD, Advance Procurement	M30FLH	13	03	01.....	Volume 1 - 115
Industr'l Preparedns/Pol Prevention	000042	11	02	05.....	Volume 1 - 107
Joint Air-Surface Standoff Missile	JASSM0	4	02	02.....	Volume 1 - 23
Joint Air-to-Ground Munition	JAGM00	3	02	02.....	Volume 1 - 15
LRASM0	LRASM0	5	02	02.....	Volume 1 - 39
MM III Modifications	M30MLG	15	03	01.....	Volume 1 - 119
Missile Replacement Eq-Ballistic	00099L	1	01	03.....	Volume 1 - 1
Missile Spares/Repair Parts	00098A-00099K	19-21	04	10.....	Volume 1 - 163
Predator Hellfire Missile	PRDTA2	8	02	02.....	Volume 1 - 75
Replac Equip & War Consumables	222000	2	02	02.....	Volume 1 - 13
SMALL DIAMETER BOMB II	SDB002	10	02	02.....	Volume 1 - 97
Sidewinder (AIM-9X)	M09HAI	6	02	02.....	Volume 1 - 49
Small Diameter Bomb	SDB000	9	02	02.....	Volume 1 - 85

UNCLASSIFIED

UNCLASSIFIED

Air Force • Budget Estimates FY 2020 • Procurement

Line Item Title	Line Item Number	Line #	BA	BSA	Page
Small Diameter Bomb	SDB000	18	03	01.....	Volume 1 - 161
Special Update Programs	MSPPRG	23	05	04.....	Volume 1 - 169

UNCLASSIFIED

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Air Force • Budget Estimates FY 2020 • Procurement
Exhibit P-1M, Procurement Programs - Modification Summary
(Listing by Model)

Lookup Matrix by Model

Model:	LGM-30G	
Modification P-40a Aggregated Items Title:	MM III Modifications	
Item Number	Item Title	Applies to Multiple Models
Uncategorized		
5910	MINUTEMAN MEECN MODIFICATION	No
5927	Airborne Launch Control System Replacement Increment I	No
5928	T-9 Launch Facility Trainer Conversion (T-9)	No
5932	LGM-30G Remote Visual Assessment Phase II (RVA II)	No
5934	LGM-30G Flight Test Telemetry and Termination System (FT3)	No
5942	LGM-30G Launch Control Center Break-In-Kit (LCCB)	No
5943	ICBM Fuze Modernization	No
5947	A/D Switch Replacement	No
5948	CMPT upgrade	No
99999X	Low Cost Modifications	No
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
5915	ICBM Fuze Modernization	No
5916	ICBM Cryptography Upgrade Increment II	No
5921	MM LCC Block Upgrades	No
5925	MM III Auto Switching Unit (ASU)	No

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Air Force • Budget Estimates FY 2020 • Procurement
 Exhibit P-1M, Procurement Programs - Modification Summary
 (Listing by Model)

Model:	AGM-86B	
Modification P-40a Aggregated Items Title:	Air Launch Cruise Missile (ALCM)	
Item Number	Item Title	Applies to Multiple Models
Uncategorized		
_0468	AGM-86B Low Cost Mods	No
860002	AGM-86B Service Life Extension Program 2	No
860004	AGM-86B Service Life Extension Program 3	No
860101	AGM-86B Service Life Extension Program 1	No
860103	Warhead Arming Device (WAD)	No
860106	W-10 Cable	No
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
860009	AGM-86B CALCM/ALCM Test Instrumentation Kit	No
860011	Support Equipment	No
860105	Guided Missile Flight Controller (GMFC)	No
860107	Fuze Assembly	No
860108	Inertial Navigation Element (INE)	No

Model:	AGM-86	
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
860104	Rotary Switch (RS)	No

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Air Force • Budget Estimates FY 2020 • Procurement
Exhibit P-1M, Procurement Programs - Modification Summary
(Funding for Modifications)

Funding (\$ M)

Modification P-40a Item Title P-3a Modification Title	PYS	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Exhibit P-40a										
MINUTEMAN MEECN MODIFICATION	108.229	9.519	14.304	-	-	-	-	-	-	-
Airborne Launch Control System Replacement Increment I	-	-	-	-	-	-	-	-	58.359	36.857
T-9 Launch Facility Trainer Conversion (T-9)	11.810	23.976	-	1.576	-	1.576	-	-	-	-
LGM-30G Remote Visual Assessment Phase II (RVA II)	-	-	8.736	0.543	-	0.543	12.060	2.492	-	-
LGM-30G Flight Test Telemetry and Termination System (FT3)	14.970	-	-	-	-	-	-	-	-	-
LGM-30G Launch Control Center Break-In-Kit (LCCB)	-	-	1.184	-	-	-	-	-	-	-
ICBM Fuze Modernization	18.400	-	-	-	-	-	-	-	-	-
A/D Switch Replacement	-	-	-	-	-	-	0.000	14.551	10.460	0.000
CMPT upgrade	-	-	-	0.859	-	0.859	-	-	-	-
Low Cost Modifications	7.238	-	-	-	-	-	2.000	2.000	1.500	-
AGM-86B Low Cost Mods	1.644	0.000	0.090	0.090	-	0.090	0.100	0.100	0.100	-
AGM-86B Service Life Extension Program 2	39.078	16.632	0.000	0.000	-	0.000	0.000	0.000	-	-
AGM-86B Service Life Extension Program 3	10.377	4.903	-	-	-	-	-	-	-	-
AGM-86B Service Life Extension Program 1	8.254	2.807	2.110	2.100	-	2.100	2.100	2.200	2.300	0.000
Warhead Arming Device (WAD)	-	-	8.590	1.367	-	1.367	0.024	0.024	0.024	-
W-10 Cable	-	-	0.638	0.592	-	0.592	0.609	0.227	-	-
Exhibit P-3a										
ICBM Fuze Modernization	35.444	6.334	19.867	19.497	0.000	19.497	45.727	100.627	112.433	120.463
ICBM Cryptography Upgrade Increment II	0.000	30.483	69.060	23.570	0.000	23.570	20.494	54.192	0.000	-
MM LCC Block Upgrades	0.000	0.000	24.296	17.246	0.000	17.246	0.000	0.000	0.000	-

UNCLASSIFIED

UNCLASSIFIED

Air Force • Budget Estimates FY 2020 • Procurement
 Exhibit P-1M, Procurement Programs - Modification Summary
 (Funding for Modifications)

Modification P-40a Item Title P-3a Modification Title	PYS	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
MM III Auto Switching Unit (ASU)	0.000	0.000	7.012	7.037	0.000	7.037	20.060	18.490	22.901	4.275
AGM-86B CALCM/ALCM Test Instrumentation Kit	104.607	7.328	1.300	10.626	0.000	10.626	11.005	8.907	3.076	0.000
Support Equipment	-	-	27.805	21.925	0.000	21.925	33.580	43.641	38.630	0.000
Rotary Switch (RS)	-	0.000	7.099	7.493	0.000	7.493	7.697	7.900	6.271	0.000
Guided Missile Flight Controller (GMFC)	-	0.000	0.000	6.914	0.000	6.914	6.470	6.607	6.788	0.000
Fuze Assembly	-	-	0.000	12.875	0.000	12.875	7.045	1.875	0.024	0.000
Inertial Navigation Element (INE)	-	-	0.000	13.405	0.000	13.405	12.207	12.017	12.083	0.000
Totals (Total Obligation Authority)										
Total Obligation Authority	360.051	101.982	192.091	147.715	0.000	147.715	181.178	275.850	274.949	161.595

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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
EWAIISP	- Electronic Warfare Avionics Integration Support Facility
FLIR	- Forward Looking Infra Red

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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

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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

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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

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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

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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

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 01: Ballistic Missiles / BSA 3: Missile Replacement Equipment - Ballistic	P-1 Line Item Number / Title: 00099L / Missile Replacement Eq-Ballistic
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0101213F
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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>)	-	94.744	13.927	55.888	-	55.888	12.645	14.050	14.135	4.870	-	210.259
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	94.744	13.927	55.888	-	55.888	12.645	14.050	14.135	4.870	-	210.259
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	94.744	13.927	55.888	-	55.888	12.645	14.050	14.135	4.870	-	210.259

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

Initial Spares (<i>\$ in Millions</i>)	-	0.224	-	-	-	-	-	-	-	-	-	0.224
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

In the FY2019 budget, BP22 Missile Replacement Equipment- Ballistic received an FY18 Congressional rescission of \$5.200M. The correct total for FY18 is \$89.544M.

The FY 2020 funding request was reduced by \$18.700 million to account for the availability of prior year execution balances.

This program funds replacement of organizational and intermediate level support equipment for all out-of-production ballistic missile systems. Equipment procured is used for missile weapon systems maintenance and testing at organizational/intermediate (base/field) launch control facilities, as well as missile testing facilities. Equipment and qualified minor construction costs related to depot activation. Programs will include analysis of Diminishing Manufacturing Sources and Material Shortages (DMSMS) risks and procurement activities related to DMSMS.

Related Research, Development, Test & Evaluation, Air Force funding is contained in PE 0101213F.

- Pendulous Integrating Gyroscopic Accelerometer Build Equipment Replacement (PIGA BER): The Missile Guidance Set (MGS) repair is dependent on the proper functioning of the PIGA build equipment. The PIGA BER program replaces and updates obsolete systems. PIGA BER procurement activities will modify or replace one Digital Pickoff Alignment station, one Electrical Alignment station, one Alignment Test station, one Torque Test station, and one Fluid Fill station. Additionally funds may be used for any parts/re-work/technical data necessary for the retrofit of assets produced during RDT&E for operational capability after testing. PIGA BER is an FY20 Procurement New Start.
- G6B4 Build Equipment Replacement (G6B4 BER): G6B4 BER program replaces three stations used for repair, test, and calibration of gyroscopes. EMD funds were used to replace G6B4 Rotor Balance Test Station, G6B4 Hydrogen Fill Station, and the Gyro F-coefficient Station. Procurement funding is for the purchase of 1 Rotor Balance Test Station and any parts/retrofitting/technical-data updates needed for full operational capability of 3 RDT&E assets. G6B4 BER is an FY20 Production New Start.
- Ballistic Missile Items Less Than \$5 Million: Support Equipment Less Than \$5M procures low cost new, modified or replacement support equipment, to include facilities and other equipment to support programmed depot maintenance capability activation.
- MM Power Panels (PPM): Minuteman Power Panels replaces obsolete and unsupportable power distribution panels within Launch Control Centers and Launch Facilities.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 01: Ballistic Missiles / BSA 3: Missile Replacement Equipment - Ballistic		P-1 Line Item Number / Title: 00099L / Missile Replacement Eq-Ballistic
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0101213F
Line Item MDAP/MAIS Code: N/A		
<ul style="list-style-type: none"> • Payload Transporter Replacement (PTR): Provides nuclear certified tractor and trailer to emplace, extract and transport the reentry system, Propulsion System Rocket Engine, and guidance systems. Replaces current payload transporter to meet USSTRATCOM security requirements and addresses supportability issues. Required to sustain Minuteman III operations through fielding of Ground Based Strategic Deterrent in 2036. • Performance Assessment Data System Communication Equipment Interface Unit (PADS CEIU II): Performance Assessment Data System (PADS) is used to collect and analyze Missile Guidance Computer (MGC) data, Launch Facility (LF) faults and anomalies, as well as LF security and Environmental Control System (ECS) data. PADS is a critical MM III legacy data system, developed in the late 1970s and redesigned in 1996-1999, using commercial software. This program addresses PADS reliability, by updating software to meet Air Force software security requirements and to conform to the Air Force standard desktop configuration. • Reentry Field Support Equipment (RFSE): RFSE replaces the current reentry system test set. RFSE will increase the Mean Time Between Failure, eliminate unneeded Mk12 functions, and add new Mk21 functions. It will provide capability to meet Department of Energy mandated Limited Life Component warhead swaps and to test electrical continuity during buildup of Minuteman III reentry systems. • Squadron Data Simulator (SDS): The SDS simulates the command and control message traffic between a MM squadron of Launch Control Centers (LCCs) and the Launch Facilities (LFs). The SDS acquisition program was cancelled after a new supportability study and cost analysis revealed the current system is sustainable. • Transporter Erector Replacement Program (TERP): The Transporter Erector Replacement Program (TERP) replaces the current transporter erector used to emplace, extract and transport MM III boosters to and from launch facilities. TERP will update existing drawings, specifications and technical orders to eliminate parts obsolescence and address the required usage through 2036. <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>		

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 01: Ballistic Missiles / BSA 3: Missile Replacement Equipment - Ballistic **P-1 Line Item Number / Title:** 00099L / Missile Replacement Eq-Ballistic

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0101213F

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	Ballistic Missile Items Less Than \$5 Million				- / -	- / 2.253	- / 3.000	- / 0.105	- / -	- / 0.105
P-40a	MM Power Panels (PPM)				- / -	- / 9.197	- / 3.395	- / 0.100	- / -	- / 0.100
P-40a	Payload Transporter Replacement (PTR)				- / -	- / 32.412	- / 7.282	- / 19.404	- / -	- / 19.404
P-40a	Perf Assess Data Sys Comm Equip Interface Unit (PADS CEIU II)				- / -	- / 1.142	- / 0.250	- / 0.000	- / -	- / 0.000
P-40a	Reentry Field Support Equipment (RFSE)				- / -	- / 1.426	- / 0.000	- / 0.302	- / -	- / 0.302
P-40a	Squadron Data Simulator (SDS)				- / -	- / 5.200	- / 0.000	- / -	- / -	- / -
P-40a	Transporter Erector Replacement Program (TERP)				- / -	- / 43.114	- / -	- / 35.977	- / -	- / 35.977
P-40	Total Gross/Weapon System Cost				- / -	- / 94.744	- / 13.927	- / 55.888	- / -	- / 55.888

*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:

FY20 funding provides replacement support equipment items for an aging inventory of equipment which has become increasingly more costly to maintain. These items will increase ballistic missile system reliability and maintainability by providing state-of-the-art maintenance repair and testing capability. The items are required to bridge the gap to the National Defense Strategy and National Military Strategy directed nuclear force modernization activities. Requirements are jointly determined by Headquarters United States Air Force (HQ USAF), Air Force Materiel Command (AFMC) and Air Force Global Strike Command (AFGSC) and are based on established allowance standards.

Items requested in FY20 are displayed on the attached P-40A. Items procured during execution may change based on critical equipment needed to support current and emerging Air Force mission requirements.

- Pendulous Integrating Gyroscopic Accelerometer Build Equipment Replacement (PIGA BER): PIGA BER program replaces unsustainable equipment due to obsolescence issues affecting the ability to test and build the PIGA.
- G6B4 Build Equipment Replacement (G6B4 BER): Required to sustain Minuteman III weapon system experiencing obsolete parts associated with each station.
- Ballistic Missile Items Less Than \$5 Million: Procures low cost support equipment required to sustain Minuteman III operations through fielding of the Ground Based Strategic Deterrent (GBSD).
- MM Power Panels (PPM): Procures power panel replacements required to sustain Minuteman III operations through fielding of the Ground Based Strategic Deterrent (GBSD).
- Payload Transporter Replacement (PTR): Replaces current payload transporter to meet USSTRATCOM security requirements and addresses supportability issues. Required to sustain Minuteman III operations through fielding of Ground Based Strategic Deterrent (GBSD). Issues during testing delayed Milestone C from 2QFY18 to 1QFY19. A path forward was agreed upon from anomalous developmental testing and the technical solutions from operational test issues were verified and demonstrated in Jul 2018. Operational testing continued in 1QFY19. The production contract will be awarded in 2QFY19 for the first production article. Low rate initial production will start in FY20 with the procurement of 2 units.
- Perf Assess Data Sys Comm Equip Interface Unit (PADS CEIU II): No FY20 funding requested.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 01: Ballistic Missiles / BSA 3: Missile Replacement Equipment - Ballistic		P-1 Line Item Number / Title: 00099L / Missile Replacement Eq-Ballistic
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0101213F
Line Item MDAP/MAIS Code: N/A		
<ul style="list-style-type: none">• Reentry Field Support Equipment (RFSE): The RFSE replaces unsupportable and unreliable support equipment and is required to sustain Minuteman III operations through fielding of Ground Based Strategic Deterrent (GBSD).• Transporter Erector Replacement Program (TERP): Transporter Erector Replacement Program (TERP) replaces current transporter erectors exhibiting structural integrity issues and addresses supportability issues. TERP is required to sustain Minuteman III operations through fielding of Ground Based Strategic Deterrent (GBSD). Engineering and Manufacturing Development completion delayed due to anomalies during developmental testing. Root cause analysis identified corrective action and developmental testing completion anticipated 2QFY19. Operational testing will complete 2QFY19 leading to milestone C and the order of the first 4 units in 3QFY19 using FY18 funding. The second and third lots of 5 units are planned for FY20. The fourth lot of 5 units is planned for FY21.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force															Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 01 / 3						P-1 Line Item Number / Title: 00099L / Missile Replacement Eq-Ballistic						Aggregated Items Title: Ballistic Missile 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)
Various																				
Various	A		-	-	-	-	-	2.253	-	-	3.000	-	-	0.105	-	-	-	-	-	0.105
Subtotal: Various			-	-	-	-	-	2.253	-	-	3.000	-	-	0.105	-	-	-	-	-	0.105
Total			-	-	-	-	-	2.253	-	-	3.000	-	-	0.105	-	-	-	-	-	0.105

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

Remarks:
Support Equipment Less Than \$5M procures low cost new, modified or replacement support equipment, to include facilities and other equipment to support programmed depot maintenance capability activation.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 01 / 3	P-1 Line Item Number / Title: 00099L / Missile Replacement Eq-Ballistic	Aggregated Items Title: MM Power Panels (PPM)
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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)
LGM-30G																				
LGM-30G Minuteman III Power Panels (PPM)	A		-	-	-	-	-	9.197	-	-	3.395	-	-	0.100	-	-	-	-	-	0.100
Subtotal: LGM-30G			-	-	-	-	-	9.197	-	-	3.395	-	-	0.100	-	-	-	-	-	0.100
Total			-	-	-	-	-	9.197	-	-	3.395	-	-	0.100	-	-	-	-	-	0.100

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

Remarks:
Description: The LGM-30G Power Panels Modification (PPM) modernizes the antiquated power distribution system to improve reliability and sustainability at each of the three wings: Malmstrom, Minot, and FE Warren. Installation of the power panels requires extensive demolition of existing components, relocation of all electrical equipment and installation of the new equipment. Effort also includes technical data and installation necessary for full operation capability of the trainer power panel modification to support PPM.

Justification: Finalizes installation of power panel replacements required to sustain Minuteman III operations through fielding of the Ground Based Strategic Deterrent (GBSD) in 2036.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 01 / 3 **P-1 Line Item Number / Title:** 00099L / Missile Replacement Eq-Ballistic **Aggregated Items Title:** Payload Transporter Replacement (PTR)

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)
LGM-30G																				
LGM-30G Payload Transporter Replacement (PTR)	A		-	-	-	32.412	1	32.412	-	-	7.282	9.702	2	19.404	-	-	-	9.702	2	19.404
Subtotal: LGM-30G			-	-	-	-	-	32.412	-	-	7.282	-	-	19.404	-	-	-	-	-	19.404
Total			-	-	-	-	-	32.412	-	-	7.282	-	-	19.404	-	-	-	-	-	19.404

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

Remarks:

Description

Provides nuclear certified tractor and trailer to emplace, extract and transport the reentry system, Propulsion System Rocket Engine, and guidance systems. Replaces current payload transporter to meet USSTRATCOM security requirements and addresses supportability issues. PTR will update existing drawings, specifications, and technical orders to eliminate parts obsolescence and address the intended usage through fielding of Ground Based Strategic Deterrent (GBSD) .

Justification

Required to sustain Minuteman III operations through fielding of GBSD. Issues during testing delayed Milestone C from 2QFY18 to 1QFY19. A path forward was developed after the anomalous developmental testing and the technical solutions from operational test issues were verified and demonstrated in Jul 2018. Operational testing continued in 1QFY19. FY18 funds will be used to pay for first production article contract (approximately \$9.9M) and to fund production line set-up costs and tooling (approximately \$22.5M due to contractor being a small business). FY19 funding was used to refurbish RDT&E funded units for operational use. FY20 funding will procure the Low-rate Initial Production lot of 2 units.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 01 / 3	P-1 Line Item Number / Title: 00099L / Missile Replacement Eq-Ballistic	Aggregated Items Title: Perf Assess Data Sys Comm Equip Interface Unit (PADS CEIU II)
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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)
LGM-30G																				
Performance Assessment Data System Comm Equipment Interface Unit (PADS CEIU II)	A		-	-	-	0.039	29	1.142	-	-	0.250	-	-	0.000	-	-	-	-	-	0.000
Subtotal: LGM-30G			-	-	-	-	-	1.142	-	-	0.250	-	-	0.000	-	-	-	-	-	0.000
Total			-	-	-	-	-	1.142	-	-	0.250	-	-	0.000	-	-	-	-	-	0.000

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

Remarks:

Performance Assessment Data System (PADS) is used to collect and analyze Missile Guidance Computer (MGC) data, Launch Facility (LF) faults and anomalies, as well as LF security and Environmental Control System (ECS) data. PADS is a critical MM III legacy data system, developed in the late 1970s and redesigned in 1996-1999, using commercial software. This program addresses PADS reliability, by updating software to meet Air Force software security requirements and to conform to the Air Force standard desktop configuration.

PADS Communications Equipment Interface Unit (CEIU) is used to transmit MM III Inertial Measurement Unit (IMU) Performance Data (IPD) from the Launch Control Center (LCC) to the PADS at the support base via telephone lines. CEIU is unclassified equipment, but interfaces with both classified and non-classified systems. This program will update the current CEIU. The change to CEIU design will no longer utilize a modem but will instead use internet protocol (IP).

FY 2019 funding supports installation costs.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 01 / 3 **P-1 Line Item Number / Title:** 00099L / Missile Replacement Eq-Ballistic **Aggregated Items Title:** Reentry Field Support Equipment (RFSE)

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)
LGM-30G																				
LGM-30G Reentry Field Support Equipment (RFSE)	A		-	-	-	-	-	1.426	-	-	0.000	-	-	0.302	-	-	-	-	-	0.302
Subtotal: LGM-30G			-	-	-	-	-	1.426	-	-	0.000	-	-	0.302	-	-	-	-	-	0.302
Total			-	-	-	-	-	1.426	-	-	0.000	-	-	0.302	-	-	-	-	-	0.302

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

Remarks:

Description: The Reentry System Field Support Equipment (RFSE) program is producing test sets to replace the aging and obsolete Reentry System Test Set (RSTS) and the Safety Enhanced Reentry Vehicle (SERV) Field Test Set (SFTS). The RSTS was built in the late 1960s, using early 1960s technology. The RSTS was designed to have a Mean Time Between Failures (MTBF) of approximately 3000 hours but has degraded to about 24 hours at RFSE program initiation. The replacement effort will consist of procuring Reentry System Test Consoles (RSTC), Forward Section Test Sets (FSTS), and sets of support equipment consisting of a RSTC Alignment Console and two FSTS calibration boxes per set. This procurement action will be done to fulfill the requirements of AFGSC.

The test sets will be used to test and functionally check out the Mk12A and Mk21 Reentry Systems and the Mk12A Reentry Vehicle's Forward Sections. The test sets support the Minuteman III Intercontinental Ballistic Missile (ICBM) weapon system ensuring its viability to 2030 and beyond. The RSTC will be able to check-out all possible SERV Reentry System configurations. The Mk12A Forward Section will be checked-out by the FSTS, allowing simultaneous processing efforts to take place, reducing overall processing time in the Weapon Storage Area. The Mk21 Forward Sections will continue to be checked by the current SERV Arming and Fuzing Assembly Test Set.

Justification: The RFSE replaces unsupported and unreliable support equipment and is required to sustain Minuteman III operations through fielding of Ground Based Strategic Deterrent (GBSD) in 2036.

Program previously executed equipment buy using FY16 funds. FY18-20 funding supports Interim Contract Support and PMA until program reaches IOC in FY20.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 01 / 3 **P-1 Line Item Number / Title:** 00099L / Missile Replacement Eq-Ballistic **Aggregated Items Title:** Squadron Data Simulator (SDS)

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)
LGM-30G																				
Squadron Data Simulator (SDS)	A		-	-	-	-	-	5.200	-	-	0.000	-	-	-	-	-	-	-	-	
Subtotal: LGM-30G			-	-	-	-	-	5.200	-	-	0.000	-	-	-	-	-	-	-	-	
Total			-	-	-	-	-	5.200	-	-	0.000	-	-	-	-	-	-	-	-	

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

Remarks:

The SDS Program was canceled after a new supportability study and cost analysis revealed that the current system is sustainable. SDS simulates the command and control message traffic between a Minuteman III squadron of Launch Control Centers (LCCs) and the Launch Facilities (LFs). FY18 funds realigned to Ground Based Strategic Deterrent program on DoD FY18 Omnibus reprogramming request.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Air Force													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 01 / 3						P-1 Line Item Number / Title: 00099L / Missile Replacement Eq-Ballistic						Aggregated Items Title: Transporter Erector Replacement Program (TERP)						

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)
LGM-30G																				
LGM-30G Transporter Erector Replacement Program (TERP)	A		-	-	-	10.779	4	43.114	-	-	-	3.598	10	35.977	-	-	-	3.598	10	35.977
Subtotal: LGM-30G			-	-	-	-	-	43.114	-	-	-	-	-	35.977	-	-	-	-	-	35.977
Total			-	-	-	-	-	43.114	-	-	-	-	-	35.977	-	-	-	-	-	35.977

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

Remarks:

Description

The Transporter Erector Replacement Program (TERP) replaces the current transporter erector used to emplace, extract and transport MM III boosters to and from launch facilities. TERP will update existing drawings, specifications and technical orders to eliminate parts obsolescence and address the intended usage through 2030.

Justification

Transporter Erector Replacement Program (TERP) replaces current transporter erectors exhibiting structural integrity issues and addresses supportability issues. TERP is required to sustain Minuteman III operations through fielding of Ground Based Strategic Deterrent (GBSD). Engineering and Manufacturing Development completion delayed due to anomalies during developmental testing. Root cause analysis identified corrective action and developmental testing completion anticipated 2QFY19. Operational testing will complete 2QFY19 leading to milestone C and the order of the first 4 units in 3QFY19 using FY18 funds. Ten units will be ordered in FY20.

\$24.394M in FY18 TERP funds proposed as source for Ground Based Strategic Deterrent (PE 0605230F) as part of FY18 Prior Approval Reprogramming (DoD FY18-17 PA) and currently deferred. \$18.720M in FY18 funds remain available to TERP. Actual unit cost is \$4.680M.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** 222000 / Replac Equip & War Consumables

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	0.000	9.100	-	9.100	4.500	21.500	34.100	0.000	-	69.200
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	0.000	0.000	9.100	-	9.100	4.500	21.500	34.100	0.000	-	69.200
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	0.000	0.000	9.100	-	9.100	4.500	21.500	34.100	0.000	-	69.200

(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:

The Common Munitions BIT and Reprogramming Equipment (CMBRE) is unit-level support equipment for multiple types of munitions.

Funding for this exhibit is contained in PE 0701212F

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.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** JAGM00 / Joint Air-to-Ground Munition

ID Code (A=Service Ready, B=Not Service Ready): B **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>)	-	-	-	60	-	60	-	-	-	-	-	60
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	0.000	0.000	15.000	-	15.000	0.000	0.000	0.000	0.000	-	15.000
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	0.000	0.000	15.000	-	15.000	0.000	0.000	0.000	0.000	-	15.000
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	0.000	0.000	15.000	-	15.000	0.000	0.000	0.000	0.000	-	15.000
<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>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	0.214	-	0.214	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	0.250	-	0.250	-	-	-	-	-	0.250

Description:

The Army is the Lead Service for the Joint Air-to-Ground Missile (JAGM) program with Air Force missiles being procured through the Army's Redstone Arsenal. The JAGM is the next generation of aviation-launched, fire and forget missiles to augment HELLFIRE capability. The JAGM multi-mode guidance section is integrated with the combat proven HELLFIRE II (AGM-114R) propulsion, warhead, and control section. JAGM will provide precision-kill capability and be used by joint service aircraft for destruction of high value stationary, moving, and relocatable land and maritime targets from standoff range in day, night, adverse weather, and obscured operational environments. JAGMs will be used by the MQ-9 Reaper aircraft.

JAGM procurement funding supports the entire JAGM system to include resolution of obsolescence, end-of-life buys, safety, insensitive munitions, reliability, weapon integration activities, test sets, engineering changes, modifications, and production issues. Funding may be used to address Diminishing Manufacturing Sources (DMS) issues. Unit cost may vary based on procurement quantities of Lead Service, other Services and/or Foreign Military Sales (FMS) from the HELLFIRE and JAGM production capacity. Starting in FY2020, JAGM and HELLFIRE missiles will be procured using the same annual production contract.

Funding for this exhibit contained in PE 0201109F.

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.

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.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** JAGM00 / Joint Air-to-Ground Munition

ID Code (A=Service Ready, B=Not Service Ready): B **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	Joint Air-to-Ground Munition	P-5a, P-21	B		- / -	- / 0.000	- / 0.000	60 / 15.000	- / -	60 / 15.000
P-40	Total Gross/Weapon System Cost				- / -	- / 0.000	- / 0.000	60 / 15.000	- / -	60 / 15.000

*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:
 This program is a new start.

JAGM is a more capable, multi-sensor air-to-ground missile that will increase the lethality of the Joint Force Commander against time sensitive targets in challenging environments. JAGM entered production in FY2018, leveraging the HELLFIRE system. AF will augment the HELLFIRE inventory with JAGMs to improve the lethality of the MQ-9 Reaper.

FY2020 funding procures 60 missiles for AF training and operations to improve MQ-9 capability. Quantities are based on current estimated prices for purchase through the Army.

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Exhibit P-5, Cost Analysis: PB 2020 Air Force					Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2			P-1 Line Item Number / Title: JAGM00 / Joint Air-to-Ground Munition			Item Number / Title [DODIC]: Joint Air-to-Ground Munition		
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)			-	-	-	60	-	60
Gross/Weapon System Cost (\$ in Millions)			-	0.000	0.000	15.000	-	15.000
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			-	0.000	0.000	15.000	-	15.000
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			-	0.000	0.000	15.000	-	15.000
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>								
Initial Spares (\$ in Millions)			-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)			-	-	-	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)
Flyaway - Joint Air-to-Ground Msl Cost																		
Recurring Cost																		
AGM-179 - All-up-Rounds ^(†)	-	-	-	-	-	0.000	-	-	0.000	0.214	60	12.840	-	-	-	0.214	60	12.840
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	0.000	-	-	0.000	-	-	12.840	-	-	-	-	-	12.840
<i>Subtotal: Flyaway - Joint Air-to-Ground Msl Cost</i>	-	-	-	-	-	0.000	-	-	0.000	-	-	12.840	-	-	-	-	-	12.840
Hardware - Hardware End Item Cost																		
Recurring Cost																		
First Destination Shipping Charges	-	-	-	-	-	-	-	-	-	-	-	0.050	-	-	-	-	-	0.050
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.050	-	-	-	-	-	0.050
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.050	-	-	-	-	-	0.050
Support - Support End Item Cost																		
Program Management Administration	-	-	-	-	-	-	-	-	-	-	-	1.110	-	-	-	-	-	1.110
Production Engineering Support	-	-	-	-	-	-	-	-	-	-	-	1.000	-	-	-	-	-	1.000
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.110	-	-	-	-	-	2.110
Gross/Weapon System Cost	-	-	-	-	-	0.000	-	-	0.000	0.250	60	15.000	-	-	-	0.250	60	15.000

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JAGM00 / Joint Air-to-Ground Munition	Item Number / Title [DODIC]: Joint Air-to-Ground Munition
ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:	

(†) indicates the presence of a P-5a

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JAGM00 / Joint Air-to-Ground Munition	Item Number / Title [DODIC]: Joint Air-to-Ground Munition
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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
AGM-179 - All-up-Rounds ^(†)		2020	Lockheed Martin / Orlando	MIPR	Redstone Arsenal, AL	Sep 2020	Oct 2022	60	0.214	Y		Apr 2019

^(†) indicates the presence of a P-21

Remarks:
JAGMs will be procured via options on the HELLFIRE Fixed Price Incentive Firm (FPIF) production contract.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** JAGM00 / Joint Air-to-Ground Munition **Item Number / Title [DODIC]:** Joint Air-to-Ground Munition

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2020												Fiscal Year 2021												BALANCE	
O C 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
AGM-179 - All-up-Rounds																															
	1	2020	AF	60	0	60																								60	
	1	2020	ARMY (‡)	609	0	609																								609	
	1	2020	NAVY (‡)	382	0	382																								382	
	1	2020	Total	1,051	0	1,051																								1,051	
							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	

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JAGM00 / Joint Air-to-Ground Munition	Item Number / Title [DODIC]: Joint Air-to-Ground Munition
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022												Fiscal Year 2023												BALANCE		
O C C #	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	
AGM-179 - All-up-Rounds																																
	1	2020	AF	60	0	60	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	5	5	5	0
	1	2020	ARMY (‡)	609	0	609	-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	51	51	51	51	51	51	51	51	51	51	0
	1	2020	NAVY (‡)	382	0	382	-	-	-	-	-	-	-	-	-	-	-	-	31	31	32	32	32	32	32	32	32	32	32	32	0	
	1	2020	Total	1,051	0	1,051	-	-	-	-	-	-	-	-	-	-	-	-	86	86	87	88	88	88	88	88	88	88	88	88	0	
							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		

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Exhibit P-21, Production Schedule: PB 2020 Air Force	Date: February 2019
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Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JAGM00 / Joint Air-to-Ground Munition	Item Number / Title [DODIC]: Joint Air-to-Ground Munition
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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	Lockheed Martin - Orlando	600	1,200	2,400	5	12	25	37	0	0	0	0

Remarks:
 Yearly Minimum Sustainment Rate (MSR) = 600 missiles.
 Yearly Economical Production Rate (1-8-5) = 1,200 missiles.
 Yearly Maximum Production Rate (MPR) = 2,400 missiles.

MSR and MPR consist of the sum of USAF, USN, and Army procurements for the year.

(±) 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).

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** JASSM0 / Joint Air-Surface Standoff Missile

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: 555

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>)	2,934	360	360	411	19	430	297	265	273	263	2,018	7,200
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3,100.653	433.117	602.828	482.525	20.900	503.425	417.450	438.335	450.234	440.337	2,967.785	9,354.164
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3,100.653	433.117	602.828	482.525	20.900	503.425	417.450	438.335	450.234	440.337	2,967.785	9,354.164
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3,100.653	433.117	602.828	482.525	20.900	503.425	417.450	438.335	450.234	440.337	2,967.785	9,354.164
<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>)	-	-	0.425	0.434	-	0.434	0.440	0.449	0.457	0.465	-	2.670
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	1.057	1.203	1.675	1.174	1.100	1.171	1.406	1.654	1.649	1.674	1.471	1.299

Description:

FY19 funding totals include \$61.6M appropriated for European Deterrence Initiative (EDI). These funds procure 48 missiles.

The Joint Air-to-Surface Standoff Missile (JASSM) is an ACAT 1C program. This program provides a long range, conventional air-to-surface, autonomous, precision guided, standoff cruise missile compatible with fighter and bomber aircraft able to attack a variety of fixed or relocatable targets. The JASSM Family of missiles includes: JASSM Baseline (JASSM-BL/AGM-158A) and JASSM Extended Range (JASSM-ER/AGM-158B), and AGM-158D. Aircraft integration for JASSM-BL is complete on the B-52H, F-16 (Block 40-52), B-1, B-2, and F-15E. Aircraft integration for JASSM-ER is complete on the B-1, F-15 and B-52. Objective aircraft are the B-52, F16, B-2 and F-15. JASSM Lots 1 - 10 are covered under an Original Equipment Manufacture (OEM) warranty; 15 years for JASSM-ER and 20 years for JASSM-BL. Lots 11 and beyond are covered under a Contractor Logistics Support (CLS) contract and missile initial/replenishment spares program funds are required to fill the initial spare parts pipeline under this program. Procurement quantities are estimates only and fall within a range of quantities based on negotiations for each specific lot contract. Total procurement of 7,200 includes JASSM-BL (AGM-158A), JASSM-ER (AGM-158B), and AGM-158D which provides a capability upgrade. FY20 procurement includes AGM-158D. Funding and quantity information prior to FY17 is identified in P-1 line item 654515.

JASSM-ER started FRP in FY15, and JASSM-ER achieved Initial Operational Capability (IOC) in December 2014 on the B-1B. FY20 will be the 18th production lot for the JASSM program. The program also plans to use some funds to address Diminishing Manufacturing Sources (DMS) material shortages, obsolescence issues, and reliability improvement, including flight testing.

Funding for this exhibit is contained in PE 0207325F.

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.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** JASSM0 / Joint Air-Surface Standoff Missile

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: 555

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	JASSM0 JASSM Baseline	P-5a, P-21	A		2,034 / 1,836.328	- / -	- / -	- / -	- / -	- / -
P-5	Joint Air-Surface Standoff Missile	P-5a, P-21	A		900 / 1,264.325	360 / 433.117	360 / 602.828	411 / 482.525	19 / 20.900	430 / 503.425
P-40	Total Gross/Weapon System Cost				2,934 / 3,100.653	360 / 433.117	360 / 602.828	411 / 482.525	19 / 20.900	430 / 503.425

*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:

FY19 funding totals include Congressional program increase of \$125.000M.

FY20 funding totals include \$482.525M in base to procure 411 missiles and \$20.900M in Overseas Contingency Operations (OCO) to procure 19 missiles.

Test Support/Reliability/Obsolescence impacted due to a 48% inventory level increase. The program will continue reliability initiatives including Weapon System Evaluation Program (WSEP) flight testing of current production missiles.

Funds may be used to resolve production DMSMS/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 capacity.

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.

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JASSM0 / Joint Air-Surface Standoff Missile	Item Number / Title [DODIC]: JASSM0 JASSM Baseline

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)		2,034	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)		1,836.328	-	-	-	-	-
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		1,836.328	-	-	-	-	-
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		1,836.328	-	-	-	-	-
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)		0.903	-	-	-	-	-

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)
Flyaway - Flyaway End Item Cost																		
Recurring Cost																		
JASSM BL AGM-158A ^(†)	0.698	2,034	1,420.038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	1,420.038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Flyaway - Flyaway End Item Cost</i>	-	-	1,420.038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - Support End Item Cost																		
Program Management Administration (PMA)-A&AS	-	-	9.526	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Program Management Administration (PMA)-Gov't Cost	-	-	24.178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Test Support/Reliability/Obsolescence	-	-	253.711	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prime Contractor Support	-	-	99.286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JPO Tech Supt	-	-	29.589	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Support End Item Cost</i>	-	-	416.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	0.903	2,034	1,836.328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

^(†) indicates the presence of a P-5a

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JASSM0 / Joint Air-Surface Standoff Missile	Item Number / Title [DODIC]: JASSM0 JASSM Baseline
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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
JASSM BL AGM-158A ^(†)		2015	Lockheed Martin / Troy, Alabama	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Oct 2015	Feb 2017	100	0.860	Y		Jul 2012
JASSM BL AGM-158A ^(†)		2016	Lockheed Martin / Troy, Alabama	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Dec 2015	Jan 2018	100	0.842	Y		Jan 2014

^(†) indicates the presence of a P-21

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JASSM0 / Joint Air-Surface Standoff Missile	Item Number / Title [DODIC]: JASSM0 JASSM Baseline
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2016													Fiscal Year 2017													BALANCE				
O C O #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	Calendar Year 2016													Calendar Year 2017																
							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						
JASSM BL AGM-158A																																				
Prior Years Deliveries: 1834																																				
	1	2015	AF ⁽¹⁾	100	0	100	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	-	-	-	-	-	-	-	23
	1	2015	FMS ⁽²⁾	40	0	40	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-	0
	1	2015	Total	140	0	140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117	-	-	-	-	-	-	-	23	
	1	2016	AF	100	0	100			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	
	1	2016	FMS ⁽³⁾	46	0	46			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	
	1	2016	Total	146	0	146			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	
							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						

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** JASSM0 / Joint Air-Surface Standoff Missile **Item Number / Title [DODIC]:** JASSM0 JASSM Baseline

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2018												Fiscal Year 2019												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018												Calendar Year 2019												
							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
JASSM BL AGM-158A																															
Prior Years Deliveries: 1834																															
1	2015	AF ⁽¹⁾	100	77	23	16	7																						0		
1	2015	FMS ^{(#)(2)}	40	40	0	-	-																						0		
1	2015	Total	140	117	23	16	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
1	2016	AF	100	0	100	-	-	-	10	10	10	10	10	10	10	8	4	4	4										0		
1	2016	FMS ^(#)	46	0	46	-	-	-	-	-	-	7	6	5	3	3	2	6	7	7										0	
1	2016	Total	146	0	146	-	-	-	10	10	10	17	16	15	13	13	10	10	11	11	-	-	-	-	-	-	-	-	-	0	
						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		

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Exhibit P-21, Production Schedule: PB 2020 Air Force	Date: February 2019
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Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JASSM0 / Joint Air-Surface Standoff Missile	Item Number / Title [DODIC]: JASSM0 JASSM Baseline
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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	Lockheed Martin - Troy, Alabama				0	0	0	0	0	0	3	25	28

Remarks:

The last JASSM-Baseline was delivered on 20 December 18.

(‡) 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).

Footnotes:

(1) Prior Year contracts with undelivered assets have all deliveries occurring before Oct 2017 loaded in the month of first delivery.

(2) Prior Year contracts with undelivered assets have all deliveries occurring before Oct 2017 loaded in the month of first delivery.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JASSM0 / Joint Air-Surface Standoff Missile	Item Number / Title [DODIC]: Joint Air-Surface Standoff Missile
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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)	900	360	360	411	19	430
Gross/Weapon System Cost (\$ in Millions)	1,264.325	433.117	602.828	482.525	20.900	503.425
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,264.325	433.117	602.828	482.525	20.900	503.425
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,264.325	433.117	602.828	482.525	20.900	503.425

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

Initial Spares (\$ in Millions)	-	0.000	0.425	0.434	-	0.434
Gross/Weapon System Unit Cost (\$ in Millions)	1.405	1.203	1.675	1.174	1.100	1.171

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)
Flyaway - Flyaway End Item Cost																		
Recurring Cost																		
JASSM ER AGM-158B ^(†)	1.252	900	1,126.486	1.063	360	382.680	1.050	360	377.985	1.048	371	388.890	1.048	19	19.916	1.048	390	408.806
Engineering Change Orders	-	-	-	-	-	5.960	-	-	5.843	-	-	7.139	-	-	-	-	-	7.139
JASSM AGM-158D ^(†)	-	-	-	-	-	-	-	-	-	1.325	40	53.000	-	-	-	1.325	40	53.000
<i>Subtotal: Recurring Cost</i>	-	-	1,126.486	-	-	388.640	-	-	383.828	-	-	449.029	-	-	19.916	-	-	468.945
<i>Subtotal: Flyaway - Flyaway End Item Cost</i>	-	-	1,126.486	-	-	388.640	-	-	383.828	-	-	449.029	-	-	19.916	-	-	468.945
Support - Support End Item Cost																		
Program Management Administration (PMA)-A&AS	-	-	6.977	-	-	2.610	-	-	3.079	-	-	3.163	-	-	-	-	-	3.163
Program Management Administration (PMA)-Gov't Cost	-	-	2.916	-	-	1.648	-	-	1.066	-	-	1.095	-	-	-	-	-	1.095
Test Support/Reliability/Obsolescence	-	-	116.136	-	-	31.199	-	-	46.589	-	-	19.720	-	-	0.984	-	-	20.704
Prime Contractor Support	-	-	11.810	-	-	9.020	-	-	9.266	-	-	9.518	-	-	-	-	-	9.518
Facilitization	-	-	-	-	-	-	-	-	159.000	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Support End Item Cost</i>	-	-	137.839	-	-	44.477	-	-	219.000	-	-	33.496	-	-	0.984	-	-	34.480
Gross/Weapon System Cost	1.405	900	1,264.325	1.203	360	433.117	1.675	360	602.828	1.174	411	482.525	1.100	19	20.900	1.171	430	503.425

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JASSM0 / Joint Air-Surface Standoff Missile	Item Number / Title [DODIC]: Joint Air-Surface Standoff Missile
ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:	

(†) indicates the presence of a P-5a

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JASSM0 / Joint Air-Surface Standoff Missile	Item Number / Title [DODIC]: Joint Air-Surface Standoff Missile
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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
JASSM ER AGM-158B ^(†)		2016	Lockheed Martin / Troy, Alabama	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Dec 2015	Jan 2018	240	1.173	Y		Jan 2014
JASSM ER AGM-158B ^(†)		2017	Lockheed Martin / Troy, Alabama	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Jun 2017	Jan 2019	360	1.146	Y		Aug 2016
JASSM ER AGM-158B ^(†)		2018	Lockheed Martin / Troy, Alabama	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Oct 2018	Jan 2020	360	1.063	Y		Jul 2017
JASSM ER AGM-158B ^(†)		2019	Lockheed Martin / Troy, Alabama	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Jun 2019	Jan 2021	360	1.050	Y		Jul 2018
JASSM ER AGM-158B ^(†)		2020	Lockheed Martin / Troy, Alabama	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Jun 2020	Jan 2022	371	1.048	Y		Jul 2019
JASSM ER AGM-158B ^(†)	✓	2020	Lockheed Martin / Troy, Alabama	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Jun 2020	Apr 2022	19	1.048	Y		Jul 2019
JASSM AGM-158D ^(†)		2020	Lockheed Martin / Troy, Alabama	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Jun 2020	Oct 2022	40	1.325	Y		Jul 2019

^(†) indicates the presence of a P-21

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** JASSM0 / Joint Air-Surface Standoff Missile **Item Number / Title [DODIC]:** Joint Air-Surface Standoff Missile

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2016												Fiscal Year 2017												BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	Calendar Year 2016												Calendar Year 2017													
							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	
JASSM ER AGM-158B																																
Prior Years Deliveries: 300																																
	1	2016	AF	240	0	240			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	240			
	1	2017	AF	360	0	360																					A -	-	360			
	1	2018	AF	360	0	360																							360			
	1	2019	AF	360	0	360																							360			
	1	2019	FMS (‡)	40	0	40																							40			
	1	2019	Total	400	0	400																							400			
	1	2020	AF	371	0	371																							371			
✓	1	2020	AF	19	0	19																							19			
JASSM AGM-158D																																
	2	2020	AF	40	0	40																							40			
									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

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JASSM0 / Joint Air-Surface Standoff Missile	Item Number / Title [DODIC]: Joint Air-Surface Standoff Missile
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2018														Fiscal Year 2019														BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018														Calendar Year 2019														
							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					
JASSM ER AGM-158B																																			
Prior Years Deliveries: 300																																			
	1	2016	AF	240	0	240	-	-	-	20	20	20	20	20	20	20	20	20	20	20	20	20							0						
	1	2017	AF	360	0	360	-	-	-	-	-	-	-	-	-	-	-	-	-	30	30	30	30	30	30	30	30	30	90						
	1	2018	AF	360	0	360													A -	-	-	-	-	-	-	-	-	360							
	1	2019	AF	360	0	360																						360							
	1	2019	FMS (‡)	40	0	40																						40							
	1	2019	Total	400	0	400																						400							
	1	2020	AF	371	0	371																						371							
✓	1	2020	AF	19	0	19																						19							
JASSM AGM-158D																																			
	2	2020	AF	40	0	40																						40							
							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					

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** JASSM0 / Joint Air-Surface Standoff Missile **Item Number / Title [DODIC]:** Joint Air-Surface Standoff Missile

Cost Elements <i>(Units in Each)</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					
JASSM ER AGM-158B																																			
Prior Years Deliveries: 300																																			
	1	2016	AF	240	240	0																							0						
	1	2017	AF	360	270	90	30	30	30																				0						
	1	2018	AF	360	0	360	-	-	-	30	30	30	30	30	30	30	30	30	30	30									0						
	1	2019	AF	360	0	360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	30	30	30	30	30	30	30	90						
	1	2019	FMS ^(*)	40	0	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	20	-	-	-	-	0						
	1	2019	Total	400	0	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	30	50	50	30	30	30	30	90						
	1	2020	AF	371	0	371																						371							
✓	1	2020	AF	19	0	19																						19							
JASSM AGM-158D																																			
	2	2020	AF	40	0	40																						40							
							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					

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** JASSM0 / Joint Air-Surface Standoff Missile **Item Number / Title [DODIC]:** Joint Air-Surface Standoff Missile

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022														Fiscal Year 2023														BALANCE	
O C C #	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					
JASSM ER AGM-158B																																			
Prior Years Deliveries: 300																																			
	1	2016	AF	240	240	0																													0
	1	2017	AF	360	360	0																													0
	1	2018	AF	360	360	0																													0
	1	2019	AF	360	270	90	30	30	30																										0
	1	2019	FMS (‡)	40	40	0	-	-	-																										0
	1	2019	Total	400	310	90	30	30	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	1	2020	AF	371	0	371	-	-	-	44	44	44	30	30	44	44	45	46																0	
	✓ 1	2020	AF	19	0	19	-	-	-	-	-	-	9	10																				0	
JASSM AGM-158D																																			
	2	2020	AF	40	0	40	-	-	-	-	-	-	-	-	-	-	-	-	-	13	13	14												0	
							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					

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Exhibit P-21, Production Schedule: PB 2020 Air Force	Date: February 2019
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Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: JASSM0 / Joint Air-Surface Standoff Missile	Item Number / Title [DODIC]: Joint Air-Surface Standoff Missile
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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	Lockheed Martin - Troy, Alabama	175	390	390	0	0	0	0	0	0	9	19	28
2	Lockheed Martin - Troy, Alabama	30	40	40	0	0	0	0	0	0	9	28	37

Remarks:
The first JASSM AGM-158D missiles will deliver in FY23.

(‡) 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).

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** LRASM0 / LRASM0

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0207325F **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: 449

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>)	19	16	15	-	-	-	-	-	-	-	-	50
Gross/Weapon System Cost (<i>\$ in Millions</i>)	71.411	61.728	54.385	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	187.524
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	71.411	61.728	54.385	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	187.524
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	71.411	61.728	54.385	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	187.524
<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>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	3.758	3.858	3.626	-	-	-	-	-	-	-	-	3.750

Description:

The Long Range Anti-Ship Missile (LRASM) is a near-term solution for the Offensive Anti-Surface Warfare (OASuW) air-launch capability gap that will provide flexible, long-range, advanced, anti-surface capability against high-threat maritime targets. The Navy is the lead service for the LRASM program.

The missile is developed based on the Joint Air-to-Surface Standoff Missile-Extended Range (JASSM-ER). LRASM achieved Early Operational Capability (EOC) in December 2018 on the U.S. Air Force B-1 Lancer. EOC on the U.S. Navy F/A-18E/F Super Hornet is projected for CY2019.

The program transitions the Defense Advanced Research Projects Agency (DARPA)/Office of Naval Research (ONR) LRASM demonstration design into a fielded weapon system which supports an increased offensive strike capability with EOC in CY2018 for Air Force platforms and CY2019 on Navy platforms. The U.S. Air Force is procuring missiles over a three year period (FY17-Lot 1, FY18-Lot 2 & FY19-Lot 3). The program is also evaluating Diminishing Manufacturing Sources Material Shortages (DMSMS) and reviewing obsolescence issues. Funds may be used to resolve production DMSMS/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 is contained in PE 0207325F, LRASM
 Additional production funding for this exhibit is also contained in Navy PE 0604786N Offensive Anti-Surface Warfare Weapon Dev.

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.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** LRASM0 / LRASM0

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0207325F **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: 449

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	LRASM0	P-5a, P-21	B		19 / 71.411	16 / 61.728	15 / 54.385	- / 0.000	- / -	- / 0.000
P-40	Total Gross/Weapon System Cost				19 / 71.411	16 / 61.728	15 / 54.385	- / 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/Lot 4 funding requested.

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.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: LRASMO / LRASMO	Item Number / Title [DODIC]: LRASMO
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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)	19	16	15	-	-	-
Gross/Weapon System Cost (\$ in Millions)	71.411	61.728	54.385	0.000	-	0.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	71.411	61.728	54.385	0.000	-	0.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	71.411	61.728	54.385	0.000	-	0.000
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>						
Initial Spares (\$ in Millions)	-	0.000	0.000	0.000	-	0.000
Gross/Weapon System Unit Cost (\$ in Millions)	3.758	3.858	3.626	-	-	-

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 - LRASM Cost																		
Recurring Cost																		
All-Up-Round ^(†)	3.483	19	66.183	3.443	15	51.644	3.443	15	51.644	-	-	0.000	-	-	-	-	-	0.000
Contingent Liability	-	-	5.228	-	-	3.751	-	-	2.741	-	-	-	-	-	-	-	-	-
All-Up-Round Lot 1 (20th Missile) ^(†)	-	-	-	3.483	1	3.483	-	-	-	-	-	-	-	-	-	-	-	-
Contingent Liability Lot 1 (20th Missile)	-	-	-	-	-	0.181	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	<i>-</i>	<i>-</i>	<i>71.411</i>	<i>-</i>	<i>-</i>	<i>59.059</i>	<i>-</i>	<i>-</i>	<i>54.385</i>	<i>-</i>	<i>-</i>	<i>0.000</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>0.000</i>
<i>Subtotal: Hardware - LRASM Cost</i>	<i>-</i>	<i>-</i>	<i>71.411</i>	<i>-</i>	<i>-</i>	<i>59.059</i>	<i>-</i>	<i>-</i>	<i>54.385</i>	<i>-</i>	<i>-</i>	<i>0.000</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>0.000</i>
Support - LRASMO Cost																		
Program Management Administration (PMA)-A&AS	-	-	0.000	-	-	0.280	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
Program Management Administration (PMA)-Gov't Cost	-	-	0.000	-	-	0.089	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
Tooling	-	-	-	-	-	2.300	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - LRASMO Cost</i>	<i>-</i>	<i>-</i>	<i>0.000</i>	<i>-</i>	<i>-</i>	<i>2.669</i>	<i>-</i>	<i>-</i>	<i>0.000</i>	<i>-</i>	<i>-</i>	<i>0.000</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>0.000</i>
Gross/Weapon System Cost	3.758	19	71.411	3.858	16	61.728	3.626	15	54.385	-	-	0.000	-	-	-	-	-	0.000

Remarks:

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: LRASM0 / LRASM0	Item Number / Title [DODIC]: LRASM0

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

The LRASM contract is FPIF, with a target price and a total contract price. The funding is obligated to the target price but the difference between the target price and the total contract price is required to be held as a Contingent Liability (CL). The final determination for award of a CL will not be made until after the final item is delivered and actual costs are established.

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

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: LRASM0 / LRASM0	Item Number / Title [DODIC]: LRASM0
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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
All-Up-Round ^(†)		2017	Lockheed Martin / Troy, AL	SS / FPIF	Eglin AFB	Jul 2017	Sep 2018	19	3.483	N	Oct 2015	Oct 2015
All-Up-Round ^(†)		2018	Lockheed Martin / Troy, AL	SS / FPIF	Eglin AFB	Nov 2018	Nov 2021	15	3.443	N	Jan 2017	Jan 2017
All-Up-Round ^(†)		2019	Lockheed Martin / Troy, AL	SS / FPIF	Eglin AFB	Aug 2019	Nov 2022	15	3.443	N	Jan 2019	Jan 2019
All-Up-Round Lot 1 (20th Missile)		2018	Lockheed Martin / Troy, AL	SS / FPIF	Eglin AFB	Jul 2017	Aug 2019	1	3.483	N	Oct 2015	Oct 2015

^(†) indicates the presence of a P-21

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: LRASM0 / LRASM0	Item Number / Title [DODIC]: LRASM0
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2017												Fiscal Year 2018												BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018												
							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
All-Up-Round																															
	1	2017	AF	19	0	19																							9	10	
	1	2017	NAVY (+)	15	0	15																									15
	1	2017	Total	34	0	34																						9	25		
	1	2018	AF	15	0	15																									15
	1	2018	NAVY (+)	34	0	34																									34
	1	2018	Total	49	0	49																								49	
	1	2019	AF	15	0	15																									15
	1	2019	NAVY (+)	35	0	35																									35
	1	2019	Total	50	0	50																								50	
							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	

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: LRASMO / LRASMO	Item Number / Title [DODIC]: LRASMO
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Cost Elements <i>(Units in Each)</i>					Fiscal Year 2019												Fiscal Year 2020												BALANCE			
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020													
							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	
All-Up-Round																																
1		2017	AF	19	9	10	-	1	-	-	-	-	-	-	2	2	5													0		
1		2017	NAVY (‡)	15	0	15	-	-	-	-	-	-	3	3	3	3	3	-												0		
1		2017	Total	34	9	25	-	1	-	-	-	-	3	3	3	5	5	5	-	-	-	-	-	-	-	-	-	-	-	0		
1		2018	AF	15	0	15		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15			
1		2018	NAVY (‡)	34	0	34		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34			
1		2018	Total	49	0	49		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49			
1		2019	AF	15	0	15												A	-	-	-	-	-	-	-	-	-	-	15			
1		2019	NAVY (‡)	35	0	35												A	-	-	-	-	-	-	-	-	-	-	35			
1		2019	Total	50	0	50												-	-	-	-	-	-	-	-	-	-	-	50			
								O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	
								C	O	E	A	E	A	A	U	U	U	S	C	O	V	E	A	E	A	A	U	U	U	A	S	
								T	V	C	N	B	R	R	Y	N	L	G	P	T				N	B	R	R	Y	N	L	G	P

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** LRASM0 / LRASM0 **Item Number / Title [DODIC]:** LRASM0

Cost Elements <i>(Units in Each)</i>							Fiscal Year 2021														Fiscal Year 2022														BALANCE
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021														Calendar Year 2022														
							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					
All-Up-Round																																			
1		2017	AF	19	19	0																							0						
1		2017	NAVY (‡)	15	15	0																							0						
1		2017	Total	34	34	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
1		2018	AF	15	0	15	-	-	-	-	-	-	-	-	-	-	-	5	5	5									0						
1		2018	NAVY (‡)	34	0	34	-	-	-	-	3	3	4	4	4	4	4	4	-	-	-									0					
1		2018	Total	49	0	49	-	-	-	-	3	3	4	4	4	4	4	4	5	5	5	-	-	-	-	-	-	-	-	0					
1		2019	AF	15	0	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15							
1		2019	NAVY (‡)	35	0	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	3							
1		2019	Total	50	0	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	18							
							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					

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** LRASMO / LRASMO **Item Number / Title [DODIC]:** LRASMO

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2023												Fiscal Year 2024												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024												
							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
All-Up-Round																															
1		2017	AF	19	19	0																							0		
1		2017	NAVY (+)	15	15	0																							0		
1		2017	Total	34	34	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
1		2018	AF	15	15	0																							0		
1		2018	NAVY (+)	34	34	0																							0		
1		2018	Total	49	49	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
1		2019	AF	15	0	15	-	5	5	5																			0		
1		2019	NAVY (+)	35	32	3	3	-	-	-																			0		
1		2019	Total	50	32	18	3	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
							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	

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Exhibit P-21, Production Schedule: PB 2020 Air Force								Date: February 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2				P-1 Line Item Number / Title: LRASMO / LRASMO				Item Number / Title [DODIC]: LRASMO					
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	Lockheed Martin - Troy, AL	12	50	50	0	0	0	0	0	0	11	39	50

(‡) 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).

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** M09HAI / Sidewinder (AIM-9X)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0207161F

Line Item MDAP/MAIS Code: 442

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>)	1,759	310	256	355	-	355	353	218	250	238	2,570	6,309
Gross/Weapon System Cost (<i>\$ in Millions</i>)	794.818	124.650	121.253	160.408	-	160.408	164.987	117.621	121.983	120.545	1,630.840	3,357.105
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	794.818	124.650	121.253	160.408	-	160.408	164.987	117.621	121.983	120.545	1,630.840	3,357.105
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	794.818	124.650	121.253	160.408	-	160.408	164.987	117.621	121.983	120.545	1,630.840	3,357.105

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

Initial Spares (<i>\$ in Millions</i>)	15.273	5.720	4.255	0.490	-	0.490	1.864	13.702	13.736	1.971	24.180	81.191
Flyaway Unit Cost (<i>\$ in Millions</i>)	0.400	0.362	0.430	0.427	-	0.427	0.435	0.456	0.455	0.428	0.582	0.482
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	0.452	0.402	0.474	0.452	-	0.452	0.467	0.540	0.488	0.506	0.635	0.532

Description:

The AIM-9X Block II/II+ Sidewinder (AIM-9X Blk II/II+) continues the evolution of the AIM-9 series of missiles. This missile program delivers a launch and leave, air combat munition that uses passive Infrared (IR) energy to acquire and track enemy air targets and complements the radar guided Advanced Medium Range Air-to-Air Missile (AMRAAM). The missile provides first shot, first kill opportunities while conducting basic fighter maneuvering (dogfighting) Within Visual Range (WVR) which is essential for aircrew survival. The AIM-9X provides these opportunities with unmatched offensive and defensive capabilities against threats WVR, even when IR countermeasures are employed.

The AIM-9X also provides air superiority in the Beyond Visual Range (BVR) air-to-air battle. Anti-tamper features have been incorporated to protect improvements inherent in this design. The AIM-9X Block II missile is critical for projecting power and winning decisively against threats identified in Defense Planning Guidance and the Navy's Navigation Plan.

AIM-9X is a Post Milestone C, Acquisition Category IC (ACAT-IC) joint service program led by the Department of the Navy. In June 2011, the Milestone Decision Authority (MDA) established the AIM-9X Block II missile program which was approved for entry at Milestone C for Low Rate Initial Production (LRIP). The Block I program ended with the Sec 2366 A/B certification and Acquisition Program Baseline for AIM-9X Block II approval on December 23, 2011. In August 2015, the program received approval for Full Rate Production (FRP), and the Acquisition Program Baseline was re-established.

In December 2017, the program began to procure a third variant of the missile labeled the AIM-9X Block II PLUS (Block II+) to satisfy the requirements of the Joint Strike Fighter platform. This version of the missile is being produced on the same production line as the AIM-9X Block II missile. For contracting purposes, the nomenclature of the AIM-9X Block II missile is identified as AIM-9X-2 and the AIM-9X Block II+ missile is identified as AIM-9X-3.

The USN & USAF require additional quantities beyond the approved APB (Change 1: 31 Aug 2015); an update is in staffing for approval.

Funding for this exhibit contained in PE 0207161F.

Funding may be used to address Diminishing Manufacturing Source (DMS) issues.

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.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** M09HAI / Sidewinder (AIM-9X)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0207161F

Line Item MDAP/MAIS Code: 442

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	Sidewinder (AIM-9X)	P-5a, P-21	A		1,759 / 794.818	310 / 124.650	256 / 121.253	355 / 160.408	- / -	355 / 160.408
P-40	Total Gross/Weapon System Cost				1,759 / 794.818	310 / 124.650	256 / 121.253	355 / 160.408	- / -	355 / 160.408

*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 provides funding to procure the sixth lot of Full Rate Production (FRP) AIM-9X Block II (Blk II) missiles, as well as the fourth lot of AIM-9X Block II Plus (Blk II+) missiles for the Air Force. FY 2020 also continues the procurement of missiles for the Army Indirect Fire Protection Capability Increment 2 (IFPC2) program. The program unit costs are based on quantities procured by all the US Navy and US Air Force as well as Foreign Military Sales customers.

Total Program quantity by service includes a mix of All Up Round (AUR) missiles and Captive Air Training Missiles (CATM) as such:

The US Air Force will procure 7,598 total missiles under Budget Line Item 3479: 1,289 Block I missiles and 6,309 Block II/II+ missiles. In addition, the US Air Force procured 67 Block I missiles in FY 2001 under the AIM-9M Modification program.

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.

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Exhibit P-5, Cost Analysis: PB 2020 Air Force											Date: February 2019				
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2						P-1 Line Item Number / Title: M09HAI / Sidewinder (AIM-9X)					Item Number / Title [DODIC]: Sidewinder (AIM-9X)				
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)				1,759		310		256		355		-		355	
Gross/Weapon System Cost (\$ in Millions)				794.818		124.650		121.253		160.408		-		160.408	
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-	
Net Procurement (P-1) (\$ in Millions)				794.818		124.650		121.253		160.408		-		160.408	
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-	
Total Obligation Authority (\$ in Millions)				794.818		124.650		121.253		160.408		-		160.408	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>															
Initial Spares (\$ in Millions)				15.273		5.720		4.255		0.490		-		0.490	
Gross/Weapon System Unit Cost (\$ in Millions)				0.452		0.402		0.474		0.452		-		0.452	

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)
Flyaway - Flyaway End Item Cost																		
Recurring Cost																		
All Up Round - Block II ^(†)	0.401	1,280	513.702	0.356	171	60.876	0.372	176	65.472	0.389	275	106.975	-	-	-	0.389	275	106.975
Captive Air Training Missile (CATM) - Block II ^(†)	0.222	429	95.070	0.184	64	11.776	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
Engineering Change Orders - Block II	-	-	2.038	-	-	2.952	-	-	2.010	-	-	2.709	-	-	-	-	-	2.709
Diminishing Manufacturing Sources	-	-	4.117	-	-	1.566	-	-	1.596	-	-	1.628	-	-	-	-	-	1.628
Government Cost (GFE & Testing) - Block II	-	-	0.550	-	-	0.065	-	-	0.069	-	-	0.097	-	-	-	-	-	0.097
Special Test/Special Tooling Equipment - Block II	-	-	15.540	-	-	1.270	-	-	1.294	-	-	1.319	-	-	-	-	-	1.319
Missile Containers - Block II	0.013	491	6.160	0.012	87	1.027	0.012	71	0.852	0.012	98	1.205	-	-	-	0.012	98	1.205
Non-Recurring Engineering - Block II	-	-	39.412	-	-	0.000	-	-	2.700	-	-	0.000	-	-	-	-	-	0.000
All Up Round - Block II Plus ^(†)	0.540	50	26.993	0.435	75	32.625	0.451	80	36.080	0.472	80	37.760	-	-	-	0.472	80	37.760
<i>Subtotal: Recurring Cost</i>	-	-	703.582	-	-	112.157	-	-	110.073	-	-	151.693	-	-	-	-	-	151.693

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Exhibit P-5, Cost Analysis: PB 2020 Air Force												Date: February 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2						P-1 Line Item Number / Title: M09HAI / Sidewinder (AIM-9X)						Item Number / Title [DODIC]: Sidewinder (AIM-9X)					
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)
<i>Subtotal: Flyaway - Flyaway End Item Cost</i>	-	-	703.582	-	-	112.157	-	-	110.073	-	-	151.693	-	-	-	-	-	151.693
Support - Support End Item Cost																		
Production Tech Support	-	-	22.784	-	-	6.167	-	-	5.955	-	-	3.861	-	-	-	-	-	3.861
Peculiar Support Equipment - Block II	-	-	0.155	-	-	0.033	-	-	0.034	-	-	0.034	-	-	-	-	-	0.034
Test Equipment - Block II	-	-	11.193	-	-	0.000	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
PMA Contractor Services - Block II	-	-	10.079	-	-	1.252	-	-	1.229	-	-	0.942	-	-	-	-	-	0.942
PMA Other Government Costs - Block II	-	-	47.025	-	-	5.012	-	-	3.934	-	-	3.848	-	-	-	-	-	3.848
Training Support - Block II	-	-	-	-	-	0.029	-	-	0.028	-	-	0.030	-	-	-	-	-	0.030
<i>Subtotal: Support - Support End Item Cost</i>	-	-	91.236	-	-	12.493	-	-	11.180	-	-	8.715	-	-	-	-	-	8.715
Gross/Weapon System Cost	0.452	1,759	794.818	0.402	310	124.650	0.474	256	121.253	0.452	355	160.408	-	-	-	0.452	355	160.408

Remarks:

The program is in production and any changes that will occur, prior to or after fielding, are software changes. Hardware specs are available and being used to manufacture the missile. Baseline software specs are known.

The FY20 Contract is scheduled for award in February 2020 and procures the Full Rate Production (FRP) missile.

Block I is concluded and all funding/quantity data in the documents are associated with Block II activities. The Block I program costs were \$472.086M.

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

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: M09HAI / Sidewinder (AIM-9X)	Item Number / Title [DODIC]: Sidewinder (AIM-9X)
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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
All Up Round - Block II ^(†)		2016	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Jul 2016	Apr 2018	450	0.371	Y		Jan 2015
All Up Round - Block II ^(†)		2017	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Mar 2017	Apr 2019	160	0.379	Y		Jan 2016
All Up Round - Block II ^(†)		2018	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Dec 2018	Apr 2020	171	0.356	Y		Jan 2017
All Up Round - Block II ^(†)		2019	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Feb 2019	Apr 2021	176	0.372	Y		Jan 2018
All Up Round - Block II ^(†)		2020	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Feb 2020	Apr 2022	275	0.389	Y		Jan 2019
Captive Air Training Missile (CATM) - Block II ^(†)		2016	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Jul 2016	Apr 2018	77	0.193	Y		Jan 2015
Captive Air Training Missile (CATM) - Block II ^(†)		2017	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Jun 2018	Apr 2019	77	0.196	Y		Jan 2016
Captive Air Training Missile (CATM) - Block II ^(†)		2018	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Dec 2018	Apr 2020	64	0.184	Y		Jan 2017
All Up Round - Block II Plus ^(†)		2017	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Feb 2017	Apr 2019	50	0.540	Y		Jan 2016
All Up Round - Block II Plus ^(†)		2018	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Dec 2018	Apr 2020	75	0.435	Y		Jan 2017
All Up Round - Block II Plus ^(†)		2019	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Feb 2019	Apr 2021	80	0.451	Y		Jan 2018
All Up Round - Block II Plus ^(†)		2020	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	NAVAIR	Feb 2020	Apr 2022	80	0.472	Y		Jan 2019

^(†) indicates the presence of a P-21

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** M09HAI / Sidewinder (AIM-9X) **Item Number / Title [DODIC]:** Sidewinder (AIM-9X)

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2016													Fiscal Year 2017													BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	Calendar Year 2016													Calendar Year 2017													
							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			
All Up Round - Block II																																	
Prior Years Deliveries: 670																																	
	1	2016	AF	450	0	450																							450				
	1	2016	ARMY (+)	7	0	7																							7				
	1	2016	FMS (+)	64	0	64																							64				
	1	2016	NAVY (+)	165	0	165																							165				
	1	2016	Total	686	0	686																							686				
	1	2017	AF	160	0	160																							160				
	1	2017	FMS (+)	120	0	120																							120				
	1	2017	NAVY (+)	65	0	65																							65				
	1	2017	Total	345	0	345																							345				
	1	2018	AF	171	0	171																							171				
	1	2018	FMS (+)	423	0	423																							423				
	1	2018	NAVY (+)	138	0	138																							138				
	1	2018	Total	732	0	732																							732				
	1	2019	AF	176	0	176																							176				
	1	2019	FMS (+)	100	0	100																							100				
	1	2019	NAVY (+)	227	0	227																							227				
	1	2019	Total	503	0	503																							503				
	1	2020	AF	275	0	275																							275				
	1	2020	FMS (+)	100	0	100																							100				
	1	2020	NAVY (+)	210	0	210																							210				
	1	2020	Total	585	0	585																							585				
Captive Air Training Missile (CATM) - Block II																																	
Prior Years Deliveries: 275																																	
	2	2016	AF	77	0	77																							77				
	2	2016	FMS (+)	128	0	128																							128				
	2	2016	NAVY (+)	47	0	47																							47				
	2	2016	Total	252	0	252																							252				
	2	2017	AF	77	0	77																							77				
							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			

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Exhibit P-21, Production Schedule: PB 2020 Air Force	Date: February 2019
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Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: M09HAI / Sidewinder (AIM-9X)	Item Number / Title [DODIC]: Sidewinder (AIM-9X)
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Cost Elements (Units in Each)					Fiscal Year 2016														Fiscal Year 2017														B A L A N C E																																																																																																										
O C C O	M F R #	F Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 1 5	B A L D U E A S O F 1 O C T	Calendar Year 2016														Calendar Year 2017																																																																																																																						
							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																																																																																																													
2	2017	FMS (+)	98	0	98																											98																																																																																																											
2	2017	NAVY (+)	32	0	32																											32																																																																																																											
2	2017	Total	207	0	207																										207																																																																																																												
2	2018	AF	64	0	64																											64																																																																																																											
2	2018	FMS (+)	96	0	96																											96																																																																																																											
2	2018	NAVY (+)	40	0	40																											40																																																																																																											
2	2018	Total	200	0	200																											200																																																																																																											
All Up Round - Block II Plus																																																																																																																																											
3	2017	AF	50	0	50																A -	-	-	-	-	-	-	-	-	-		50																																																																																																											
3	2017	NAVY (+)	50	0	50																A -	-	-	-	-	-	-	-	-	-		50																																																																																																											
3	2017	Total	100	0	100																-	-	-	-	-	-	-	-	-	-		100																																																																																																											
3	2018	AF	75	0	75																												75																																																																																																										
3	2018	FMS (+)	135	0	135																												135																																																																																																										
3	2018	NAVY (+)	12	0	12																												12																																																																																																										
3	2018	Total	222	0	222																												222																																																																																																										
3	2019	AF	80	0	80																												80																																																																																																										
3	2019	FMS (+)	124	0	124																												124																																																																																																										
3	2019	NAVY (+)	8	0	8																												8																																																																																																										
3	2019	Total	212	0	212																												212																																																																																																										
3	2020	AF	80	0	80																												80																																																																																																										
3	2020	NAVY (+)	8	0	8																												8																																																																																																										
3	2020	Total	88	0	88																												88																																																																																																										
<table border="0" style="width:100%; font-size: small;"> <tr> <td>O</td><td>N</td><td>D</td><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td> </tr> <tr> <td>C</td><td>O</td><td>E</td><td>A</td><td>E</td><td>A</td><td>P</td><td>A</td><td>U</td><td>U</td><td>U</td><td>E</td><td>C</td><td>O</td><td>O</td><td>E</td><td>A</td><td>E</td><td>A</td><td>A</td><td>U</td><td>U</td><td>U</td><td>E</td><td>C</td><td>O</td><td>O</td><td>E</td><td>A</td><td>E</td><td>A</td><td>A</td><td>U</td><td>U</td><td>U</td><td>E</td> </tr> <tr> <td>T</td><td>V</td><td>C</td><td>N</td><td>B</td><td>R</td><td>R</td><td>Y</td><td>N</td><td>L</td><td>G</td><td>P</td><td>T</td><td>V</td><td>C</td><td>N</td><td>B</td><td>R</td><td>R</td><td>Y</td><td>N</td><td>L</td><td>G</td><td>P</td><td>T</td><td>V</td><td>C</td><td>N</td><td>B</td><td>R</td><td>R</td><td>Y</td><td>N</td><td>L</td><td>G</td><td>P</td> </tr> </table>																																O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	C	O	E	A	E	A	P	A	U	U	U	E	C	O	O	E	A	E	A	A	U	U	U	E	C	O	O	E	A	E	A	A	U	U	U	E	T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P
O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S																																																																																																								
C	O	E	A	E	A	P	A	U	U	U	E	C	O	O	E	A	E	A	A	U	U	U	E	C	O	O	E	A	E	A	A	U	U	U	E																																																																																																								
T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P																																																																																																								

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** M09HAI / Sidewinder (AIM-9X) **Item Number / Title [DODIC]:** Sidewinder (AIM-9X)

Cost Elements <i>(Units in Each)</i>				Fiscal Year 2018														Fiscal Year 2019												BALANCE			
O 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 7	BAL D U E A S O F 1 O C T	Calendar Year 2018														Calendar Year 2019												
							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		
All Up Round - Block II																																	
Prior Years Deliveries: 670																																	
1	2016	AF		450	0	450	-	-	-	-	-	-	38	37	38	37	38	37	38	37	38	37	38	37	38	37	38	37	0				
1	2016	ARMY (+)		7	0	7	-	-	-	-	-	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	0				
1	2016	FMS (+)		64	0	64	-	-	-	6	5	5	6	5	5	6	5	5	6	5	5	-	-	-	-	-	-	-	0				
1	2016	NAVY (+)		165	0	165	-	-	-	-	-	-	13	14	14	14	13	14	14	14	13	14	14	14	-	-	-	0					
1	2016	Total		686	0	686	-	-	-	6	5	5	58	56	58	57	57	56	59	56	57	51	53	52	-	-	-	0					
1	2017	AF		160	0	160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	100					
1	2017	FMS (+)		120	0	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	60					
1	2017	NAVY (+)		65	0	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	10	10	24					
1	2017	Total		345	0	345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	30	30	28	24	184				
1	2018	AF		171	0	171	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	171					
1	2018	FMS (+)		423	0	423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423					
1	2018	NAVY (+)		138	0	138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	138					
1	2018	Total		732	0	732	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	732					
1	2019	AF		176	0	176	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	176					
1	2019	FMS (+)		100	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100					
1	2019	NAVY (+)		227	0	227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227					
1	2019	Total		503	0	503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	503					
1	2020	AF		275	0	275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275					
1	2020	FMS (+)		100	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100					
1	2020	NAVY (+)		210	0	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	210					
1	2020	Total		585	0	585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	585					
Captive Air Training Missile (CATM) - Block II																																	
Prior Years Deliveries: 275																																	
2	2016	AF		77	0	77	-	-	-	-	-	-	8	8	7	6	6	6	6	6	6	6	6	6	6	6	6	0					
2	2016	FMS (+)		128	0	128	-	-	-	10	11	11	11	11	11	11	10	10	11	10	-	-	-	-	-	-	-	0					
2	2016	NAVY (+)		47	0	47	-	-	-	-	-	-	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0					
2	2016	Total		252	0	252	-	-	-	10	11	11	22	23	22	21	21	20	20	21	20	10	10	10	-	-	0						
2	2017	AF		77	0	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	7	6	38					
							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			

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Exhibit P-21, Production Schedule: PB 2020 Air Force											Date: February 2019							
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2					P-1 Line Item Number / Title: M09HAI / Sidewinder (AIM-9X)							Item Number / Title [DODIC]: Sidewinder (AIM-9X)						

Cost Elements (Units in Each)					Fiscal Year 2018												Fiscal Year 2019												B A L A N C E																	
O C C O	M F R #	F Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 1 7	B A L D U E A S O F 1 O C T	Calendar Year 2018												Calendar Year 2019																											
							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															
	2	2017	FMS (+)	98	0	98											A	-	-	-	-	-	-	-	-	-	-	-	-																	50
	2	2017	NAVY (+)	32	0	32											A	-	-	-	-	-	-	-	-	-	-	-	-																	17
	2	2017	Total	207	0	207																								16	18	16	18	16	18	18	18	16	18	18	18	18	18	18	18	105
	2	2018	AF	64	0	64																																								64
	2	2018	FMS (+)	96	0	96																																								96
	2	2018	NAVY (+)	40	0	40																																								40
	2	2018	Total	200	0	200																																								200
All Up Round - Block II Plus																																														
	3	2017	AF	50	0	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20				
	3	2017	NAVY (+)	50	0	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20				
	3	2017	Total	100	0	100																																					40			
	3	2018	AF	75	0	75																																						75		
	3	2018	FMS (+)	135	0	135																																						135		
	3	2018	NAVY (+)	12	0	12																																						12		
	3	2018	Total	222	0	222																																						222		
	3	2019	AF	80	0	80																																						80		
	3	2019	FMS (+)	124	0	124																																						124		
	3	2019	NAVY (+)	8	0	8																																						8		
	3	2019	Total	212	0	212																																						212		
	3	2020	AF	80	0	80																																						80		
	3	2020	NAVY (+)	8	0	8																																						8		
	3	2020	Total	88	0	88																																						88		

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** M09HAI / Sidewinder (AIM-9X) **Item Number / Title [DODIC]:** Sidewinder (AIM-9X)

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
All Up Round - Block II																															
Prior Years Deliveries: 670																															
	1	2016	AF	450	450	0																							0		
	1	2016	ARMY (‡)	7	7	0																							0		
	1	2016	FMS (‡)	64	64	0																							0		
	1	2016	NAVY (‡)	165	165	0																							0		
	1	2016	Total	686	686	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
	1	2017	AF	160	60	100	10	14	15	26	15	20																0			
	1	2017	FMS (‡)	120	60	60	10	10	10	10	10	10																0			
	1	2017	NAVY (‡)	65	41	24	4	4	4	4	4	4																0			
	1	2017	Total	345	161	184	24	28	29	40	29	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
	1	2018	AF	171	0	171	-	-	-	-	-	-	14	14	14	14	14	14	14	14	15	15	15					0			
	1	2018	FMS (‡)	423	0	423	-	-	-	-	-	-	35	35	35	35	36	35	35	35	35	36	35	36			0				
	1	2018	NAVY (‡)	138	0	138	-	-	-	-	-	-	11	12	11	12	11	12	11	12	11	12	11	12			0				
	1	2018	Total	732	0	732	-	-	-	-	-	-	60	61	60	61	61	61	60	61	60	63	61	63	-	-	0				
	1	2019	AF	176	0	176	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	15	14	15	15	14	88	
	1	2019	FMS (‡)	100	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	9	8	8	9	50	
	1	2019	NAVY (‡)	227	0	227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	19	19	19	19	19	114	
	1	2019	Total	503	0	503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	42	42	42	42	42	252		
	1	2020	AF	275	0	275																						275			
	1	2020	FMS (‡)	100	0	100																						100			
	1	2020	NAVY (‡)	210	0	210																						210			
	1	2020	Total	585	0	585																						585			
Captive Air Training Missile (CATM) - Block II																															
Prior Years Deliveries: 275																															
	2	2016	AF	77	77	0																						0			
	2	2016	FMS (‡)	128	128	0																						0			
	2	2016	NAVY (‡)	47	47	0																						0			
	2	2016	Total	252	252	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
	2	2017	AF	77	39	38	6	7	6	7	6	6																0			
							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	

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: M09HAI / Sidewinder (AIM-9X)	Item Number / Title [DODIC]: Sidewinder (AIM-9X)
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Cost Elements (Units in Each)					Fiscal Year 2020													Fiscal Year 2021												B A L A N C E				
O C C O	M F R #	F Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 1 9	B A L 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			
	2	2017	FMS (+)	98	48	50	8	8	8	8	8	9	9																					0
	2	2017	NAVY (+)	32	15	17	2	3	3	3	3	3	3																				0	
	2	2017	Total	207	102	105	16	18	17	18	18	18	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	2	2018	AF	64	0	64	-	-	-	-	-	-	-	5	5	5	5	5	6	6	6	6	5	5	5								0	
	2	2018	FMS (+)	96	0	96	-	-	-	-	-	-	-	8	8	8	8	8	8	8	8	8	8	8								0		
	2	2018	NAVY (+)	40	0	40	-	-	-	-	-	-	-	3	3	3	3	4	4	4	4	3	3	3	3							0		
	2	2018	Total	200	0	200	-	-	-	-	-	-	-	16	16	16	16	17	18	18	18	17	16	16	16	-	-	-	-	-	-	0		
All Up Round - Block II Plus																																		
	3	2017	AF	50	30	20	5	5	5	2	2	1																				0		
	3	2017	NAVY (+)	50	30	20	5	5	5	2	2	1																				0		
	3	2017	Total	100	60	40	10	10	10	4	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	3	2018	AF	75	0	75	-	-	-	-	-	-	-	7	6	6	7	6	6	7	6	6	6	6									0	
	3	2018	FMS (+)	135	0	135	-	-	-	-	-	-	-	11	11	11	12	11	11	11	12	11	11	12								0		
	3	2018	NAVY (+)	12	0	12	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1								0		
	3	2018	Total	222	0	222	-	-	-	-	-	-	-	19	18	18	20	18	18	19	19	18	18	18	-	-	-	-	-	-	-	0		
	3	2019	AF	80	0	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	7	7	6	7	7		40		
	3	2019	FMS (+)	124	0	124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	11	10	10	11		62			
	3	2019	NAVY (+)	8	0	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	1		4			
	3	2019	Total	212	0	212	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	17	19	16	18	19		106			
	3	2020	AF	80	0	80								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		80		
	3	2020	NAVY (+)	8	0	8								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		8		
	3	2020	Total	88	0	88								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		88			
							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				

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** M09HAI / Sidewinder (AIM-9X) **Item Number / Title [DODIC]:** Sidewinder (AIM-9X)

Cost Elements <i>(Units in Each)</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
All Up Round - Block II																															
Prior Years Deliveries: 670																															
	1	2016	AF	450	450	0																							0		
	1	2016	ARMY (‡)	7	7	0																							0		
	1	2016	FMS (‡)	64	64	0																							0		
	1	2016	NAVY (‡)	165	165	0																							0		
	1	2016	Total	686	686	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	1	2017	AF	160	160	0																							0		
	1	2017	FMS (‡)	120	120	0																							0		
	1	2017	NAVY (‡)	65	65	0																							0		
	1	2017	Total	345	345	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	1	2018	AF	171	171	0																							0		
	1	2018	FMS (‡)	423	423	0																							0		
	1	2018	NAVY (‡)	138	138	0																							0		
	1	2018	Total	732	732	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	1	2019	AF	176	88	88	15	15	14	15	15	14																	0		
	1	2019	FMS (‡)	100	50	50	8	8	9	8	8	9																	0		
	1	2019	NAVY (‡)	227	113	114	19	19	19	19	19	19																	0		
	1	2019	Total	503	251	252	42	42	42	42	42	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	1	2020	AF	275	0	275	-	-	-	-	-	-	24	24	24	24	24	23	23	23	23	23	23	17					0		
	1	2020	FMS (‡)	100	0	100	-	-	-	-	-	-	8	8	9	8	8	9	8	8	9	8	8	9					0		
	1	2020	NAVY (‡)	210	0	210	-	-	-	-	-	-	17	18	17	17	17	18	17	18	17	18	18	18					0		
	1	2020	Total	585	0	585	-	-	-	-	-	-	49	50	50	49	49	50	48	49	49	49	49	44	-	-	-	-	0		
Captive Air Training Missile (CATM) - Block II																															
Prior Years Deliveries: 275																															
	2	2016	AF	77	77	0																							0		
	2	2016	FMS (‡)	128	128	0																							0		
	2	2016	NAVY (‡)	47	47	0																							0		
	2	2016	Total	252	252	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	2	2017	AF	77	77	0																							0		
							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	

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 P-1 Line Item Number / Title: M09HAI / Sidewinder (AIM-9X) Item Number / Title [DODIC]: Sidewinder (AIM-9X)

Cost Elements (Units in Each)						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						
	2	2017	FMS (+)	98	98	0																														0
	2	2017	NAVY (+)	32	32	0																														0
	2	2017	Total	207	207	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	2	2018	AF	64	64	0																													0	
	2	2018	FMS (+)	96	96	0																													0	
	2	2018	NAVY (+)	40	40	0																													0	
	2	2018	Total	200	200	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
All Up Round - Block II Plus																																				
	3	2017	AF	50	50	0																													0	
	3	2017	NAVY (+)	50	50	0																													0	
	3	2017	Total	100	100	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	3	2018	AF	75	75	0																													0	
	3	2018	FMS (+)	135	135	0																													0	
	3	2018	NAVY (+)	12	12	0																													0	
	3	2018	Total	222	222	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	3	2019	AF	80	40	40	6	7	7	6	7	7																							0	
	3	2019	FMS (+)	124	62	62	10	10	11	10	10	11																							0	
	3	2019	NAVY (+)	8	4	4	1	1	1	1	-	-																							0	
	3	2019	Total	212	106	106	17	18	19	17	17	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	3	2020	AF	80	0	80	-	-	-	-	-	-	7	7	6	7	7	6	7	7	6	7	7	6										0		
	3	2020	NAVY (+)	8	0	8	-	-	-	-	-	-	1	-	1	1	1	1	-	1	1	-	-	1										0		
	3	2020	Total	88	0	88	-	-	-	-	-	-	8	7	7	8	8	7	7	8	7	7	7	7	-	-	-	-	-	-	-	-	0			
							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						

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Exhibit P-21, Production Schedule: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2		P-1 Line Item Number / Title: M09HAI / Sidewinder (AIM-9X)
		Item Number / Title [DODIC]: Sidewinder (AIM-9X)

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	Raytheon Missile Systems - Tucson, AZ	300	600	1,400	0	0	0	0	0	0	5	26	31
2	Raytheon Missile Systems - Tucson, AZ	300	600	1,400	0	0	0	0	0	0	5	26	31
3	Raytheon Missile Systems - Tucson, AZ	300	600	1,400	0	0	0	0	0	0	5	26	31

Remarks:
Due to system limitations, the Annual Production Rates do not accurately reflect the programs limitations. The Minimum Sustainment Rate is 300 missiles of any mix required of All Up Rounds (Item 1), Captive Air Training Missiles (Item 2), and All Up Round Block II Plus (Item 3). The ECON rate is 600 missiles of any mix required, and the MAX production rate is 1,400 missiles of any mix required.

The MSR is for the combination of CATM, AUR Block II and AUR Block II+. Each individual item does not have an MSR. The MSR needs to be met by the overall program and not just per service. The MSR is shared by the USAF, USN and FMS.

Annual Production Rate limitations are based on 4 missiles per 1 container ratio.

(±) 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).

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** MAMRA0 / AMRAAM

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0207163F

Line Item MDAP/MAIS Code: 185

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>)	9,783	185	187	220	-	220	388	391	425	425	847	12,851
Gross/Weapon System Cost (<i>\$ in Millions</i>)	9,380.055	264.327	307.486	332.250	0.000	332.250	461.724	438.070	470.882	455.956	1,203.122	13,313.872
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	9,380.055	264.327	307.486	332.250	0.000	332.250	461.724	438.070	470.882	455.956	1,203.122	13,313.872
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	9,380.055	264.327	307.486	332.250	0.000	332.250	461.724	438.070	470.882	455.956	1,203.122	13,313.872

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

Initial Spares (<i>\$ in Millions</i>)	84.700	2.067	2.023	0.529	-	0.529	2.094	3.052	3.091	2.214	4.571	104.341
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	0.959	1.429	1.644	1.510	-	1.510	1.190	1.120	1.108	1.073	1.420	1.036

Description:

The Advanced Medium Range Air-to-Air Missile (AMRAAM) is the premier all-weather, all-environment radar guided missile developed jointly by the Air Force and Navy. The Air Force is the lead service. AMRAAM is a small, light, fast missile with improved capabilities against very low and high-altitude targets in an Electronic Attack (EA) environment. Funding also used to address Diminishing Manufacturing Sources (DMS) issues.

FY20: Due to parts limitations with Processor Replacement Program (PRP) missile configuration and a delay in the Form, Fit, Function Refresh (F3R) effort, the program office has adjusted FY20 production quantities to ensure a smooth production cut-in of F3R design. There is a difference between USAF and USN All Up Round Unit Cost due to the different ratios of each missile type for each service.

CY funding totals include \$2.600M appropriated for Overseas Contingency Operations.

Funding for this exhibit is contained in PE 0207163F.

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.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** MAMRA0 / AMRAAM

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0207163F

Line Item MDAP/MAIS Code: 185

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 <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>
P-5	AMRAAM	P-5a, P-21	A		9,783 / 9,380.055	185 / 264.327	187 / 307.486	220 / 332.250	- / 0.000	220 / 332.250
P-40	Total Gross/Weapon System Cost				9,783 / 9,380.055	185 / 264.327	187 / 307.486	220 / 332.250	- / 0.000	220 / 332.250

*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:
 FY20 continues procurement and support of AMRAAM for the Air Force and Navy in Lot 34. USAF funds will procure 220 AIM-120D missiles in support of warfighter requirements. Quantity and funding in FY20 is limited due to ramp rate of Form, Fit, Function (F3R) missile production; therefore, FY20 funding request was adjusted to align funding with maximum FY20 production ramp rates for the F3R production line.

The program will modify existing and build additional tooling and test equipment to support production of the AIM-120D. Continue to update the AMRAAM Technical Data Package to ensure a viable, producible design through the expected production life of the AMRAAM program. Maintain a robust supplier base capable of sustaining AMRAAM production for the life of the program, while continuing to develop second source suppliers for critical items. Resolve production Diminishing Manufacturing Sources/Material Shortages/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement and qualification activities to preserve future production capabilities and capacities. Continue to procure Telemetry (TM) Instrumentation Units for Weapon System Evaluation Program (WSEP).

Note: Procurement quantities can change based on negotiated options/pricing bands and available funding, in accordance with Title 10, US Code Section 2308 BUY-TO-BUDGET ACQUISITION.

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: MAMRA0 / AMRAAM	Item Number / Title [DODIC]: AMRAAM

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	9,783	185	187	220	-	220
Gross/Weapon System Cost (\$ in Millions)	9,380.055	264.327	307.486	332.250	0.000	332.250
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	9,380.055	264.327	307.486	332.250	0.000	332.250
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	9,380.055	264.327	307.486	332.250	0.000	332.250

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

Initial Spares (\$ in Millions)	84.700	2.067	2.023	0.529	-	0.529
Gross/Weapon System Unit Cost (\$ in Millions)	0.959	1.429	1.644	1.510	-	1.510

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																		
AIM-120 Missile All Up Round (AUR) ⁽¹⁾	1.033	1,598	1,650.788	1.033	185	191.161	1.171	187	218.888	1.201	220	264.196	-	-	-	1.201	220	264.196
AIM-120 Missile Captive Air Training Missile (CATM)	0.635	444	281.823	-	-	0.000	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
Warranty	-	-	70.328	-	-	0.000	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
Diminishing Manufacturing Sources/Material Shortages (DMS/MS)	-	-	395.895	-	-	34.899	-	-	30.042	-	-	23.400	-	-	-	-	-	23.400
Tooling and Test Equipment	-	-	99.525	-	-	0.000	-	-	14.651	-	-	4.143	-	-	-	-	-	4.143
Engineering Change Orders	-	-	2.755	-	-	0.975	-	-	1.469	-	-	1.500	-	-	-	-	-	1.500
Total Prior Years Costs	0.846	7,741	6,545.560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	9,046.674	-	-	227.035	-	-	265.050	-	-	293.239	-	-	-	-	-	293.239
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	9,046.674	-	-	227.035	-	-	265.050	-	-	293.239	-	-	-	-	-	293.239
Ancillary Equipment - Ancillary Equipment End Item Cost																		
Recurring Cost																		
Containers and Cables	-	-	7.872	-	-	1.250	-	-	1.250	-	-	1.275	-	-	-	-	-	1.275

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: MAMRA0 / AMRAAM	Item Number / Title [DODIC]: AMRAAM
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)
<i>Subtotal: Recurring Cost</i>	-	-	7.872	-	-	1.250	-	-	1.250	-	-	1.275	-	-	-	-	-	1.275
<i>Subtotal: Ancillary Equipment - Ancillary Equipment End Item Cost</i>	-	-	7.872	-	-	1.250	-	-	1.250	-	-	1.275	-	-	-	-	-	1.275
Support - Support End Item Cost																		
Production Test/Support	-	-	116.099	-	-	7.388	-	-	11.485	-	-	11.713	-	-	-	-	-	11.713
PMA Other Government Costs	-	-	12.130	-	-	1.768	-	-	1.823	-	-	1.859	-	-	-	-	-	1.859
PMA Contractor Services	-	-	18.040	-	-	2.503	-	-	2.522	-	-	2.573	-	-	-	-	-	2.573
Training Equipment	-	-	179.240	-	-	24.383	-	-	25.356	-	-	21.591	-	-	-	-	-	21.591
<i>Subtotal: Support - Support End Item Cost</i>	-	-	325.509	-	-	36.042	-	-	41.186	-	-	37.736	-	-	-	-	-	37.736
Gross/Weapon System Cost	0.959	9,783	9,380.055	1.429	185	264.327	1.644	187	307.486	1.510	220	332.250	-	-	0.000	1.510	220	332.250

Remarks:

- 1) The Total Prior Years Weapon System Cost Element, Prior Years column entries are composite numbers for all AIM-120 variants.
- 2) The Production/Test Support cost element includes costs such as engineering studies, technical support, network security, and modification of special test assets.
- 3) The Training Equipment cost element includes telemetry instrumentation units to support Weapon System Evaluation Program (WSEP) and modification of telemetry components to maintain compatibility with F-22, F-35 and test range infrastructure.

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

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: MAMRA0 / AMRAAM	Item Number / Title [DODIC]: AMRAAM
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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
AIM-120 Missile All Up Round (AUR) ^(t)		2015	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	Eglin AFB	Mar 2015	Apr 2017	223	0.982	Y		Jul 2013
AIM-120 Missile All Up Round (AUR) ^(t)		2016	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	Eglin AFB	Mar 2016	Oct 2018	281	0.940	Y		Jul 2013
AIM-120 Missile All Up Round (AUR) ^(t)		2017	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	Eglin AFB	Dec 2017	Oct 2019	256	1.000	Y		Mar 2016
AIM-120 Missile All Up Round (AUR) ^(t)		2018	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	Eglin AFB	Mar 2018	Jul 2020	185	1.033	Y		Mar 2017
AIM-120 Missile All Up Round (AUR) ^(t)		2019	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	Eglin AFB	Aug 2019	Apr 2021	187	1.171	Y		Mar 2018
AIM-120 Missile All Up Round (AUR) ^(t)		2020	Raytheon Missile Systems / Tucson, AZ	SS / FPIF	Eglin AFB	Aug 2020	Aug 2022	220	1.201	Y		Jul 2018

^(t) indicates the presence of a P-21

Remarks:

1) Unit Cost calculations for Air Force, Navy, and other requirements.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: MAMRA0 / AMRAAM	Item Number / Title [DODIC]: AMRAAM
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Cost Elements <i>(Units in Each)</i>					Fiscal Year 2015													Fiscal Year 2016													BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	Calendar Year 2015													Calendar Year 2016													
							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			
AIM-120 Missile All Up Round (AUR)																																	
Prior Years Deliveries: 838																																	
1	2015	AF ⁽¹⁾	223	0	223																							223					
1	2015	FMS ^(‡) (2)	334	0	334																							334					
1	2015	Total	557	0	557																							557					
1	2016	AF	281	0	281																							281					
1	2016	FMS ^(‡)	212	0	212																							212					
1	2016	NAVY ^(‡)	117	0	117																							117					
1	2016	Total	610	0	610																							610					
1	2017	AF	256	0	256																							256					
1	2017	FMS ^(‡)	306	0	306																							306					
1	2017	NAVY ^(‡)	144	0	144																							144					
1	2017	Total	706	0	706																							706					
1	2018	AF	185	0	185																							185					
1	2018	FMS ^(‡)	245	0	245																							245					
1	2018	NAVY ^(‡)	120	0	120																							120					
1	2018	Total	550	0	550																							550					
1	2019	AF	187	0	187																							187					
1	2019	FMS ^(‡)	210	0	210																							210					
1	2019	NAVY ^(‡)	141	0	141																							141					
1	2019	Total	538	0	538																							538					
1	2020	AF	220	0	220																							220					
1	2020	FMS ^(‡)	252	0	252																							252					
1	2020	NAVY ^(‡)	169	0	169																							169					
1	2020	Total	641	0	641																							641					

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: MAMRA0 / AMRAAM	Item Number / Title [DODIC]: AMRAAM
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Cost Elements <i>(Units in Each)</i>					Fiscal Year 2017													Fiscal Year 2018													BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017													Calendar Year 2018													
							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			
AIM-120 Missile All Up Round (AUR)																																	
Prior Years Deliveries: 838																																	
1	2015	AF ⁽¹⁾	223	0	223	-	-	-	-	-	-	45	-	-	-	-	-	89	-	-	-	-	-	-	89	-	-	-	-	-	0		
1	2015	FMS ^(‡) (2)	334	0	334	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	-	-	-	-	77	-	-	33	-	-	43		
1	2015	Total	557	0	557	-	-	-	-	-	-	226	-	-	-	-	-	89	-	-	-	-	-	-	166	-	-	33	-	-	43		
1	2016	AF	281	0	281	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	281			
1	2016	FMS ^(‡)	212	0	212	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	24	-	-	182		
1	2016	NAVY ^(‡)	117	0	117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	-	-	40	-	-	36		
1	2016	Total	610	0	610	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	-	-	64	-	-	499			
1	2017	AF	256	0	256																									256			
1	2017	FMS ^(‡)	306	0	306																									306			
1	2017	NAVY ^(‡)	144	0	144																									144			
1	2017	Total	706	0	706																									706			
1	2018	AF	185	0	185																									185			
1	2018	FMS ^(‡)	245	0	245																									245			
1	2018	NAVY ^(‡)	120	0	120																									120			
1	2018	Total	550	0	550																									550			
1	2019	AF	187	0	187																									187			
1	2019	FMS ^(‡)	210	0	210																									210			
1	2019	NAVY ^(‡)	141	0	141																									141			
1	2019	Total	538	0	538																									538			
1	2020	AF	220	0	220																									220			
1	2020	FMS ^(‡)	252	0	252																									252			
1	2020	NAVY ^(‡)	169	0	169																									169			
1	2020	Total	641	0	641																									641			
						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				

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** MAMRA0 / AMRAAM **Item Number / Title [DODIC]:** AMRAAM

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2019													Fiscal Year 2020													BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019													Calendar Year 2020													
							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			
AIM-120 Missile All Up Round (AUR)																																	
Prior Years Deliveries: 838																																	
1	2015	AF ⁽¹⁾	223	223	0	-																							0				
1	2015	FMS ^(‡) (2)	334	291	43	43																							0				
1	2015	Total	557	514	43	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
1	2016	AF	281	0	281	64	-	-	72	-	-	72	-	-	73														0				
1	2016	FMS ^(‡)	212	30	182	34	-	-	55	-	-	52	-	-	41														0				
1	2016	NAVY ^(‡)	117	81	36	-	-	-	36	-	-	-	-	-	-														0				
1	2016	Total	610	111	499	98	-	-	163	-	-	124	-	-	114	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
1	2017	AF	256	0	256	-	-	-	-	-	-	-	-	-	-														0				
1	2017	FMS ^(‡)	306	0	306	-	-	-	-	-	-	-	-	-	-														0				
1	2017	NAVY ^(‡)	144	0	144	-	-	-	-	-	-	-	-	-	-														0				
1	2017	Total	706	0	706	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
1	2018	AF	185	0	185	-	-	-	-	-	-	-	-	-	-														82				
1	2018	FMS ^(‡)	245	0	245	-	-	-	-	-	-	-	-	-	-														141				
1	2018	NAVY ^(‡)	120	0	120	-	-	-	-	-	-	-	-	-	-														69				
1	2018	Total	550	0	550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	292				
1	2019	AF	187	0	187																								187				
1	2019	FMS ^(‡)	210	0	210																								210				
1	2019	NAVY ^(‡)	141	0	141																								141				
1	2019	Total	538	0	538																								538				
1	2020	AF	220	0	220																								220				
1	2020	FMS ^(‡)	252	0	252																								252				
1	2020	NAVY ^(‡)	169	0	169																								169				
1	2020	Total	641	0	641																								641				

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: MAMRA0 / AMRAAM	Item Number / Title [DODIC]: AMRAAM
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2021														Fiscal Year 2022														BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021														Calendar Year 2022														
							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					
AIM-120 Missile All Up Round (AUR)																																			
Prior Years Deliveries: 838																																			
1	2015	AF ⁽¹⁾	223	223	0																								0						
1	2015	FMS ⁽²⁾	334	334	0																								0						
1	2015	Total	557	557	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
1	2016	AF	281	281	0																								0						
1	2016	FMS ⁽²⁾	212	212	0																								0						
1	2016	NAVY ⁽²⁾	117	117	0																								0						
1	2016	Total	610	610	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
1	2017	AF	256	256	0																								0						
1	2017	FMS ⁽²⁾	306	306	0																								0						
1	2017	NAVY ⁽²⁾	144	144	0																								0						
1	2017	Total	706	706	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
1	2018	AF	185	103	82	-	-	-	82																				0						
1	2018	FMS ⁽²⁾	245	104	141	-	-	-	141																				0						
1	2018	NAVY ⁽²⁾	120	51	69	-	-	-	69																				0						
1	2018	Total	550	258	292	-	-	-	292	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
1	2019	AF	187	0	187	-	-	-	-	-	-	48	-	-	48	-	-	46	-	-	45								0						
1	2019	FMS ⁽²⁾	210	0	210	-	-	-	-	-	-	52	-	-	52	-	-	53	-	-	53								0						
1	2019	NAVY ⁽²⁾	141	0	141	-	-	-	-	-	-	35	-	-	35	-	-	35	-	-	36								0						
1	2019	Total	538	0	538	-	-	-	-	-	-	135	-	-	135	-	-	134	-	-	134	-	-	-	-	-	-	-	0						
1	2020	AF	220	0	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	-	165						
1	2020	FMS ⁽²⁾	252	0	252	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	-	189						
1	2020	NAVY ⁽²⁾	169	0	169	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	-	126						
1	2020	Total	641	0	641	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161	-	480						
						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						

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: MAMRA0 / AMRAAM	Item Number / Title [DODIC]: AMRAAM
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2023													Fiscal Year 2024													BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023													Calendar Year 2024													
							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			
AIM-120 Missile All Up Round (AUR)																																	
Prior Years Deliveries: 838																																	
1	2015	AF ⁽¹⁾	223	223	0																											0	
1	2015	FMS ^(#) (2)	334	334	0																											0	
1	2015	Total	557	557	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
1	2016	AF	281	281	0																											0	
1	2016	FMS ^(#)	212	212	0																											0	
1	2016	NAVY ^(#)	117	117	0																											0	
1	2016	Total	610	610	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
1	2017	AF	256	256	0																											0	
1	2017	FMS ^(#)	306	306	0																											0	
1	2017	NAVY ^(#)	144	144	0																											0	
1	2017	Total	706	706	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
1	2018	AF	185	185	0																											0	
1	2018	FMS ^(#)	245	245	0																											0	
1	2018	NAVY ^(#)	120	120	0																											0	
1	2018	Total	550	550	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
1	2019	AF	187	187	0																											0	
1	2019	FMS ^(#)	210	210	0																											0	
1	2019	NAVY ^(#)	141	141	0																											0	
1	2019	Total	538	538	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
1	2020	AF	220	55	165	-	55	-	-	55	-	-	55																		0		
1	2020	FMS ^(#)	252	63	189	-	63	-	-	63	-	-	63																		0		
1	2020	NAVY ^(#)	169	43	126	-	43	-	-	43	-	-	40																		0		
1	2020	Total	641	161	480	-	161	-	-	161	-	-	158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
						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				

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: MAMRA0 / AMRAAM	Item Number / Title [DODIC]: AMRAAM
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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	Raytheon Missile Systems - Tucson, AZ	400 ⁽³⁾	400	960	6	11	24	35	0	0	0	0

(‡) 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).

Footnotes:

(1) Prior Year contracts with undelivered assets have all deliveries occurring before Oct 2017 loaded in the month of first delivery.

(2) Prior Year contracts with undelivered assets have all deliveries occurring before Oct 2017 loaded in the month of first delivery.

(3) MSR for 2020: AIM-120 MSR is 400 missiles per year, consisting of the sum of USAF, USN, and approved FMS procurement for the year with no less than 100 of a particular variant. MAX for 2020: Factory capacity enables production of 960 missiles. FY20 production capacity is constrained to 632 missiles, of which at least 242 are FMS missiles, due to ramp rate of Form, Fit, Function Refresh (F3R).

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** PRDTA2 / Predator Hellfire Missile

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0305219F

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>)	-	5,158	3,734	1,531	2,328	3,859	3,335	966	977	69	-	18,098
Gross/Weapon System Cost (<i>\$ in Millions</i>)	729.090	379.347	288.765	118.860	180.771	299.631	256.964	74.455	75.817	5.510	-	2,109.579
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	729.090	379.347	288.765	118.860	180.771	299.631	256.964	74.455	75.817	5.510	-	2,109.579
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	729.090	379.347	288.765	118.860	180.771	299.631	256.964	74.455	75.817	5.510	-	2,109.579

(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>)	-	0.069	0.070	0.070	0.070	0.070	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	0.074	0.077	0.078	0.078	0.078	0.077	0.077	0.078	0.080	-	0.117

Description:

FY2018 funding totals include \$344.480M appropriated for Overseas Contingency Operations.
 FY2019 funding totals include \$255.000M appropriated for Overseas Contingency Operations.

The Army is the Lead Service for the HELLFIRE Missile program with Air Force missiles being procured through the Army's Redstone Arsenal. HELLFIRE missiles (all variants) provide precision-kill capability and has become a key weapon in Overseas Contingency Operations. Laser HELLFIRE uses semi-active laser terminal guidance. The latest variant provides for point target precision strike and is effective against countermeasures. The HELLFIRE missiles are used by the MQ-9 Reaper aircraft.

HELLFIRE procurement funding supports the entire HELLFIRE system to include resolution of obsolescence, end-of-life buys, safety, insensitive munitions, reliability, weapon integration activities, test sets, engineering changes, modifications, facilitization, production ramp-up activities and production issues. Funding may be used to address Diminishing Manufacturing Sources (DMS) issues. HELLFIRE unit cost may vary based on procurement quantities of Lead Service, other Services and/or Foreign Military Sales (FMS) for HELLFIRE and JAGM. Prior to FY2008, HELLFIRE missiles were procured under the Predator PE 0305219F.

Funding for this exhibit contained in PE 0201109F.

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.

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.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** PRDTA2 / Predator Hellfire Missile

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0305219F

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 <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>
P-5	Predator Hellfire Missile	P-5a, P-21	A		- / 729.090	5,158 / 379.347	3,734 / 288.765	1,531 / 118.860	2,328 / 180.771	3,859 / 299.631
P-40	Total Gross/Weapon System Cost				- / 729.090	5,158 / 379.347	3,734 / 288.765	1,531 / 118.860	2,328 / 180.771	3,859 / 299.631

*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 procures AGM-114 HELLFIRE missiles, Telemetry Measurement (TM) kits, load training missiles, existing warhead improvements, height-of-burst (HOB) kits and production implementation for the HOB capability for R-model variants which incorporates a multi-purpose warhead, variable delay fuze, and increased lethality. Multiple variants (R-2, R9E etc.) of the HELLFIRE missile may be procured based upon operational requirements for various warheads and the enhanced weapon engagement zone. The HELLFIRE missiles are used for test, training, and operations.

FY2020 budget request will procure 3,859 missiles, to include 2,328 missiles using OCO funding, needed to replenish HELLFIRE inventory levels. Quantities are based on current estimated prices for purchase through the Army.

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: PRDTA2 / Predator Hellfire Missile	Item Number / Title [DODIC]: Predator Hellfire Missile

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	5,158	3,734	1,531	2,328	3,859
Gross/Weapon System Cost (\$ in Millions)	729.090	379.347	288.765	118.860	180.771	299.631
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	729.090	379.347	288.765	118.860	180.771	299.631
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	729.090	379.347	288.765	118.860	180.771	299.631

(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)	-	0.074	0.077	0.078	0.078	0.078

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)
Flyaway - Flyaway End Item Cost																		
Recurring Cost																		
AGM-114 - All-up-Rounds ^(†)	0.075	9,701	729.090	0.069	5,158	354.754	0.070	3,734	261.240	0.070	1,531	107.170	0.070	2,328	162.960	0.070	3,859	270.130
<i>Subtotal: Recurring Cost</i>	-	-	729.090	-	-	354.754	-	-	261.240	-	-	107.170	-	-	162.960	-	-	270.130
<i>Subtotal: Flyaway - Flyaway End Item Cost</i>	-	-	729.090	-	-	354.754	-	-	261.240	-	-	107.170	-	-	162.960	-	-	270.130
Hardware - Hardware End Item Cost																		
Recurring Cost																		
First Destination Shipping charges	-	-	-	-	-	1.700	-	-	1.800	-	-	1.900	-	-	-	-	-	1.900
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	1.700	-	-	1.800	-	-	1.900	-	-	-	-	-	1.900
<i>Subtotal: Hardware - Hardware End Item Cost</i>	-	-	-	-	-	1.700	-	-	1.800	-	-	1.900	-	-	-	-	-	1.900
Support - Support End Item Cost																		
Program Management Administration	-	-	-	-	-	12.587	-	-	14.144	-	-	5.384	-	-	9.796	-	-	15.180
Production Engineering Support	-	-	-	-	-	10.306	-	-	11.581	-	-	4.406	-	-	8.015	-	-	12.421
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	22.893	-	-	25.725	-	-	9.790	-	-	17.811	-	-	27.601
Gross/Weapon System Cost	-	-	729.090	0.074	5,158	379.347	0.077	3,734	288.765	0.078	1,531	118.860	0.078	2,328	180.771	0.078	3,859	299.631

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: PRDTA2 / Predator Hellfire Missile	Item Number / Title [DODIC]: Predator Hellfire Missile
ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:	
(†) indicates the presence of a P-5a		

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: PRDTA2 / Predator Hellfire Missile	Item Number / Title [DODIC]: Predator Hellfire Missile
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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
AGM-114 - All-up-Rounds ^(†)		2016	HELLFIRE Sys Limited Liability / Orlando FL	MIPR	Redstone Arsenal, AL	Feb 2017	Feb 2019	5,713	0.073	Y		Dec 2013
AGM-114 - All-up-Rounds ^(†)		2017	Lockheed Missile and Fire Ctrl / Orlando FL	MIPR	Redstone Arsenal, AL	Aug 2017	Sep 2019	1,131	0.070	Y		Dec 2013
AGM-114 - All-up-Rounds ^(†)		2018	Lockheed Missile and Fire Ctrl / Orlando FL	MIPR	Redstone Arsenal, AL	Sep 2018	Oct 2020	5,158	0.069	Y		Dec 2016
AGM-114 - All-up-Rounds ^(†)		2019	Lockheed Missile and Fire Ctrl / Orlando FL	MIPR	Redstone Arsenal, AL	Sep 2019	Oct 2021	3,734	0.070	Y		Dec 2016
AGM-114 - All-up-Rounds ^(†)		2020	Lockheed Missile and Fire Ctrl / Orlando FL	MIPR	Redstone Arsenal, AL	Sep 2020	Oct 2022	1,531	0.070	Y		Dec 2016
AGM-114 - All-up-Rounds ^(†)	✓	2020	Lockheed Missile and Fire Ctrl / Orlando FL	MIPR	Redstone Arsenal, AL	Sep 2020	Oct 2022	2,328	0.070	Y		Dec 2016

^(†) indicates the presence of a P-21

Remarks:

Army Redstone Arsenal awarded a Fixed Price Incentive Firm (FPIF) contract for FY15-FY17 all-up-round missile procurement in September 2015. The Unfinalized Contract Action (UCA) for FY15 and FY16 contracts finalized in February 2017. The FY17 contract was awarded in August 2017.

Army Redstone Arsenal awarded a FPIF contract for FY18-21 all-up-round missile procurement in September 2018.

FY16, FY17, and FY18 represent remaining undelivered quantities.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: PRDTA2 / Predator Hellfire Missile	Item Number / Title [DODIC]: Predator Hellfire Missile
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Cost Elements <i>(Units in Each)</i>					Fiscal Year 2017												Fiscal Year 2018												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 6	BAL D U E A S O F 1 O C T	Calendar Year 2017												Calendar Year 2018												
							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

AGM-114 - All-up-Rounds																															
Prior Years Deliveries: 2857																															
1	2016	AF		5,713	0	5,713																									5,713
2	2017	AF		1,131	0	1,131																									1,131
2	2018	AF		5,158	0	5,158																									5,158
2	2019	AF		3,734	0	3,734																									3,734
2	2020	AF		1,531	0	1,531																									1,531
2	2020	ARMY (*)		5,112	0	5,112																									5,112
2	2020	Total Base		6,643	0	6,643																									6,643
✓ 2	2020	AF		2,328	0	2,328																									2,328

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: PRDTA2 / Predator Hellfire Missile	Item Number / Title [DODIC]: Predator Hellfire Missile
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Cost Elements (Units in Each)					Fiscal Year 2019													Fiscal Year 2020													BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019													Calendar Year 2020													
							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			
AGM-114 - All-up-Rounds																																	
Prior Years Deliveries: 2857																																	
	1	2016	AF	5,713	0	5,713	-	-	-	-	476	476	476	476	476	476	476	476	476	476	476	476	476	476	476	476	476	476	476	0			
	2	2017	AF	1,131	0	1,131	-	-	-	-	-	-	-	-	-	-	-	94	94	94	94	94	94	94	94	94	94	94	94	0			
	2	2018	AF	5,158	0	5,158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,158			
	2	2019	AF	3,734	0	3,734																								3,734			
	2	2020	AF	1,531	0	1,531												A -	-	-	-	-	-	-	-	-	-	-	-	A -	1,531		
	2	2020	ARMY (*)	5,112	0	5,112																								A -	5,112		
	2	2020	Total Base	6,643	0	6,643																								-	6,643		
✓	2	2020	AF	2,328	0	2,328																								A -	2,328		
							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			

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** PRDTA2 / Predator Hellfire Missile **Item Number / Title [DODIC]:** Predator Hellfire Missile

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2021												Fiscal Year 2022												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021												Calendar Year 2022												
							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
AGM-114 - All-up-Rounds																															
Prior Years Deliveries: 2857																															
	1	2016	AF	5,713	5,713	0																							0		
	2	2017	AF	1,131	1,131	0																							0		
	2	2018	AF	5,158	0	5,158	429	429	430	430	430	430	430	430	430	430													0		
	2	2019	AF	3,734	0	3,734	-	-	-	-	-	-	-	-	-	-	311	311	311	311	311	311	311	311	311	311	312	312	0		
	2	2020	AF	1,531	0	1,531	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,531		
	2	2020	ARMY (*)	5,112	0	5,112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,112		
	2	2020	Total Base	6,643	0	6,643	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,643		
✓	2	2020	AF	2,328	0	2,328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,328		
							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	

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: PRDTA2 / Predator Hellfire Missile	Item Number / Title [DODIC]: Predator Hellfire Missile
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2023												Fiscal Year 2024												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEP T O 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024												
							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
AGM-114 - All-up-Rounds																															
Prior Years Deliveries: 2857																															
	1	2016	AF	5,713	5,713	0																								0	
	2	2017	AF	1,131	1,131	0																								0	
	2	2018	AF	5,158	5,158	0																								0	
	2	2019	AF	3,734	3,734	0																								0	
	2	2020	AF	1,531	0	1,531	127	127	127	127	127	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	0	
	2	2020	ARMY (+)	5,112	0	5,112	427	427	426	426	426	426	426	426	426	426	426	426	426	426	426	426	426	426	426	426	426	426	0		
	2	2020	Total Base	6,643	0	6,643	554	554	553	553	553	554	554	554	554	554	554	554	554	553	553									0	
✓	2	2020	AF	2,328	0	2,328	194	194	194	194	194	194	194	194	194	194	194	194	194	194	194	194	194	194	194	194	194	194	0		
							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	

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: PRDTA2 / Predator Hellfire Missile	Item Number / Title [DODIC]: Predator Hellfire Missile
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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	HELLFIRE Sys Limited Liability - Orlando FL				0	0	0	0	0	0	0	0	0
2	Lockheed Missile and Fire Ctrl - Orlando FL	3,600	6,000	11,000	5	0	0	0	0	5	12	25	37

Remarks:

Yearly Minimum Sustainment Rate (MSR) = 3,600 missiles.
 Yearly Economical Production Rate (1-8-5) = 6,000 missiles.
 Yearly Maximum Production Rate (MPR) = 11,000 missiles.

MSR and MPR consist of the sum of USAF, USN, Army, approved FMS, and Joint-Air-to-Ground Missile (JAGM) procurements for the year.

JAGM guidance section is integrated with the HELLFIRE II propulsion, warhead, and control section, and shares the HELLFIRE production capacity. Reference BP20 JAGM00 for JAGM procurement.

FMS orders are procured through the Army and are funded through a separate Line Item therefore delivery schedule may exceed 12 months.

(†) 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 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).

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** SDB000 / Small Diameter Bomb

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0207327F

Line Item MDAP/MAIS Code: 439

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>)	20,807	7,471	5,744	7,078	-	7,078	1,179	2,390	2,412	2,435	-	49,516
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,160.481	384.250	209.358	275.438	0.000	275.438	45.536	89.893	89.919	91.537	0.000	2,346.412
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,160.481	384.250	209.358	275.438	0.000	275.438	45.536	89.893	89.919	91.537	0.000	2,346.412
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,160.481	384.250	209.358	275.438	0.000	275.438	45.536	89.893	89.919	91.537	0.000	2,346.412

(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>)	0.053	0.045	0.036	0.038	-	0.038	0.036	0.036	0.036	0.036	-	0.045
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	0.056	0.051	0.036	0.039	-	0.039	0.039	0.038	0.037	0.038	-	0.047

Description:

FY2018 funding totals include \$169.160M for Base and \$127.220M appropriated for Overseas Contingency Operations for SDB I.

FY2019 funding totals include \$68.634M for Base and \$140.724M appropriated for Overseas Contingency Operations for SDB I.

GBU-39/B: Small Diameter Bomb Increment I (SDB I) is an Air Force ACAT II program providing increased kills per sortie on current and future aircraft platforms. SDB I addresses the following specific warfighter requirements: multiple kills per pass; multiple ordnance carriage; adverse weather, precision munitions capability; capability against fixed and stationary targets; reduced munitions footprint; increased weapons effectiveness; minimized potential for collateral damage; reduced susceptibility of munitions to countermeasures; and standoff or Close Air Support (CAS) operational capability. Threshold aircraft is the F-15E. Objective aircraft include: F-22A, F-16C/D Block 30/40/50, F-35A, B-1, A-10, B-52, B-21, MQ-9, and AC-130W/J. SDB I completed IOT&E in Jun 2006 and commenced Full Rate Production (FRP) in Dec 2006.

GBU-39A/B: Small Diameter Bomb I Focused Lethality Munition (FLM) is a low collateral damage variant of SDB I. FLM has a carbon fiber warhead case which disintegrates upon fill detonation, minimizing fragmentation effects to personnel and property.

Integrated platforms include: F-15E, F-22A, AC-130W/J, and F-16C/D Block 30/40/50.

SDB I weapons and weapon containers are procured together as a system. Individual containers can be procured separately as requirements dictate. SDB I procurement supports current combat operations and replenishment of SDB I weapons and its variants used in these operations. Funding may be used to resolve production Diminishing Manufacturing Sources (DMS)/Material Shortage (MS)/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement, and qualification (including flight/ground test activities) to preserve future production capabilities and capacities.

GBU-53/B: Small Diameter Bomb Increment II (SDB II) StormBreaker is a joint interest Air Force and Department of Navy (DoN) ACAT IC, with the Air Force as the lead service. SDB I and SDB II historically shared the same P-1 Line Item Number (SDB000). Starting in FY19, new P-1 Line Item (SDB002) was created to provide transparency for SDB II. Quantities and Obligation Authority for SDB000 include SDB II numbers for FY18 and earlier and will continue to show SDB II undelivered assets for Lots 2-4 on the P-21. Reference BP20 SDB002 for the SDB II FY19 and out-years.

Note: ID Code A is applicable to SDB I only.

Funding for this exhibit contained in PE 0207327F.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical		P-1 Line Item Number / Title: SDB000 / Small Diameter Bomb
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0207327F
Line Item MDAP/MAIS Code: 439		
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.		

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** SDB000 / Small Diameter Bomb

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0207327F

Line Item MDAP/MAIS Code: 439

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	Small Diameter Bomb	P-5a, P-21	A		20,807 / 1,160.481	7,471 / 384.250	5,744 / 209.358	7,078 / 275.438	- / 0.000	7,078 / 275.438
P-40	Total Gross/Weapon System Cost				20,807 / 1,160.481	7,471 / 384.250	5,744 / 209.358	7,078 / 275.438	- / 0.000	7,078 / 275.438

*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 budget request includes funding for SDB I weapons. This funding will procure 7,078 weapons including 200 FLM needed to increase SDB I inventory levels.

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.

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: SDB000 / Small Diameter Bomb	Item Number / Title [DODIC]: Small Diameter Bomb

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	20,807	7,471	5,744	7,078	-	7,078
Gross/Weapon System Cost (\$ in Millions)	1,160.481	384.250	209.358	275.438	0.000	275.438
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,160.481	384.250	209.358	275.438	0.000	275.438
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,160.481	384.250	209.358	275.438	0.000	275.438

(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)	0.056	0.051	0.036	0.039	-	0.039

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)
Flyaway - Flyaway End Item Cost																		
Recurring Cost																		
SDB Increment II All Up Round Weapon ^(†)	0.185	769	142.303	0.102	507	51.635	-	-	-	-	-	-	-	-	-	-	-	-
Weapon Containers	-	-	2.909	-	-	1.009	-	-	-	-	-	-	-	-	-	-	-	-
SDB Increment I ^(†)	0.048	20,038	959.000	0.035	6,464	224.540	0.036	5,744	206.648	0.036	6,878	247.638	-	-	0.000	0.036	6,878	247.638
Focused Lethality Munition ^(†)	-	-	-	0.100	500	50.000	-	-	-	0.100	200	20.000	-	-	-	0.100	200	20.000
SDB Increment II Test Vehicle	-	-	-	-	-	9.154	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	1,104.212	-	-	336.338	-	-	206.648	-	-	267.638	-	-	0.000	-	-	267.638
<i>Subtotal: Flyaway - Flyaway End Item Cost</i>	-	-	1,104.212	-	-	336.338	-	-	206.648	-	-	267.638	-	-	0.000	-	-	267.638

Support - Support End Item Cost																		
Training Equipment	-	-	2.658	-	-	0.262	-	-	-	-	-	-	-	-	-	-	-	-
Operational Flight Program Updates & Test	-	-	18.450	-	-	2.800	-	-	-	-	-	0.780	-	-	-	-	-	0.780
Logistics Support	-	-	0.250	-	-	0.194	-	-	0.060	-	-	0.060	-	-	-	-	-	0.060
Production Testing	-	-	28.113	-	-	4.709	-	-	0.640	-	-	1.000	-	-	-	-	-	1.000
PMA Contractor Services	-	-	5.095	-	-	2.079	-	-	1.300	-	-	1.300	-	-	-	-	-	1.300
PMA Other Government Costs	-	-	1.703	-	-	1.318	-	-	0.360	-	-	0.360	-	-	-	-	-	0.360
Obsolescence Contracts	-	-	-	-	-	36.550	-	-	0.350	-	-	4.300	-	-	-	-	-	4.300

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Exhibit P-5, Cost Analysis: PB 2020 Air Force												Date: February 2019					
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2						P-1 Line Item Number / Title: SDB000 / Small Diameter Bomb						Item Number / Title [DODIC]: Small Diameter Bomb					
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)
<i>Subtotal: Support - Support End Item Cost</i>	-	-	56.269	-	-	47.912	-	-	2.710	-	-	7.800	-	-	-	-	-	7.800
Gross/Weapon System Cost	0.056	20,807	1,160.481	0.051	7,471	384.250	0.036	5,744	209.358	0.039	7,078	275.438	-	-	0.000	0.039	7,078	275.438

Remarks:

FY2020 Base funding procures SDB I weapons. FY2020 Support Cost increase for obsolescence management.

PMA Contractor Services: EPASS contract support

PMA Other Government Costs: Travel, GPC and Central Support

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Air Force								Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2			P-1 Line Item Number / Title: SDB000 / Small Diameter Bomb					Item Number / Title [DODIC]: Small Diameter 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
SDB Increment II All Up Round Weapon ^(†)		2016	Raytheon / Tucson AZ	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Sep 2016	Nov 2017	250	0.180	Y		Oct 2009
SDB Increment II All Up Round Weapon ^(†)		2017	Raytheon / Tucson AZ	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Jan 2017	Sep 2018	375	0.203	Y		Oct 2009
SDB Increment II All Up Round Weapon ^(†)		2018	Raytheon / Tucson AZ	SS / FFP	AFLCMC/PK Eglin AFB, FL	Jan 2018	Sep 2019	507	0.102	Y		Oct 2009
SDB Increment I ^(†)		2016	Boeing / St Louis MO	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Sep 2016	Aug 2017	3,244	0.040	Y		Jan 2016
SDB Increment I ^(†)		2017	Boeing / St Louis MO	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Dec 2017	Sep 2018	4,195	0.036	Y		Jan 2017
SDB Increment I ^(†)		2018	Boeing / St Louis MO	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Aug 2018	Sep 2019	6,464	0.035	Y		Jan 2018
SDB Increment I ^(†)		2019	Boeing / St Louis MO	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Aug 2019	Sep 2020	5,744	0.036	Y		Jul 2018
SDB Increment I ^(†)		2020	Boeing / St Louis MO	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Aug 2020	Sep 2021	6,878	0.036	Y		Jan 2020
Focused Lethality Munition ^(†)		2018	Boeing / St Louis MO	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Aug 2019	Sep 2020	500	0.100	Y		Jul 2018
Focused Lethality Munition ^(†)		2020	Boeing / St Louis MO	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Aug 2020	Sep 2021	200	0.100	Y		Jan 2020

^(†) indicates the presence of a P-21

Remarks:

- ID Code A is applicable only to SDB I.
- SDB I replenishment production began in FY15. Lot 11 was awarded in November 2015 for 299 weapons. Lot 12 Unfinalized Contract Action (UCA) was awarded September 2016 and Finalized in December 2017 for 3,244 weapons. Lot 13 was awarded in December 2017 for 7,448 weapons.
- SDB I FY18 funds were obligated on the Lot 14 contract and the Focused Lethality Munition (FLM) UCA, both awarded in August 2018. Remaining FLM will be procured in Lot 15.
- SDB II Lots 1-5 are options on the current EMD contract with Raytheon Missile System, Tucson, AZ, which were competitively awarded in August 2010. SDB II specifications for Lot 1-5 are defined in the EMD contract.
- SDB II Lots 4-5 (FY2018-FY2019) are Firm Fixed Price contracts.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: SDB000 / Small Diameter Bomb	Item Number / Title [DODIC]: Small Diameter Bomb
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Cost Elements <i>(Units in Each)</i>					Fiscal Year 2016													Fiscal Year 2017													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 5	BAL D U E A S O F 1 O C T	Calendar Year 2016													Calendar Year 2017													
							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			
SDB Increment II All Up Round Weapon																																	
Prior Years Deliveries: 144																																	
	1	2016	AF	250	0	250																								250			
	1	2017	AF	375	0	375																								375			
	1	2018	AF	507	0	507																								507			
	1	2018	NAVY (‡)	90	0	90																								90			
	1	2018	Total	597	0	597																								597			
SDB Increment I																																	
Prior Years Deliveries: 12599																																	
	2	2016	AF (1)	3,244	0	3,244																								2,704			
	2	2016	FMS (‡) (2)	1,756	0	1,756																								1,464			
	2	2016	Total	5,000	0	5,000																								4,168			
	2	2017	AF	4,195	0	4,195																								4,195			
	2	2017	FMS (‡)	552	0	552																								552			
	2	2017	Total	4,747	0	4,747																								4,747			
	2	2018	AF	6,464	0	6,464																								6,464			
	2	2018	FMS (‡)	280	0	280																								280			
	2	2018	Total	6,744	0	6,744																								6,744			
	2	2019	AF	5,744	0	5,744																								5,744			
	2	2019	FMS (‡)	1,818	0	1,818																								1,818			
	2	2019	Total	7,562	0	7,562																								7,562			
	2	2020	AF	6,878	0	6,878																								6,878			
	2	2020	FMS (‡)	922	0	922																								922			
	2	2020	Total	7,800	0	7,800																								7,800			
Focused Lethality Munition																																	
	3	2018	AF	500	0	500																								500			
	3	2020	AF	200	0	200																								200			
							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			

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Exhibit P-21, Production Schedule: PB 2020 Air Force																						Date: February 2019										
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2										P-1 Line Item Number / Title: SDB000 / Small Diameter Bomb										Item Number / Title [DODIC]: Small Diameter Bomb												
Cost Elements (Units in Each)					Fiscal Year 2018										Fiscal Year 2019										B A L A N C E							
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018										Calendar Year 2019															
							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	
SDB Increment II All Up Round Weapon																																
Prior Years Deliveries: 144																																
1	2016	AF		250	0	250	-	18	18	19	21	22	22	21	22	22	21	22	22											0		
1	2017	AF		375	0	375	-	-	-	-	-	-	-	-	-	-	-	31	31	31	31	31	31	31	31	31	31	31	32	32	32	0
1	2018	AF		507	0	507				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	465	
1	2018	NAVY (‡)		90	0	90				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	
1	2018	Total		597	0	597				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	555	
SDB Increment I																																
Prior Years Deliveries: 12599																																
2	2016	AF (1)		3,244	540	2,704	270	270	270	270	270	270	270	270	270	270	270	274														0
2	2016	FMS (‡)(2)		1,756	292	1,464	146	146	146	146	146	146	147	147	147	147																0
2	2016	Total		5,000	832	4,168	416	416	416	416	416	416	417	417	417	421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
2	2017	AF		4,195	0	4,195				A -	-	-	-	-	-	-	-	350	350	350	350	350	350	350	350	350	350	350	345		0	
2	2017	FMS (‡)		552	0	552				A -	-	-	-	-	-	-	-	46	46	46	46	46	46	46	46	46	46	46	46		0	
2	2017	Total		4,747	0	4,747				-	-	-	-	-	-	-	-	396	396	396	396	396	396	396	396	396	396	391	-	0		
2	2018	AF		6,464	0	6,464												A -	-	-	-	-	-	-	-	-	-	-	-	538	5,926	
2	2018	FMS (‡)		280	0	280												A -	-	-	-	-	-	-	-	-	-	-	-	23	257	
2	2018	Total		6,744	0	6,744												-	-	-	-	-	-	-	-	-	-	-	-	561	6,183	
2	2019	AF		5,744	0	5,744																									5,744	
2	2019	FMS (‡)		1,818	0	1,818																									1,818	
2	2019	Total		7,562	0	7,562																									7,562	
2	2020	AF		6,878	0	6,878																									6,878	
2	2020	FMS (‡)		922	0	922																									922	
2	2020	Total		7,800	0	7,800																									7,800	
Focused Lethality Munition																																
3	2018	AF		500	0	500																									500	
3	2020	AF		200	0	200																									200	
							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		

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** SDB000 / Small Diameter Bomb **Item Number / Title [DODIC]:** Small Diameter Bomb

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			
SDB Increment II All Up Round Weapon																																	
Prior Years Deliveries: 144																																	
1	2016	AF		250	250	0																											0
1	2017	AF		375	375	0																											0
1	2018	AF		507	42	465	42	42	42	42	42	42	42	43	43	43																	0
1	2018	NAVY (‡)		90	0	90	-	-	-	-	-	-	-	90	-	-																	0
1	2018	Total		597	42	555	42	42	42	42	42	42	42	133	43	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
SDB Increment I																																	
Prior Years Deliveries: 12599																																	
2	2016	AF (1)		3,244	3,244	0																										0	
2	2016	FMS (‡)(2)		1,756	1,756	0																										0	
2	2016	Total		5,000	5,000	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
2	2017	AF		4,195	4,195	0																										0	
2	2017	FMS (‡)		552	552	0																										0	
2	2017	Total		4,747	4,747	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
2	2018	AF		6,464	538	5,926	538	538	538	538	538	538	538	538	538	546																0	
2	2018	FMS (‡)		280	23	257	23	23	23	23	23	23	23	24	24	24																0	
2	2018	Total		6,744	561	6,183	561	561	561	561	561	561	561	562	562	570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
2	2019	AF		5,744	0	5,744	-	-	-	-	-	-	-	-	-	-	479	479	479	479	479	479	479	479	479	479	479	479	475			0	
2	2019	FMS (‡)		1,818	0	1,818	-	-	-	-	-	-	-	-	-	-	154	154	154	153	153	150	150	150	150	150	150	150	150			0	
2	2019	Total		7,562	0	7,562	-	-	-	-	-	-	-	-	-	633	633	633	632	632	629	629	629	629	629	629	625	-	-	0			
2	2020	AF		6,878	0	6,878																									573	6,305	
2	2020	FMS (‡)		922	0	922																									76	846	
2	2020	Total		7,800	0	7,800																								649	7,151		
Focused Lethality Munition																																	
3	2018	AF		500	0	500	-	-	-	-	-	-	-	-	-	-	42	42	42	42	42	42	42	42	42	42	42	38			0		
3	2020	AF		200	0	200																									17	183	
							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			

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2 **P-1 Line Item Number / Title:** SDB000 / Small Diameter Bomb **Item Number / Title [DODIC]:** Small Diameter Bomb

Cost Elements <i>(Units in Each)</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					
SDB Increment II All Up Round Weapon																																			
Prior Years Deliveries: 144																																			
1	2016	AF		250	250	0																											0		
1	2017	AF		375	375	0																											0		
1	2018	AF		507	507	0																											0		
1	2018	NAVY (‡)		90	90	0																											0		
1	2018	Total		597	597	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
SDB Increment I																																			
Prior Years Deliveries: 12599																																			
2	2016	AF (1)		3,244	3,244	0																										0			
2	2016	FMS (‡)(2)		1,756	1,756	0																										0			
2	2016	Total		5,000	5,000	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
2	2017	AF		4,195	4,195	0																										0			
2	2017	FMS (‡)		552	552	0																										0			
2	2017	Total		4,747	4,747	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
2	2018	AF		6,464	6,464	0																										0			
2	2018	FMS (‡)		280	280	0																										0			
2	2018	Total		6,744	6,744	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
2	2019	AF		5,744	5,744	0																										0			
2	2019	FMS (‡)		1,818	1,818	0																										0			
2	2019	Total		7,562	7,562	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
2	2020	AF		6,878	573	6,305	573	573	573	573	573	573	573	573	573	573															0				
2	2020	FMS (‡)		922	76	846	76	77	77	77	77	77	77	77	77	77															0				
2	2020	Total		7,800	649	7,151	649	650	650	650	650	650	650	650	650	652	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
Focused Lethality Munition																																			
3	2018	AF		500	500	0																									0				
3	2020	AF		200	17	183	17	17	17	17	17	17	17	17	17	13															0				
							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					

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Exhibit P-21, Production Schedule: PB 2020 Air Force	Date: February 2019
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Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: SDB000 / Small Diameter Bomb	Item Number / Title [DODIC]: Small Diameter Bomb
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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	Raytheon - Tucson AZ	840	1,050	1,260	0	0	0	0	0	0	4	20	24
2	Boeing - St Louis MO	1,000	5,000	8,000	0	0	0	0	0	0	11	13	24
3	Boeing - St Louis MO	100	400	600	0	0	0	0	0	0	11	13	24

Remarks:
SDB I - As a result of contractor facilitization, SDB I maximum production capacity increased from 5,000 to 8,000 weapons (includes USAF and FMS quantities).
SDB II - Yearly production may be below the Minimum Sustainment Rate (MSR) due to the MSR being applicable to Lot 4 and out and the programs first three LRIP quantity buys maybe below MSR.
(‡) 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.
(‡) 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).

Footnotes:
⁽¹⁾ Prior Year contracts with undelivered assets have all deliveries occurring before Oct 2017 loaded in the month of first delivery.
⁽²⁾ Prior Year contracts with undelivered assets have all deliveries occurring before Oct 2017 loaded in the month of first delivery.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** SDB002 / SMALL DIAMETER BOMB II

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0207327F **Other Related Program Elements:** 0207327F

Line Item MDAP/MAIS Code: 439

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>)	-	-	510	1,175	-	1,175	2,160	1,968	2,082	1,315	1,514	10,724
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	0.000	100.861	212.434	-	212.434	333.546	308.116	321.972	219.598	267.467	1,763.994
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	0.000	100.861	212.434	-	212.434	333.546	308.116	321.972	219.598	267.467	1,763.994
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	0.000	100.861	212.434	-	212.434	333.546	308.116	321.972	219.598	267.467	1,763.994

(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>)	-	-	0.140	0.158	-	0.158	0.139	0.151	0.145	0.161	0.163	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	0.198	0.181	-	0.181	0.154	0.157	0.155	0.167	0.177	0.164

Description:

1. GBU-53/B: Small Diameter Bomb Increment II (SDB II) StormBreaker is a joint interest United States Air Force (USAF) and Department of Navy (DoN) ACAT IC program, with the USAF as the lead service. SDB II addresses the following war-fighter requirements: attack moving and stationary targets, adverse weather operations, multiple kills per pass, multiple ordinance carriage, precision munitions capability, reduced munitions footprint, increased weapons effectiveness, minimized potential for collateral damage, reduced susceptibility of munitions to countermeasures and provides a network enabled weapon capability via Link-16 and Ultra High Frequency (UHF) weapon data link. The threshold aircraft for the USAF is the F-15E, and the threshold aircraft for the DoN are the F-35B and F-35C. Objective aircraft include the F-22, F-16, F-35A, B-2, A-10, MQ-9, B-1, B-52, AC-130 and the F/A-18E/F. SDB II is compatible with the Bomb Rack Unit-61 (BRU-61) miniature munitions carriage, Type II carriage systems, the CNU-660/E carriage system, the Common Munitions BIT/Reprogramming Equipment (CMBRE), and the Joint Mission Planning System (JMPS). SDB II will develop and field a single weapon storage container (USAF) and a dual weapon storage container (DoN). SDB II is a key component of the Air Force Global Strike Task Force CONOPs.

1a. SDB II completed a competitive Risk Reduction in October 2009 and entered Milestone B Engineering and Manufacturing Development (EMD) in August 2010. A Fixed Price Incentive Firm EMD contract with five options for annual (FY 2015-FY 2019) Low Rate Initial Production (LRIP) lots was awarded in August 2010. SDB II received Milestone C approval to enter LRIP in June 2015 and completed an Acquisition Program Baseline update. Contract options for LRIP Lots 1-5 have been exercised. Developmental Testing and Evaluation (DT&E), including Guided Test Vehicles (GTV), Live Fire (LF) test missions, and a 28-shot Government Confidence Test (GCT) program was completed in May 2018. Initial Operational Test and Evaluation (IOT&E) started June 2018 and will complete May 2019. Initial Operational Capability (IOC) for the F-15E is scheduled for FY 2019. IOC on the DoN's F-35B and F-35C is scheduled for FY 2021 and FY 2022, respectively; and is based on the F-35 B/C hardware and software modification schedule and completion IOT&E. DoN's first production lot (Lot 4) supports F/A-18E/F IOC.

1b. Total planned SDB II procurement is 17,000 weapons; 12,000 for the USAF and 5,000 for the DoN. SDB II total procurement costs in this document only include 10,724 USAF weapons, weapon containers, trainers, reliability captive/test vehicles, tactical to guided test vehicle conversions for Air Combat Command's Weapon System Evaluation Program (WSEP), and SDB II product support. The remaining 1,276 USAF weapons are included in BP20 SDB000. Funds may also be used for cost reduction activities and to resolve production diminishing manufacturing source and material shortage (DMSMS) issues through studies, bridge buys, life-of-type buys, supplier/parts replacement and qualification activities to preserve future production capabilities and capacities.

Funding for this exhibit contained in PE 0207327F.

Reference BP20 SDB000 for SDB II FY18 and prior years.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical		P-1 Line Item Number / Title: SDB002 / SMALL DIAMETER BOMB II
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0207327F	Other Related Program Elements: 0207327F
Line Item MDAP/MAIS Code: 439		

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.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 2: Tactical **P-1 Line Item Number / Title:** SDB002 / SMALL DIAMETER BOMB II

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0207327F **Other Related Program Elements:** 0207327F

Line Item MDAP/MAIS Code: 439

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	SMALL DIAMETER BOMB II	P-5a, P-21	B		- / -	- / 0.000	510 / 100.861	1,175 / 212.434	- / -	1,175 / 212.434
P-40	Total Gross/Weapon System Cost				- / -	- / 0.000	510 / 100.861	1,175 / 212.434	- / -	1,175 / 212.434

*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 FY 2020 budget request includes funding for SDB II weapons, weapon containers, training equipment required for weapon handling and maintenance, software maintenance, tactical to guided test vehicle conversions for WSEP, test assets and support for reliability testing, product support, and required DMSMS activities. Training equipment includes Weapon Load Crew Trainers (WLCT) and Conventional Maintenance Munitions Trainers (CMMT). FY 2020 funding supports the sole source Lot 6 production contract which includes an option for Lot 7 weapons. The Lot 6 contract and Lot 7 option are inclusive of both USAF and DoN production quantities. Quantities listed in exhibits are USAF only.

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.

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: SDB002 / SMALL DIAMETER BOMB II	Item Number / Title [DODIC]: SMALL DIAMETER BOMB II

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	-	-	510	1,175	-	1,175
Gross/Weapon System Cost (\$ in Millions)	-	0.000	100.861	212.434	-	212.434
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	0.000	100.861	212.434	-	212.434
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	0.000	100.861	212.434	-	212.434

(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)	-	-	0.198	0.181	-	0.181

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)
Flyaway - Small Diameter Bomb II Cost																		
Recurring Cost																		
SDB Increment II All Up Round Weapon ^(†)	-	-	-	-	-	0.000	0.119	510	60.708	0.150	1,175	176.056	-	-	-	0.150	1,175	176.056
Weapon Containers	-	-	-	-	-	-	-	-	1.784	-	-	3.665	-	-	-	-	-	3.665
Test Vehicle	-	-	-	-	-	-	-	-	9.012	-	-	6.509	-	-	-	-	-	6.509
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	0.000	-	-	71.504	-	-	186.230	-	-	-	-	-	186.230
<i>Subtotal: Flyaway - Small Diameter Bomb II Cost</i>	-	-	-	-	-	0.000	-	-	71.504	-	-	186.230	-	-	-	-	-	186.230
Support - Small Diameter Bomb II Cost																		
Training Equipment	-	-	-	-	-	-	-	-	0.089	-	-	0.000	-	-	-	-	-	0.000
Operational Flight Program Updates & Test	-	-	-	-	-	-	-	-	5.306	-	-	5.227	-	-	-	-	-	5.227
Production Testing	-	-	-	-	-	-	-	-	6.400	-	-	3.669	-	-	-	-	-	3.669
PMA Contractor Services	-	-	-	-	-	-	-	-	3.909	-	-	4.168	-	-	-	-	-	4.168
PMA Other Government Costs	-	-	-	-	-	-	-	-	0.853	-	-	0.923	-	-	-	-	-	0.923
Product Support	-	-	-	-	-	-	-	-	12.800	-	-	9.116	-	-	-	-	-	9.116
Tooling and Test Equipment	-	-	-	-	-	-	-	-	-	-	-	3.101	-	-	-	-	-	3.101
<i>Subtotal: Support - Small Diameter Bomb II Cost</i>	-	-	-	-	-	-	-	-	29.357	-	-	26.204	-	-	-	-	-	26.204
Gross/Weapon System Cost	-	-	-	-	-	0.000	0.198	510	100.861	0.181	1,175	212.434	-	-	-	0.181	1,175	212.434

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Exhibit P-5, Cost Analysis: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: SDB002 / SMALL DIAMETER BOMB II	Item Number / Title [DODIC]: SMALL DIAMETER BOMB II
ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:	
Remarks: PMA Other Government Costs: Travel, GPC, and Central Support Product Support: DMSMS activities, Interim Contractor Support (Raytheon), Encryption Chips, and Shipping (t) indicates the presence of a P-5a		

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: SDB002 / SMALL DIAMETER BOMB II	Item Number / Title [DODIC]: SMALL DIAMETER BOMB II
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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
SDB Increment II All Up Round Weapon ^(†)		2019	Raytheon / Tucson AZ	SS / FFP	AFLCMC/PK Eglin AFB, FL	Dec 2018	Sep 2020	510	0.119	N	Aug 2018	Oct 2009
SDB Increment II All Up Round Weapon ^(†)		2020	Raytheon / Tucson AZ	SS / FPIF	AFLCMC/PK Eglin AFB, FL	Jan 2020	Sep 2021	1,175	0.150	N	Aug 2019	Oct 2018

^(†) indicates the presence of a P-21

Remarks:

1. SDB II Lots 1-5 are options on the current EMD contract with Raytheon Missile Systems, Tucson, AZ, which was competitively awarded in August 2010. SDB II specifications for Lot 1-5 are defined in the EMD contract.
2. SDB II Lots 4-5 (FY 2018-FY 2019) are Firm Fixed Price contracts.
3. SDB II Lots 6-7 (FY 2020-FY 2021) will be negotiated as Fixed Price Incentive Firm contracts.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: SDB002 / SMALL DIAMETER BOMB II	Item Number / Title [DODIC]: SMALL DIAMETER BOMB II
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2019													Fiscal Year 2020													B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019													Calendar Year 2020													
							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			
SDB Increment II All Up Round Weapon																																	
	1	2019	AF	510	0	510				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	467			
	1	2019	NAVY ^(*)	750	0	750				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	687			
	1	2019	Total	1,260	0	1,260				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	1,154				
	1	2020	AF	1,175	0	1,175																							1,175				
	1	2020	NAVY ^(*)	750	0	750																							750				
	1	2020	Total	1,925	0	1,925																							1,925				
							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			

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: SDB002 / SMALL DIAMETER BOMB II	Item Number / Title [DODIC]: SMALL DIAMETER BOMB II
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Cost Elements <i>(Units in Each)</i>					Fiscal Year 2021													Fiscal Year 2022													BALANCE		
O C O #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021													Calendar Year 2022													
							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			
SDB Increment II All Up Round Weapon																																	
1	2019	AF		510	43	467	43	43	43	43	43	43	43	43	43	43													0				
1	2019	NAVY (+)		750	63	687	63	63	63	63	63	63	63	63	63	63	57												0				
1	2019	Total		1,260	106	1,154	106	106	106	106	106	106	106	106	106	94	-	-	-	-	-	-	-	-	-	-	-	-	0				
1	2020	AF		1,175	0	1,175	-	-	-	-	-	-	-	-	-	-	98	98	98	98	98	98	98	98	98	98	98	97	0				
1	2020	NAVY (+)		750	0	750	-	-	-	-	-	-	-	-	-	-	63	63	63	63	63	63	63	63	63	63	63	57	0				
1	2020	Total		1,925	0	1,925	-	-	-	-	-	-	-	-	-	-	161	161	161	161	161	161	161	161	161	161	161	154	0				
							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			

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Exhibit P-21, Production Schedule: PB 2020 Air Force	Date: February 2019
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Appropriation / Budget Activity / Budget Sub Activity: 3020F / 02 / 2	P-1 Line Item Number / Title: SDB002 / SMALL DIAMETER BOMB II	Item Number / Title [DODIC]: SMALL DIAMETER BOMB II
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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	Raytheon - Tucson AZ	1,346	1,925	2,119	0	0	0	0	0	0	4	20	24

Remarks:
SDB II - Annual production may be below the Minimum Sustainment Rate (MSR) due to the MSR being applicable to Lot 5 and out and the programs first four LRIP quantity buys may be below MSR.

(†) 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).

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

Appropriation / Budget Activity / Budget Sub Activity:
3020F: Missile Procurement, Air Force / BA 02: Other Missiles / BSA 5: Industrial Facilities

P-1 Line Item Number / Title:
000042 / Industr'l Preparedns/Pol Prevention

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>)	-	0.926	0.787	0.801	-	0.801	0.815	0.832	0.848	0.864	-	5.873
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	0.926	0.787	0.801	-	0.801	0.815	0.832	0.848	0.864	-	5.873
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	0.926	0.787	0.801	-	0.801	0.815	0.832	0.848	0.864	-	5.873

(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:

The Air Force Industrial Preparedness program element combines the resources of several appropriations (Aircraft Procurement, Missile Procurement, and Operation and Maintenance) to create a comprehensive program that aids in ensuring the defense industry can supply reliable, safe, affordable systems to operational commanders.

The Missile Procurement part of Industrial Preparedness supports the management and upkeep of Air Force Plant 44, Tucson, AZ. This includes capital type rehabilitation (MPC 3000) projects for repair and expansion, major capital rehabilitation, construction, demolition, equipment, property appraisals and energy conservation; and environmental compliance (MPC 7000) efforts to ensure compliance with federal, state and local regulatory requirements. The environmental compliance program includes efforts to enhance compliance through pollution prevention reducing controlled emissions and use of hazardous materials. Air Force Plant 44 is the backbone of Department of Defense (DoD) weapon systems assembly and maintenance supporting AMRAAM, Javelin, Griffin, Phalanx, Sidewinder, Standard Missiles, Stinger, Tomahawk, and numerous other weapon system. Funds are also provided within this appropriation to assess space-related industrial base concerns (MPC 6000).

Funding for this exhibit is contained in PE 78011F

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 funds environmental compliance (MPC 7000) and capital type rehabilitation (MPC 3000) programs, at Air Force Plant 44, a unique defense asset which supports the production of several missile systems for the Air Force and the Navy. In FY2020 there are also funds for space-related industrial base assessments (MPC 6000).

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

Appropriation / Budget Activity / Budget Sub Activity:
3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV

P-1 Line Item Number / Title:
M30FLH / ICBM FUZE MOD

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0604933F **Other Related Program Elements:** 0604933F

Line Item MDAP/MAIS Code: 498

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>)	35.444	6.334	15.767	5.000	-	5.000	20.054	81.727	106.930	128.036	363.984	763.276
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	4.100	14.497	25.673	61.100	105.370
Net Procurement (P-1) (<i>\$ in Millions</i>)	35.444	6.334	15.767	5.000	-	5.000	20.054	77.627	92.433	102.363	302.884	657.906
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	4.100	14.497	-	14.497	25.673	23.000	20.000	18.100	-	105.370
Total Obligation Authority (<i>\$ in Millions</i>)	35.444	6.334	19.867	19.497	-	19.497	45.727	100.627	112.433	120.463	302.884	763.276

(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:

Prior year funding includes \$18.4M which was executed in PE 0101213F, M30MLG, MM III Modifications.

The ICBM Fuze Modernization program will replace the current Mk21/W87 fuze to meet warfighter requirements to support both Minuteman III (MM III) and Ground Based Strategic Deterrent (GBSD). The new fuze will be a form, fit, and functionally equivalent replacement for the legacy Mk21/W87 and will provide a 30-year design life. The program will support the current force of 400 deployed and 50 non-deployed ICBMs.

The program will provide needed MM III weapon system modifications, system testing, support/test equipment, data and training required to accommodate, field, and support the new Mk21 fuze along with the W87 warhead as defined in the AFGSC Requirements Traceability Memo dated 2 December 2013. In addition, the Joint Requirements Oversight Council (JROC) signed the program's JROC Memorandum validating the operational requirement for the program on 6 December 2016. Currently available Mk21/W87 fuze quantities do not meet United States Strategic Command (USSTRATCOM) requirements and the legacy fuze is three times beyond its original ten year design life. A replacement Mk21/W87 fuze is urgently required to meet warfighter requirements and to ensure operational capability. ICBM Fuze Modernization will procure 693 Mk21/W87 replacement fuzes. Fuzes will be delivered and placed in supply for installation by organizational/intermediate maintenance on a schedule to be determined by USSTRATCOM and Air Force Global Strike Command.

Life of Type Buy (LOTB)

FY19 concluded material and component LOTB supporting both the Mk21/W87 and future Mk21A/W87-1 Life Extension Program (LEP).

Long Lead Production

The ICBM Fuze Modernization program continues to require Advanced Procurement authority in FY20 to procure long lead items (Model XI sensor hardware, optoisolators, circuit cards, HBTs, COTS/GOTS materials and components, etc.). Advanced procurement needs increased due to an increased number of materials and piece parts with long lead procurement times. Failure to procure the parts will result in delayed fuze production and fielding activities. It may also cause DMSMS issues as suppliers move to projects that are fully funded.

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.

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV **P-1 Line Item Number / Title:** M30FLH / ICBM FUZE MOD

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0604933F **Other Related Program Elements:** 0604933F

Line Item MDAP/MAIS Code: 498

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-3a	5915 / ICBM Fuze Modernization (Service Life Extension)		B		- / 35.444	- / 6.334	- / 15.767	- / 5.000	- / 0.000	- / 5.000
P-40	Total Gross/Weapon System Cost				- / 35.444	- / 6.334	- / 15.767	- / 5.000	- / -	- / 5.000

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	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-3a	5915 / ICBM Fuze Modernization (Service Life Extension)		B		- / 20.054	- / 81.727	- / 106.930	- / 128.036	- / 363.984	- / 763.276
P-40	Total Gross/Weapon System Cost				- / 20.054	- / 81.727	- / 106.930	- / 128.036	- / 363.984	- / 763.276

*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:
Where applicable, justification for individual modifications is provided in the P-3A exhibits.

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: M30FLH / ICBM FUZE MOD	Modification Number / Title: 5915 / ICBM Fuze Modernization

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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 (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	35.444	6.334	15.767	5.000	0.000	5.000	20.054	81.727	106.930	128.036	363.984	763.276
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	4.100	14.497	25.673	61.100	105.370
Net Procurement (P-1) (\$ in Millions)	35.444	6.334	15.767	5.000	0.000	5.000	20.054	77.627	92.433	102.363	302.884	657.906
Plus CY Advance Procurement (\$ in Millions)	-	-	4.100	14.497	-	14.497	25.673	23.000	20.000	18.100	-	105.370
Total Obligation Authority (\$ in Millions)	35.444	6.334	19.867	19.497	0.000	19.497	45.727	100.627	112.433	120.463	302.884	763.276

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	8.600	8.600
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY15-19 non-recurring costs include Life-of-Type Buys (LOTB) critical to affordably buy qualified Commercial Off-The-Shelf (COTS) parts for use during and after exposure to nuclear environments and to ensure commonality between the Air Force and the Navy. LOPB will be executed jointly with the Navy to provide a pool of interchangeable, qualified, and certified parts for each service's fuze. Procured parts will be delivered to the National Nuclear Security Administration (NNSA), Kansas City National Security Campus (KCNSC) for use in producing common component modules for the Air Force and Navy fuzes. Some component modules will be entirely interchangeable between the Services while others will have interchangeable sub assemblies. Pre-production planning activities will begin in FY18, accomplishing three Production Readiness Reviews (PRR) and two Product Definition and Documentation Reviews (PDDR). The purpose of the PRR is to evaluate the manufacturing system readiness. The purpose of the PDDR is to ensure the requirements necessary for production are in place and mapped from design to production.

Program Overview

The ICBM Fuze Modernization program will replace the current Mk21/W87 fuze to meet warfighter requirements to support both Minuteman III (MM III) and Ground Based Strategic Deterrent (GBSD). The new fuze will be a form, fit, and functionally equivalent replacement for the legacy Mk21/W87 fuze and will provide a 30-year design life. The program will support the current force of 400 deployed and 50 non-deployed ICBMs.

The program will provide needed MM III weapon system modifications, system testing, support/test equipment, data and training required to accommodate, field, and support the new Mk21 fuze along with the W87 warhead as defined in the AFGSC Requirements Traceability Memo dated 2 December 2013. In addition, the Joint Requirements Oversight Council (JROC) signed the program's JROC Memorandum validating the operational requirement for the program on 6 December 2016. Currently available Mk21/W87 fuze quantities do not meet United States Strategic Command (USSTRATCOM) requirements and the legacy fuze is three times beyond its original ten year design life. A replacement Mk21/W87 fuze is urgently required to meet warfighter requirements and to ensure operational capability. ICBM Fuze Modernization will procure 693 Mk21/W87 replacement fuzes. Fuzes will be delivered and placed in supply for installation by organizational/intermediate maintenance on a schedule to be determined by USSTRATCOM and Air Force Global Strike Command.

Life of Type Buy

The ICBM Fuze Modernization program acquired LOTB materials and components from FY15 through FY19 to support both the Mk21/W87 and future Mk21A/W87-1 program. The Mk21A/W87-1 program will utilize similar replacement fuze components being developed by the ICBM Fuze Modernization program. Executing LOTB for Mk21A/W87-1 program ensures this future program can fully leverage the material design, component design, and nuclear certification and qualification activities.

Long Lead Procurement

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: M30FLH / ICBM FUZE MOD	Modification Number / Title: 5915 / ICBM Fuze Modernization
ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:	
<p>Advanced Procurement needs have increased on the program over earlier budget estimates. Increases in the quantity of items with long lead times (Model XI sensor hardware, optoisolators, circuit cards, HBTs, COTS/GOTS materials and components, etc) requires purchases of parts sooner than anticipated. Failure to procure the parts will result in program schedule slip and potentially delay in fielding fuzes. It may also cause DMSMS issues as suppliers move to projects that are fully funded. Begin long lead hardware purchases for AFA production.</p> <p>Milestone/Development Status</p> <p>The program entered Phase 6.3 Developmental Engineering in FY13 and will complete in FY19. The first flight test will be performed in FY19. The follow-on Phase 6.4 Production Engineering will complete development in FY22. The program will enter Phase 6.5 First Production in FY22. Research, Development, Test and Evaluation (RDT&E) is contained in Program Element 0604933F. The program is tailored to use the joint Department of Defense (DoD)-Department of Energy (DOE) Phase 6.X processes for routine nuclear stockpile activities to align with Navy and NNSA operations.</p>		

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Exhibit P-3a, Individual Modification: PB 2020 Air Force										Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1					P-1 Line Item Number / Title: M30FLH / ICBM FUZE MOD					Modification Number / Title: 5915 / ICBM Fuze Modernization			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: LGM-30G				Modification Type: Service Life Extension				Related RDT&E PEs: 0604933F					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
RDT&E PE #													
0604933F	- / 367.596	- / 178.991	- / 172.902	- / 161.199	- / -	- / 161.199	- / 132.926	- / 60.016	- / 2.035	- / 0.000	- / 0.000	- / 1,075.665	
Procurement													
<i>Modification Item 1 of 1:</i> ICBM Fuze													
B Kits													
Recurring													
ICBM Fuze:EQUIPMENT Group B (Active)	- / -	- / -	- / 5.926	6 / 2.077	- / -	6 / 2.077	20 / 13.849	80 / 67.182	106 / 86.661	118 / 103.844	363 / 263.899	693 / 543.438	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 5.926	- / 2.077	- / -	- / 2.077	- / 13.849	- / 67.182	- / 86.661	- / 103.844	- / 263.899	- / 543.438	
<i>Subtotal: ICBM Fuze</i>	- / -	- / -	- / 5.926	- / 2.077	- / -	- / 2.077	- / 13.849	- / 67.182	- / 86.661	- / 103.844	- / 263.899	- / 543.438	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	- / 5.926	- / 2.077	- / -	- / 2.077	- / 13.849	- / 67.182	- / 86.661	- / 103.844	- / 263.899	- / 543.438	
Support (All Modification Items)													
GROUP B: TOTAL NONRECURRING	- / 35.444	- / 6.334	- / 9.841	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 51.619	
Change Orders	- / -	- / -	- / -	- / 0.272	- / -	- / 0.272	- / 0.463	- / 1.864	- / 2.626	- / 3.139	- / 12.253	- / 20.617	
SIM/TRAINER	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.400	6 / 0.200	- / -	- / -	- / -	12 / 0.600	
OTHER GOVT	- / -	- / -	- / -	- / 1.856	- / -	- / 1.856	- / 3.726	- / 8.730	- / 12.359	- / 14.737	- / 65.446	- / 106.854	
PMA - Other Gov't Costs	- / -	- / -	- / -	- / 0.795	- / -	- / 0.795	- / 1.616	- / 3.751	- / 5.284	- / 6.316	- / 22.386	- / 40.148	
<i>Subtotal: Support</i>	- / 35.444	- / 6.334	- / 9.841	- / 2.923	- / -	- / 2.923	6 / 6.205	6 / 14.545	- / 20.269	- / 24.192	- / 100.085	12 / 219.838	
Installation													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	
Total													
Total Cost (Procurement + Support + Installation)	35.444	6.334	15.767	5.000	0.000	5.000	20.054	81.727	106.930	128.036	363.984	763.276	

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Exhibit P-3a, Individual Modification: PB 2020 Air Force						Date: February 2019	
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1			P-1 Line Item Number / Title: M30FLH / ICBM FUZE MOD			Modification Number / Title: 5915 / ICBM Fuze Modernization	
ID Code (A=Service Ready, B=Not Service Ready) : B					MDAP/MAIS Code:		
Modification Item 1 of 1: ICBM Fuze							
Manufacturer Information							
Manufacturer Name: Kansas City National Security Campus				Manufacturer Location: Kansas City, KS			
Administrative Leadtime (in Months): 4				Production Leadtime (in Months): 31			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates			Feb 2020	Feb 2021	Feb 2022	Feb 2023	Feb 2024
Delivery Dates			Sep 2022	Sep 2023	Sep 2024	Sep 2025	Sep 2026
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 693		

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV	P-1 Line Item Number / Title: M30FLH / ICBM FUZE MOD
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Program Elements for Code B Items: 0604933F	Other Related Program Elements: 0604933F
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Line Item MDAP/MAIS Code: 498

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>)	-	-	4.100	14.497	-	14.497	25.673	23.000	20.000	18.100	-	105.370
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	4.100	14.497	-	14.497	25.673	23.000	20.000	18.100	-	105.370
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	4.100	14.497	-	14.497	25.673	23.000	20.000	18.100	-	105.370

Description:

FY20-FY23 information is for materials and piece parts for buildup of subcomponents for the AFAs produced in FY23-26. Advanced procurement needs increased due to an increased number of materials and piece parts with long lead procurement times. Failure to procure the parts will result in delayed fuze production and fielding activities. It may also cause DMSMS issues as suppliers move to projects that are fully funded.

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Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV		P-1 Line Item Number / Title: M30FLH / ICBM FUZE MOD
Program Elements for Code B Items: 0604933F		Other Related Program Elements: 0604933F

Line Item MDAP/MAIS Code: 498

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	5915 / ICBM Fuze Modernization			- / -	- / -	- / 4.100	- / 14.497	- / -	- / 14.497
P-40	Total Gross/Weapon System Cost			- / -	- / -	- / 4.100	- / 14.497	- / -	- / 14.497

Exhibits Schedule				FY 2021	FY 2022	FY 2023	FY 2024	To Complete	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	5915 / ICBM Fuze Modernization			- / 25.673	- / 23.000	- / 20.000	- / 18.100	- / -	- / 105.370
P-40	Total Gross/Weapon System Cost			- / 25.673	- / 23.000	- / 20.000	- / 18.100	- / -	- / 105.370

*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 items identified and included on this sheet are the long lead items with lead time greater than 52 weeks as identified in the parts analysis study.

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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: 3020F / 03 / 1			P-1 Line Item Number / Title: M30FLH / ICBM FUZE MOD						P-3a Number / Title: 5915 / ICBM Fuze Modernization			
First System (2020) Award Date: May 2019		First System (2020) Completion Date: July 2022				Interval Between Systems: 1 Months						
ICBM Fuze Modernization		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>	FY 2021 <i>(Each)</i>	FY 2022 <i>(Each)</i>	FY 2023 <i>(Each)</i>	FY 2024 <i>(Each)</i>	To Complete <i>(Each)</i>	Total <i>(Each)</i>
Quantity		38	-	-	-	-	-	-	-	-	-	-
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>	FY 2021 <i>(\$ M)</i>	FY 2022 <i>(\$ M)</i>	FY 2023 <i>(\$ M)</i>	FY 2024 <i>(\$ M)</i>	To Complete <i>(\$ M)</i>	Total <i>(\$ M)</i>
CFE												
ICBM FUZE MOD Hardware: Arming and Fuzing Assembly		12	-	-	4.100	14.497	25.673	23.000	20.000	18.100	-	105.370
<i>Total: CFE</i>			-	-	4.100	14.497	25.673	23.000	20.000	18.100	-	105.370
Total Advance Procurement/Obligation Authority			-	-	4.100	14.497	25.673	23.000	20.000	18.100	-	105.370

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: 3020F / 03 / 1	P-1 Line Item Number / Title: M30FLH / ICBM FUZE MOD	P-3a Number / Title: 5915 / ICBM Fuze Modernization
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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							
ICBM FUZE MOD Hardware: Arming and Fuzing Assembly	20	24	0.725	May 2020	20		14.497
<i>Total: CFE</i>							14.497
Total Advance Procurement/Obligation Authority							14.497

Description:
 FY20-FY23 information is for materials and piece parts for buildup of subcomponents for the AFAs produced in FY23-26. Advanced Procurement needs have increased on the program over earlier budget estimates. Increases in the quantity of items with long lead times (Model XI sensor hardware, optoisolators, circuit cards, HBTs, etc) requires purchases of parts sooner than anticipated. Failure to procure the parts will result in program schedule slip and potentially delay in fielding fuzes. It may also cause DMSMS issues as suppliers move to projects that are fully funded. Begin long lead hardware purchases for AFA production.

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

Appropriation / Budget Activity / Budget Sub Activity:
3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV

P-1 Line Item Number / Title:
M30MLG / MM III Modifications

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0101213F, 0604851F, 0604933F **Other Related Program Elements:** 0101213F, 0303131F

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>)	160.647	63.978	124.592	50.831	-	50.831	54.614	91.725	93.220	41.132	-	680.739
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	160.647	63.978	124.592	50.831	-	50.831	54.614	91.725	93.220	41.132	-	680.739
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	160.647	63.978	124.592	50.831	-	50.831	54.614	91.725	93.220	41.132	-	680.739

(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:

The FY 2020 funding request was reduced by \$19.776 million to account for the availability of prior year execution balances.

This line item funds modifications to the LGM-30, Minuteman III (MM III) Intercontinental Ballistic Missile (ICBM) weapon system. The MM III is a strategic missile capable of delivering special weapons against a wide range of targets. The purpose of the modifications budgeted in FY20 is to support the operational capability of the Minuteman ICBM through fielding of GBSD. Programs will include analysis of Diminishing Manufacturing Sources and Material Shortages (DMSMS) risks and procurement activities related to DMSMS.

The modifications being performed on LGM-30 include: Minuteman Minimum Essential Emergency Communications Network (MEECN) modification, LGM-30G Launch Control Center Block Upgrade (LCCBU), Airborne Launch Control System Replacement Increment I (ALCS-R), LGM-30G T-9 Launch Facility Trainer Conversion, LGM-30G Launch Control Center Break-In-Kit (LCCB), LGM-30G Arm/Disarm Switch Replacement (ADSR), LGM-30G Control Monitor Procedure Trainer (CMPT), LGM-30G Low Cost Modifications (LCM), LGM-30G ICBM Cryptography Upgrade II (ICU II), LGM-30G Automatic Switching Unit (ASU) and LGM-30G Remote Visual Assessment Phase II (RVA II). The CMPT is an FY20 New Start.

RDT&E funding for modifications other than MEECN is contained in PE 0101213F (PE 0604851F prior to FY15); MEECN is contained in PE 0303131F.

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.

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

Appropriation / Budget Activity / Budget Sub Activity:
3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV

P-1 Line Item Number / Title:
M30MLG / MM III Modifications

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0101213F, 0604851F, 0604933F **Other Related Program Elements:** 0101213F, 0303131F

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***	5910 / MINUTEMAN MEECN MODIFICATION (Capability Improvement)				- / 108.229	- / 9.519	- / 14.304	- / -	- / -	- / -
P-40a***	5927 / Airborne Launch Control System Replacement Increment I (Other)				- / -	- / -	- / -	- / -	- / -	- / -
P-40a***	5928 / T-9 Launch Facility Trainer Conversion (T-9) (Other)				- / 11.810	- / 23.976	- / -	- / 1.576	- / -	- / 1.576
P-40a***	5932 / LGM-30G Remote Visual Assessment Phase II (RVA II) (Other)				- / -	- / -	- / 8.736	- / 0.543	- / -	- / 0.543
P-40a***	5934 / LGM-30G Flight Test Telemetry and Termination System (FT3) (Other)				- / 14.970	- / -	- / -	- / -	- / -	- / -
P-40a***	5942 / LGM-30G Launch Control Center Break-In-Kit (LCCB) (Other)				- / -	- / -	- / 1.184	- / -	- / -	- / -
P-40a***	5943 / ICBM Fuze Modernization (Service Life Extension)				- / 18.400	- / -	- / -	- / -	- / -	- / -
P-40a***	5947 / A/D Switch Replacement (Reliability & Maintainability)				- / -	- / -	- / -	- / -	- / -	- / -
P-40a***	5948 / CMPT upgrade (Other)				- / -	- / -	- / -	- / 0.859	- / -	- / 0.859
P-40a***	99999X / Low Cost Modifications (Other)				- / 7.238	- / -	- / -	- / -	- / -	- / -
P-3a	5916 / ICBM Cryptography Upgrade Increment II (Capability Improvement)		B		- / 0.000	- / 30.483	- / 69.060	- / 23.570	- / 0.000	- / 23.570
P-3a	5921 / MM LCC Block Upgrades (Service Life Extension)		B		- / 0.000	- / 0.000	- / 24.296	- / 17.246	- / 0.000	- / 17.246
P-3a	5925 / MM III Auto Switching Unit (ASU) (Service Life Extension)		B		- / 0.000	- / 0.000	- / 7.012	- / 7.037	- / 0.000	- / 7.037
P-40	Total Gross/Weapon System Cost				- / 160.647	- / 63.978	- / 124.592	- / 50.831	- / -	- / 50.831

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	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***	5910 / MINUTEMAN MEECN MODIFICATION (Capability Improvement)				- / -	- / -	- / -	- / -	- / -	- / 132.052
P-40a***	5927 / Airborne Launch Control System Replacement Increment I (Other)				- / -	- / -	- / 58.359	- / 36.857	- / -	- / 95.216
P-40a***	5928 / T-9 Launch Facility Trainer Conversion (T-9) (Other)				- / -	- / -	- / -	- / -	- / -	- / 37.362
P-40a***	5932 / LGM-30G Remote Visual Assessment Phase II (RVA II) (Other)				- / 12.060	- / 2.492	- / -	- / -	- / -	- / 23.831
P-40a***	5934 / LGM-30G Flight Test Telemetry and Termination System (FT3) (Other)				- / -	- / -	- / -	- / -	- / -	- / 14.970
P-40a***	5942 / LGM-30G Launch Control Center Break-In-Kit (LCCB) (Other)				- / -	- / -	- / -	- / -	- / -	- / 1.184
P-40a***	5943 / ICBM Fuze Modernization (Service Life Extension)				- / -	- / -	- / -	- / -	- / -	- / 18.400
P-40a***	5947 / A/D Switch Replacement (Reliability & Maintainability)				- / 0.000	- / 14.551	- / 10.460	- / 0.000	- / -	- / 25.011
P-40a***	5948 / CMPT upgrade (Other)				- / -	- / -	- / -	- / -	- / -	- / 0.859
P-40a***	99999X / Low Cost Modifications (Other)				- / 2.000	- / 2.000	- / 1.500	- / -	- / -	- / 12.738

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV **P-1 Line Item Number / Title:** M30MLG / MM III Modifications

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0101213F, 0604851F, 0604933F **Other Related Program Elements:** 0101213F, 0303131F

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	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-3a	5916 / ICBM Cryptography Upgrade Increment II (Capability Improvement)		B		- / 20.494	- / 54.192	- / 0.000	- / -	- / -	- / 197.799
P-3a	5921 / MM LCC Block Upgrades (Service Life Extension)		B		- / 0.000	- / 0.000	- / 0.000	- / -	- / -	- / 41.542
P-3a	5925 / MM III Auto Switching Unit (ASU) (Service Life Extension)		B		- / 20.060	- / 18.490	- / 22.901	- / 4.275	- / -	- / 79.775
P-40	Total Gross/Weapon System Cost				- / 54.614	- / 91.725	- / 93.220	- / 41.132	- / -	- / 680.739

*** Although this is an Exhibit P-40a item, the actual exhibit is not included since all of the required information for this item is already being shown here.

*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:
Where applicable, justification for individual modifications is provided in the P-3A exhibits.

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: M30MLG / MM III Modifications	Modification Number / Title: 5916 / ICBM Cryptography Upgrade Increment II

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	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	30.483	69.060	23.570	0.000	23.570	20.494	54.192	0.000	-	-	197.799
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	30.483	69.060	23.570	0.000	23.570	20.494	54.192	0.000	-	-	197.799
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	30.483	69.060	23.570	0.000	23.570	20.494	54.192	0.000	-	-	197.799

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

Initial Spares (<i>\$ in Millions</i>)	2.148	-	-	0.508	-	0.508	-	-	-	-	-	2.656
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

LGM-30G MM Crypto Mods / ICBM Cryptography Upgrade II (ICU II) procures and fields upgraded A4 Drawers that implement KS-60 Remote Key/Code Change (RCC), Irreversible Transformation (IT) and Continuous Signal Lockout (CSLO) capabilities that increases code security and prevents widespread loss of status monitoring. Cryptography modifications will increase security during code changes by reducing the frequency of open sites by 75 days annually while reducing associated labor costs.

Milestone/Development Status

ICU II Engineering & Manufacturing Development for A4 Drawer will conclude 2QFY2019.

Key production activities include:

ICU II Milestone C: Aug 18
 ICU II Production and Deployment Phase: 1QFY2019 - 2QFY2024
 ICU II FOC: Mar 24

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Exhibit P-3a, Individual Modification: PB 2020 Air Force										Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1					P-1 Line Item Number / Title: M30MLG / MM III Modifications					Modification Number / Title: 5916 / ICBM Cryptography Upgrade Increment II			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: LGM-30G				Modification Type: Capability Improvement				Related RDT&E PEs: 0101213F					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
RDT&E PE #													
0101213F	- / 106.156	- / 0.000	- / 14.540	- / 13.293	- / -	- / 13.293	- / 4.452	- / 3.750	- / 3.124	- / -	- / -	- / 145.315	
Procurement													
<i>Modification Item 1 of 1: A4 Drawer Replacement</i>													
B Kits													
Recurring													
A4 Drawer Replacement:EQUIPMENT Group B (Active)	- / -	69 / 29.733	160 / 62.080	58 / 22.504	- / -	58 / 22.504	40 / 15.520	130 / 50.440	- / -	- / -	- / -	457 / 180.277	
<i>Subtotal: Recurring</i>	- / -	- / 29.733	- / 62.080	- / 22.504	- / -	- / 22.504	- / 15.520	- / 50.440	- / -	- / -	- / -	- / 180.277	
<i>Subtotal: A4 Drawer Replacement</i>	- / -	- / 29.733	- / 62.080	- / 22.504	- / -	- / 22.504	- / 15.520	- / 50.440	- / -	- / -	- / -	- / 180.277	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / 29.733	- / 62.080	- / 22.504	- / -	- / 22.504	- / 15.520	- / 50.440	- / -	- / -	- / -	- / 180.277	
Support (All Modification Items)													
SUPPORT-EQUIP	- / -	- / -	- / 14.976	- / 0.464	- / -	- / 0.464	- / 2.541	- / -	- / -	- / -	- / -	- / 17.981	
Change Orders	- / -	- / -	- / 0.000	- / 0.000	- / -	- / 0.000	- / 0.000	- / 1.039	- / -	- / -	- / -	- / 1.039	
A&AS	- / -	- / 0.750	- / 0.522	- / 0.535	- / -	- / 0.535	- / 1.300	- / 1.401	- / -	- / -	- / -	- / 4.508	
PMA - Other Gov't Costs	- / -	- / -	- / 1.482	- / 0.067	- / -	- / 0.067	- / 1.133	- / 1.312	- / -	- / -	- / -	- / 3.994	
<i>Subtotal: Support</i>	- / -	- / 0.750	- / 6.980	- / 1.066	- / -	- / 1.066	- / 4.974	- / 3.752	- / -	- / -	- / -	- / 17.522	
Installation													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	
Total													
Total Cost (Procurement + Support + Installation)	0.000	30.483	69.060	23.570	0.000	23.570	20.494	54.192	0.000	-	-	197.799	

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Exhibit P-3a, Individual Modification: PB 2020 Air Force					Date: February 2019		
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1			P-1 Line Item Number / Title: M30MLG / MM III Modifications			Modification Number / Title: 5916 / ICBM Cryptography Upgrade Increment II	
ID Code (A=Service Ready, B=Not Service Ready) : B					MDAP/MAIS Code:		
Modification Item 1 of 1: A4 Drawer Replacement							
Manufacturer Information							
Manufacturer Name: The Boeing Company				Manufacturer Location: Huntsville, AL			
Administrative Leadtime (in Months): 0				Production Leadtime (in Months): 26			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Aug 2018	Oct 2019	Jan 2020	Jan 2021	Jan 2022		
Delivery Dates	Oct 2020	Dec 2021	Mar 2022	Mar 2023	Mar 2024		
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 457		

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: M30MLG / MM III Modifications	Modification Number / Title: 5921 / MM LCC Block Upgrades

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	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	0.000	24.296	17.246	0.000	17.246	0.000	0.000	0.000	-	-	41.542
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	24.296	17.246	0.000	17.246	0.000	0.000	0.000	-	-	41.542
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	24.296	17.246	0.000	17.246	0.000	0.000	0.000	-	-	41.542

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

Initial Spares (<i>\$ in Millions</i>)	-	-	1.348	3.696	-	3.696	-	-	-	-	-	5.044
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The LCCBU program addresses several elements within the LCC experiencing supportability issues. Each component will be procured once development has been completed and installed at each LCC based on availability. It will consist of Journal Memory Loader (JML), Floppy Disk Drive (FDD), Weapon System Control Console (WSSC) Printer, Oxygen Regeneration Unit (ORU), and other changes as requirements dictate.

All LCCBU efforts will support 45 operational LCCs, 12 trainers, 2 Integration Facilities, 2 Test Launch Facilities, additional support and test equipment for maintenance locations.

The original development strategy was to retrofit production articles into the trainers. To ensure functionality and operational realism, the Program developed the trainer items in conjunction with the operational items making them trainer unique.

The current number of Production units for deployment includes 49 operational units and 12 trainer units.

During production, the items will be produced separately in two separate phases due to additional requirements and design changes, with FDD and ORU being produced together and the Printer and JML being produced together.

Once complete, the 4 production items will be combined for deployment into a single kit, and shipped to the installation locations.

RDT&E efforts are included in PE 0101213F. Development for applicable components concludes and transitions to production in FY19.

Milestone/Development Status

Key production activities include:

LCC Block Upgrades Milestone C: Jul 19

LCC Block Upgrades Production and Deployment: 4QFY2019 - 2QFY2021

LCC Block Upgrades RAA: Jan 21

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Exhibit P-3a, Individual Modification: PB 2020 Air Force										Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1					P-1 Line Item Number / Title: M30MLG / MM III Modifications					Modification Number / Title: 5921 / MM LCC Block Upgrades			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: LGM-30G				Modification Type: Service Life Extension				Related RDT&E PEs: 0101213F					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
RDT&E PE #													
0101213F	- / 26.062	- / 11.310	- / 5.386	- / 1.000	- / -	- / 1.000	- / -	- / -	- / -	- / -	- / -	- / 43.758	
Procurement													
<i>Modification Item 1 of 1:</i> Modification Kit													
B Kits													
Recurring													
Modification Kit:EQUIPMENT Group B (Active)	- / -	- / -	33 / 20.867	28 / 15.540	- / -	28 / 15.540	- / -	- / -	- / -	- / -	- / -	61 / 36.407	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 20.867	- / 15.540	- / -	- / 15.540	- / -	- / -	- / -	- / -	- / -	- / 36.407	
<i>Subtotal: Modification Kit</i>	- / -	- / -	- / 20.867	- / 15.540	- / -	- / 15.540	- / -	- / -	- / -	- / -	- / -	- / 36.407	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	- / 20.867	- / 15.540	- / -	- / 15.540	- / -	- / -	- / -	- / -	- / -	- / 36.407	
Support (All Modification Items)													
PMA - Other Gov't Costs	- / -	- / -	- / 2.493	- / 0.967	- / -	- / 0.967	- / -	- / -	- / -	- / -	- / -	- / 3.460	
Data	- / -	- / -	- / 0.936	- / 0.239	- / -	- / 0.239	- / -	- / -	- / -	- / -	- / -	- / 1.175	
<i>Subtotal: Support</i>	- / -	- / -	- / 3.429	- / 1.206	- / -	- / 1.206	- / -	- / -	- / -	- / -	- / -	- / 4.635	
Installation													
<i>Modification Item 1 of 1:</i> Modification Kit	- / -	- / -	- / -	61 / 0.500	- / -	61 / 0.500	- / -	- / -	- / -	- / -	- / -	61 / 0.500	
<i>Subtotal: Installation</i>	- / -	- / -	- / -	61 / 0.500	- / -	61 / 0.500	- / -	- / -	- / -	- / -	- / -	61 / 0.500	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	24.296	17.246	0.000	17.246	0.000	0.000	0.000	-	-	41.542	

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Exhibit P-3a, Individual Modification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: M30MLG / MM III Modifications	Modification Number / Title: 5921 / MM LCC Block Upgrades
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ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Modification Item 1 of 1: Modification Kit

Manufacturer Information

Manufacturer Name: Northrop Grumman	Manufacturer Location: TBD
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Administrative Leadtime (in Months): 1	Production Leadtime (in Months): 10
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Jul 2019	Nov 2019				
Delivery Dates		Jun 2020	Sep 2020				

Installation Information

Method of Implementation: Contract Field Team

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	33 / 0.270	- / -	33 / 0.270	- / -	- / -	- / -	- / -	- / -	33 / 0.270
FY 2020	- / -	- / -	- / -	28 / 0.230	- / -	28 / 0.230	- / -	- / -	- / -	- / -	- / -	28 / 0.230
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	61 / 0.500	- / -	61 / 0.500	- / -	- / -	- / -	- / -	- / -	61 / 0.500

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	0	-	-	-	-	-	-	-	-	-	-	33	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	61
Out	0	-	-	-	-	-	-	-	-	-	-	-	33	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	61

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: M30MLG / MM III Modifications	Modification Number / Title: 5925 / MM III Auto Switching Unit (ASU)

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	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	0.000	7.012	7.037	0.000	7.037	20.060	18.490	22.901	4.275	-	79.775
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	7.012	7.037	0.000	7.037	20.060	18.490	22.901	4.275	-	79.775
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	7.012	7.037	0.000	7.037	20.060	18.490	22.901	4.275	-	79.775

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

Initial Spares (<i>\$ in Millions</i>)	-	-	-	0.439	-	0.439	-	-	-	-	-	0.439
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The ASU Program will replace the obsolete Auto Switching Unit, Diesel Electric Unit, and Minuteman Power Processor with modern commercial off-the-shelf components to improve reliability and supportability. All Launch Facilities and Missile Alert Facilities will be impacted by this program at all missile wings. The ASU program will also modify Minuteman trainers and facilities at Vandenberg. The new equipment is expected to have a design life of 10 years and will replace equipment that has exceeded its original design life.

Milestone/Development Status

Key production activities include:

ASU Milestone C: Mar 19

Production and Deployment Phase: 3QFY2019 - 4QFY2024

ASU RAA: Jan 25

ASU replacement development began in FY17 and is scheduled to transition to production in FY19.

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Exhibit P-3a, Individual Modification: PB 2020 Air Force										Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1				P-1 Line Item Number / Title: M30MLG / MM III Modifications						Modification Number / Title: 5925 / MM III Auto Switching Unit (ASU)			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: LGM-30G				Modification Type: Service Life Extension				Related RDT&E PEs: 0101213F					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
RDT&E PE #													
0101213F	- / 10.603	- / 4.554	- / 2.658	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 17.815	
Procurement													
Modification Item 1 of 1: Auto Switching Unit													
B Kits													
Recurring													
Auto Switching Unit:EQUIPMENT Group B (Active)	- / -	- / -	40 / 4.356	39 ⁽¹⁾ / 4.039	- / -	39 / 4.039	130 ⁽²⁾ / 12.271	125 ⁽³⁾ / 11.247	159 ⁽⁴⁾ / 14.281	27 ⁽⁵⁾ / 2.391	- / -	520 / 48.585	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 4.356	- / 4.039	- / -	- / 4.039	- / 12.271	- / 11.247	- / 14.281	- / 2.391	- / -	- / 48.585	
<i>Subtotal: Auto Switching Unit</i>	- / -	- / -	- / 4.356	- / 4.039	- / -	- / 4.039	- / 12.271	- / 11.247	- / 14.281	- / 2.391	- / -	- / 48.585	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	- / 4.356	- / 4.039	- / -	- / 4.039	- / 12.271	- / 11.247	- / 14.281	- / 2.391	- / -	- / 48.585	
Support (All Modification Items)													
PMA - Other Gov't Costs	- / -	- / -	- / 0.282	- / 0.507	- / -	- / 0.507	- / 0.762	- / 0.743	- / 0.420	- / 0.284	- / -	- / 2.998	
A&AS	- / -	- / -	- / 0.347	- / 0.515	- / -	- / 0.515	- / 0.527	- / 0.250	- / 0.250	- / 0.250	- / -	- / 2.139	
<i>Subtotal: Support</i>	- / -	- / -	- / 0.629	- / 1.022	- / -	- / 1.022	- / 1.289	- / 0.993	- / 0.670	- / 0.534	- / -	- / 5.137	
Installation													
Modification Item 1 of 1: Auto Switching Unit	- / -	- / -	40 / 2.027	35 / 1.976	- / -	35 / 1.976	126 / 6.500	121 / 6.250	155 / 7.950	23 / 1.350	- / -	500 / 26.053	
<i>Subtotal: Installation</i>	- / -	- / -	40 / 2.027	35 / 1.976	- / -	35 / 1.976	126 / 6.500	121 / 6.250	155 / 7.950	23 / 1.350	- / -	500 / 26.053	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	7.012	7.037	0.000	7.037	20.060	18.490	22.901	4.275	-	79.775	

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: M30MLG / MM III Modifications	Modification Number / Title: 5925 / MM III Auto Switching Unit (ASU)

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Modification Item 1 of 1: Auto Switching Unit

Manufacturer Information

Manufacturer Name: Northrop Grumman Manufacturer Location: Ogden, UT

Administrative Leadtime (in Months): 1 Production Leadtime (in Months): 3

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Mar 2019	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024
Delivery Dates		Jun 2019	Jun 2020	Jun 2021	Jun 2022	Jun 2023	Jun 2024

Installation Information

Method of Implementation: Contract Field Team

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	40 / 2.027	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	40 / 2.027
FY 2020	- / -	- / -	- / -	35 ⁽⁶⁾ / 1.976	- / -	35 / 1.976	- / -	- / -	- / -	- / -	- / -	35 / 1.976
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	126 ⁽⁷⁾ / 6.500	- / -	- / -	- / -	- / -	126 / 6.500
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	121 ⁽⁸⁾ / 6.250	- / -	- / -	- / -	121 / 6.250
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	155 ⁽⁹⁾ / 7.950	- / -	- / -	155 / 7.950
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	23 ⁽¹⁰⁾ / 1.350	- / -	23 / 1.350
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	40 / 2.027	35 / 1.976	- / -	35 / 1.976	126 / 6.500	121 / 6.250	155 / 7.950	23 / 1.350	- / -	500 / 26.053

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	0	-	-	-	-	-	40	-	-	35	-	-	-	-	126	-	-	-	121	-	-	-	155	-	-	-	23	-	-	0	500
Out	0	-	-	-	-	-	40	-	-	35	-	-	-	-	126	-	-	-	121	-	-	-	155	-	-	-	23	-	-	0	500

Footnotes:
 (1) 4 units from each production lot are required for testing purposes and will not be installed.
 (2) 4 units from each production lot are required for testing purposes and will not be installed.

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: M30MLG / MM III Modifications	Modification Number / Title: 5925 / MM III Auto Switching Unit (ASU)
ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:	
<p>(3) 4 units from each production lot are required for testing purposes and will not be installed. (4) 4 units from each production lot are required for testing purposes and will not be installed. (5) 4 units from each production lot are required for testing purposes and will not be installed. (6) 4 units from each production lot are required for testing purposes and will not be installed. (7) 4 units from each production lot are required for testing purposes and will not be installed. (8) 4 units from each production lot are required for testing purposes and will not be installed. (9) 4 units from each production lot are required for testing purposes and will not be installed. (10) 4 units from each production lot are required for testing purposes and will not be installed.</p>		

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV	P-1 Line Item Number / Title: M65DAG / AGM-65D Maverick
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	26.902	10.289	33.890	0.294	0.000	0.294	0.298	0.305	0.311	0.317	-	72.606
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	26.902	10.289	33.890	0.294	0.000	0.294	0.298	0.305	0.311	0.317	-	72.606
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	26.902	10.289	33.890	0.294	0.000	0.294	0.298	0.305	0.311	0.317	-	72.606

(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:

FY18 funding totals include \$10.000M requested for Overseas Contingency Operations to fund the modification of 91 legacy AGM-65 Maverick missiles to Laser Maverick missiles.
 FY19 funding totals include \$36.602M requested for Overseas Contingency Operations to fund the modification of 336 legacy AGM-65 Maverick missiles to Laser Maverick missiles.

AGM-65L is the Air Force Laser Maverick missile that aids in striking moving targets traveling at high velocities with proven accuracy and low collateral damage. The missile is a modification of inventory baseline Maverick missiles. The AGM-65L Maverick missiles replaced electro-optical TV seeker components with new Semi-Active Laser (SAL) components. The AGM-65A/B Guidance Control System (GCS) is modified to Laser which is the "L" variant. For the backend, the AGM-65G Center Aft Section (CAS) mates with the laser GCS for a tactical All-up Round (AUR) laser missile. The modification program is with Raytheon Missile Systems. Additional baseline Maverick missiles will be modified to Laser Maverick missiles with accrued Foreign Military Sales (FMS) exchange credits. Funding also covers the movement of Maverick GCS units (AGM-65A/B/G) between the McAlester Army Ammunition Plant & Raytheon Missile Systems (Tucson, AZ). The older Maverick GCS units are upgraded/modified to Laser Maverick seekers.

Funding for this exhibit contained in PE 0207313F.

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.

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:

Where applicable, justification for individual modifications is provided in the P-3A exhibits.

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

Appropriation / Budget Activity / Budget Sub Activity:
3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV

P-1 Line Item Number / Title:
MALCBG / Air Launch Cruise Missile (ALCM)

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0101122F **Other Related Program Elements:** 0101122F

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>)	163.960	31.671	47.632	77.387	-	77.387	80.837	83.498	69.296	0.000	116.657	670.938
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	163.960	31.671	47.632	77.387	-	77.387	80.837	83.498	69.296	0.000	116.657	670.938
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	163.960	31.671	47.632	77.387	-	77.387	80.837	83.498	69.296	0.000	116.657	670.938

(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:

The AGM-86B, Air Launched Cruise Missile (ALCM), is a subsonic, air-to-surface strategic nuclear missile, operational since 1982. Armed with a W80 warhead, it is designed to evade air and ground-based defenses in order to strike targets at any location within any enemy's territory. ALCM was designed for both B-52H internal and external carriage. Funding for this exhibit is contained in PE 0101122F.

Change Summary:

FY20 changes reflect actual costs from contract award for CATIK, FUZE Assy and W-10 programs. INE and GMFC changes reflect update POE data.

Support Equipment funding increased to support initial development of Common Strategic Rotary Launcher (CSRL) refurbishment and fleet-wide CSRL program.

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.

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

Appropriation / Budget Activity / Budget Sub Activity:
3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV

P-1 Line Item Number / Title:
MALCBG / Air Launch Cruise Missile (ALCM)

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0101122F **Other Related Program Elements:** 0101122F

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***	_0468 / AGM-86B Low Cost Mods (Other)				- / 1.644	- / 0.000	- / 0.090	- / 0.090	- / -	- / 0.090
P-40a***	860002 / AGM-86B Service Life Extension Program 2 (Service Life Extension)				- / 39.078	- / 16.632	- / 0.000	- / 0.000	- / -	- / 0.000
P-40a***	860004 / AGM-86B Service Life Extension Program 3 (Service Life Extension)				- / 10.377	- / 4.903	- / -	- / -	- / -	- / -
P-40a***	860101 / AGM-86B Service Life Extension Program 1 (Service Life Extension)				- / 8.254	- / 2.807	- / 2.110	- / 2.100	- / -	- / 2.100
P-40a***	860103 / Warhead Arming Device (WAD) (Service Life Extension)				- / -	- / -	- / 8.590	- / 1.367	- / -	- / 1.367
P-40a***	860106 / W-10 Cable (Service Life Extension)				- / -	- / -	- / 0.638	- / 0.592	- / -	- / 0.592
P-3a	860009 / AGM-86B CALCM/ALCM Test Instrumentation Kit (Capability Improvement)		B		- / 104.607	- / 7.328	- / 1.300	- / 10.626	- / 0.000	- / 10.626
P-3a	860011 / Support Equipment (Reliability & Maintainability)		B		- / -	- / -	- / 27.805	- / 21.925	- / 0.000	- / 21.925
P-3a	860104 / Rotary Switch (RS) (Reliability & Maintainability)		B		- / -	- / 0.000	- / 7.099	- / 7.493	- / 0.000	- / 7.493
P-3a	860105 / Guided Missile Flight Controller (GMFC) (Reliability & Maintainability)		B		- / -	- / 0.000	- / 0.000	- / 6.914	- / 0.000	- / 6.914
P-3a	860107 / Fuze Assembly (Service Life Extension)		B		- / -	- / -	- / 0.000	- / 12.875	- / 0.000	- / 12.875
P-3a	860108 / Inertial Navigation Element (INE) (Reliability & Maintainability)		B		- / -	- / -	- / 0.000	- / 13.405	- / 0.000	- / 13.405
P-40	Total Gross/Weapon System Cost				- / 163.960	- / 31.671	- / 47.632	- / 77.387	- / -	- / 77.387

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	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***	_0468 / AGM-86B Low Cost Mods (Other)				- / 0.100	- / 0.100	- / 0.100	- / -	- / -	- / 2.124
P-40a***	860002 / AGM-86B Service Life Extension Program 2 (Service Life Extension)				- / 0.000	- / 0.000	- / -	- / -	- / -	- / 55.710
P-40a***	860004 / AGM-86B Service Life Extension Program 3 (Service Life Extension)				- / -	- / -	- / -	- / -	- / -	- / 15.280
P-40a***	860101 / AGM-86B Service Life Extension Program 1 (Service Life Extension)				- / 2.100	- / 2.200	- / 2.300	- / 0.000	- / 2.200	- / 24.071
P-40a***	860103 / Warhead Arming Device (WAD) (Service Life Extension)				- / 0.024	- / 0.024	- / 0.024	- / -	- / -	- / 10.029
P-40a***	860106 / W-10 Cable (Service Life Extension)				- / 0.609	- / 0.227	- / -	- / -	- / -	- / 2.066
P-3a	860009 / AGM-86B CALCM/ALCM Test Instrumentation Kit (Capability Improvement)		B		- / 11.005	- / 8.907	- / 3.076	- / 0.000	- / 0.000	- / 146.849
P-3a	860011 / Support Equipment (Reliability & Maintainability)		B		- / 33.580	- / 43.641	- / 38.630	- / 0.000	- / -	- / 165.581
P-3a	860104 / Rotary Switch (RS) (Reliability & Maintainability)		B		- / 7.697	- / 7.900	- / 6.271	- / 0.000	- / 0.005	- / 36.465
P-3a	860105 / Guided Missile Flight Controller (GMFC) (Reliability & Maintainability)		B		- / 6.470	- / 6.607	- / 6.788	- / 0.000	- / 5.552	- / 32.331

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

Appropriation / Budget Activity / Budget Sub Activity:
3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV

P-1 Line Item Number / Title:
MALCBG / Air Launch Cruise Missile (ALCM)

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0101122F **Other Related Program Elements:** 0101122F

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	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-3a	860107 / Fuze Assembly (Service Life Extension)		B		- / 7.045	- / 1.875	- / 0.024	- / 0.000	- / 0.000	- / 21.819
P-3a	860108 / Inertial Navigation Element (INE) (Reliability & Maintainability)		B		- / 12.207	- / 12.017	- / 12.083	- / 0.000	- / 108.900	- / 158.612
P-40	Total Gross/Weapon System Cost				- / 80.837	- / 83.498	- / 69.296	- / 0.000	- / 116.657	- / 670.938

*** Although this is an Exhibit P-40a item, the actual exhibit is not included since all of the required information for this item is already being shown here.

*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:
Where applicable, justification for individual modifications is provided in the P-3A exhibits.

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860009 / AGM-86B CALCM/ALCM Test Instrumentation Kit

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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 (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	104.607	7.328	1.300	10.626	0.000	10.626	11.005	8.907	3.076	0.000	0.000	146.849
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	104.607	7.328	1.300	10.626	0.000	10.626	11.005	8.907	3.076	0.000	0.000	146.849
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	104.607	7.328	1.300	10.626	0.000	10.626	11.005	8.907	3.076	0.000	0.000	146.849

(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)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program reflects the procurement of Conventional/Air Launched Cruise Missile (CALCM/ALCM) Test Instrumentation Kits (CATIK). CATIKs provide telemetry, tracking, flight termination, and power to support missile flight testing while meeting Range Safety Standards. CATIK units consist of payload doors, battery sets, and encryption/decryption units (EU/DU). The CATIK is required for flight testing and critical to collecting data for the Nuclear Weapon System Evaluation Program. Six CATIKs are consumed each year to support flight tests. This number may fluctuate based on flight test requirements. In 2010, AFGSC increased the CATIK requirement by 66 units and later added an additional 14 more units to support flight test requirements through 2028. The remaining requirement to procure is 39 CATIK units.

Battery sets are procured on the same contract as the CATIK. A set consist of a Flight Termination System (FTS), battery, and a separate battery to support the telemetry instrumentation. Battery sets have a two year lead time from receipt of order and are limited to a seven year shelf life. CATIK batteries are represented in the "SUPPORT-EQUIP" line.

The current activity will also procure modified CATIK components and associated equipment to support integration of new Encryption/Decryption chips. The National Security Agency (NSA) is phasing out the old Encryption/Decryption chips due to crypto modernization. To ensure continued support of the ALCM, the Missile Sustainment Division has acquired a waiver from NSA which supports the continued use of current chips out to a future classified date. This modification was initiated with an Aug 2014 award to Boeing for EU/DU replacement. Encryption Equipment is procured along with CATIK but not on a one-for-one basis (the number of Encryption chips procured in a given year varies).

Three factors contribute to the cost increase in FY20. The restarting of the CATIK line, upgraded common core unit, and upgraded flight termination receiver.

CATIK funds will continue to support AFGSC and USSTRATCOM requirements to keep the ALCM viable through 2030.

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

Milestone/Development Status

CATIK Enterprise effort consists of CATIK units, Encryption units, Battery Sets, and Decryption units to support flight tests through FY28.

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Exhibit P-3a, Individual Modification: PB 2020 Air Force										Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1				P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)						Modification Number / Title: 860009 / AGM-86B CALCM/ALCM Test Instrumentation Kit			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: AGM-86B				Modification Type: Capability Improvement				Related RDT&E PEs: 0101122F					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1: CATIKS</i>													
B Kits													
Recurring													
CATIKS:EQUIPMENT Group B (Active)	103 / 77.362	12 / 7.321	0 / 0.000	13 / 10.619	- / -	13 / 10.619	14 / 9.748	12 / 8.900	- / -	- / -	- / -	154 / 113.950	
<i>Subtotal: Recurring</i>	- / 77.362	- / 7.321	- / 0.000	- / 10.619	- / -	- / 10.619	- / 9.748	- / 8.900	- / -	- / -	- / -	- / 113.950	
<i>Subtotal: CATIKS</i>	- / 77.362	- / 7.321	- / 0.000	- / 10.619	- / -	- / 10.619	- / 9.748	- / 8.900	- / -	- / -	- / -	- / 113.950	
<i>Subtotal: Procurement, All Modification Items</i>	- / 77.362	- / 7.321	- / 0.000	- / 10.619	- / -	- / 10.619	- / 9.748	- / 8.900	- / -	- / -	- / -	- / 113.950	
Support (All Modification Items)													
GROUP B: TOTAL NONRECURRING	- / 1.767	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.767	
PMA - Other Gov't Costs	0 / 0.014	- / 0.007	0 / 0.050	0 / 0.007	- / -	0 / 0.007	0 / 0.007	0 / 0.007	0 / 0.007	- / -	- / -	0 / 0.099	
Change Orders	0 / 2.786	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / -	- / -	0 / 2.786	
Data	0 / 1.691	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / -	- / -	0 / 1.691	
OTHER GOVT	0 / 1.761	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / -	- / -	0 / 1.761	
SUPPORT-EQUIP	138 / 19.226	- / -	12 / 1.250	- / -	- / -	- / -	12 / 1.250	- / -	27 / 3.069	- / 0.000	- / 0.000	189 / 24.795	
<i>Subtotal: Support</i>	138 / 27.245	- / 0.007	12 / 1.300	0 / 0.007	- / -	0 / 0.007	12 / 1.257	0 / 0.007	27 / 3.076	- / 0.000	- / 0.000	189 / 32.899	
Installation													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	
Total													
Total Cost (Procurement + Support + Installation)	104.607	7.328	1.300	10.626	0.000	10.626	11.005	8.907	3.076	0.000	0.000	146.849	

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Exhibit P-3a, Individual Modification: PB 2020 Air Force					Date: February 2019		
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1			P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)			Modification Number / Title: 860009 / AGM-86B CALCM/ALCM Test Instrumentation Kit	
ID Code (A=Service Ready, B=Not Service Ready) : B					MDAP/MAIS Code:		
Modification Item 1 of 1: CATIKS							
Manufacturer Information							
Manufacturer Name: Boeing Company				Manufacturer Location: Oklahoma City, OK			
Administrative Leadtime (in Months): 6				Production Leadtime (in Months): 24			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Jun 2018		Jun 2020	Jun 2021	Jun 2022		
Delivery Dates	Jun 2020		Jun 2022	Jun 2023	Jun 2024		
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 168		

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860011 / Support Equipment

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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>)	-	-	27.805	21.925	0.000	21.925	33.580	43.641	38.630	0.000	-	165.581
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	27.805	21.925	0.000	21.925	33.580	43.641	38.630	0.000	-	165.581
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	27.805	21.925	0.000	21.925	33.580	43.641	38.630	0.000	-	165.581

(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>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

AGM-86B/C Unique Support Equipment and Alternate Mission Equipment must be remanufactured or refurbished to ensure applicable systems remain operational and reliable through system retirement and mission transition to Long Range Stand-Off (LRSO). Funds will support remanufacture procurement and/or refurbishment modification efforts on the suite of AGM-86B/C support equipment used in support of missile maintenance, weapon maintenance, handling gear, and load frame adapter including aging alternate mission equipment. This includes Common Strategic Rotary Launcher (CSRL) and Strategic Pylons. Quantities and installations are not shown as funds will support remanufacture procurement and/or refurbishment modification efforts on multiple kinds and quantities of hardware across the suite of AGM-86B/C equipment used in support of field automatic test requirements and special test equipment.

Milestone/Development Status

Funds will initially support developing refurbishment efforts for the Common Strategic Rotary Launcher (CSRL) to address aging and obsolescence issues. Note: The previous focus of the Support Equipment was the GSU-238 and ESTS. CSRL components were determined to be more critical.

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Exhibit P-3a, Individual Modification: PB 2020 Air Force											Date: February 2019		
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1				P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)					Modification Number / Title: 860011 / Support Equipment				
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: AGM-86B				Modification Type: Reliability & Maintainability				Related RDT&E PEs: 0101122F					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> CSRL													
A Kits													
Recurring													
CSRL:INSTALL KITS Group A (Active)	- / -	- / -	1 / 2.710	1 / 3.051	- / -	1 / 3.051	1 / 2.441	1 / 2.102	1 / 2.793	- / -	- / -	5 / 13.097	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 2.710	- / 3.051	- / -	- / 3.051	- / 2.441	- / 2.102	- / 2.793	- / -	- / -	- / 13.097	
<i>Subtotal: CSRL</i>	- / -	- / -	- / 2.710	- / 3.051	- / -	- / 3.051	- / 2.441	- / 2.102	- / 2.793	- / -	- / -	- / 13.097	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	- / 2.710	- / 3.051	- / -	- / 3.051	- / 2.441	- / 2.102	- / 2.793	- / -	- / -	- / 13.097	
Support (All Modification Items)													
OTHER GOVT	- / -	- / -	- / 25.095	- / 18.874	- / -	- / 18.874	- / 31.139	- / 41.539	- / 35.837	- / -	- / -	- / 152.484	
<i>Subtotal: Support</i>	- / -	- / -	- / 25.095	- / 18.874	- / -	- / 18.874	- / 31.139	- / 41.539	- / 35.837	- / -	- / -	- / 152.484	
Installation													
<i>Modification Item 1 of 1:</i> CSRL													
	- / -	- / -	- / -	1 / 0.000	- / -	1 / 0.000	1 / 0.000	1 / 0.000	1 / 0.000	1 / 0.000	- / -	5 / 0.000	
<i>Subtotal: Installation</i>	- / -	- / -	- / -	1 / 0.000	- / -	1 / 0.000	1 / 0.000	1 / 0.000	1 / 0.000	1 / 0.000	- / -	5 / 0.000	
Total													
Total Cost (Procurement + Support + Installation)	-	-	27.805	21.925	0.000	21.925	33.580	43.641	38.630	0.000	-	165.581	

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Exhibit P-3a, Individual Modification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860011 / Support Equipment
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ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Modification Item 1 of 1: CSRL

Manufacturer Information

Manufacturer Name: Boeing Space & Missiles Systems	Manufacturer Location: OKC
Administrative Leadtime (in Months): 0	Production Leadtime (in Months): 12

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Apr 2019	Apr 2020	Apr 2021	Apr 2022	Apr 2023	
Delivery Dates		Apr 2020	Apr 2021	Apr 2022	Apr 2023	Apr 2024	

Installation Information

Method of Implementation: Contractor Facility

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	1 / 0.000	- / -	1 / 0.000	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	- / -	- / -	- / -	1 / 0.000
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	- / -	- / -	1 / 0.000
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	- / -	1 / 0.000
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	1 / 0.000
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	1 / 0.000	- / -	1 / 0.000	1 / 0.000	1 / 0.000	1 / 0.000	1 / 0.000	- / -	5 / 0.000

Installation Schedule

PYS	In	Out	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot				
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
	0	0	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	0	5
	0	0	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	0	5				

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860104 / Rotary Switch (RS)

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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	7.099	7.493	0.000	7.493	7.697	7.900	6.271	0.000	0.005	36.465
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	0.000	7.099	7.493	0.000	7.493	7.697	7.900	6.271	0.000	0.005	36.465
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	0.000	7.099	7.493	0.000	7.493	7.697	7.900	6.271	0.000	0.005	36.465

(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>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

In FY19, the program segregated the AGM-86B Service Life Extension Program (SLEP-2) components Guided Missile Flight Controller (GFMC), Rotary Switch (RS), and Warhead Arming Device (WAD) into separate efforts. Some of the hardware installations documented under Rotary Switch are for hardware procured under SLEP-2. Ref AGM-86B Service Life Extension Program (SLEP-2) modification number 860002 for information prior to FY19.

AF Long Range Planning required the service life of the ALCM to be extended through 2030. In order to satisfy the life extension requirement, several phases of the service Life Extension program (SLEP) were implemented as a proactive approach. Through studies and surveillance and analysis programs, various components were identified as candidates for replacement due to aging and obsolescence issues before they become fleet-wide problems. This modification executes a remanufacture of the RS. The RS kit will be issued via a Time Compliance Technical Order (TCTO). The remanufactured RS will be available for installation at Hill AFB, Analytical Condition Inspection (ACI) at an annual rate of 24 kits. The RS TCTO kit will also be available to the organizational-level maintenance units for installation at a rate of 70 per year in conjunction with scheduled maintenance activities. This effort is critical to meet Air Force Global Strike Command (AFGSC) and United States Strategic Command (USSTRATCOM) operational needs. Installations are expected to occur FY20-FY25.

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

SLEP funds will continue to support AFGSC and USSTRATCOM requirements to keep the ALCM viable through 2030.

Milestone/Development Status

Engineering studies and analysis programs identified SLEP components for replacement due to aging and obsolescence issues. Solutions to these aging and obsolescence issues were identified through engineering studies conducted by the Original Equipment Manufacturer.

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Exhibit P-3a, Individual Modification: PB 2020 Air Force										Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1				P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)						Modification Number / Title: 860104 / Rotary Switch (RS)			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: AGM-86				Modification Type: Reliability & Maintainability				Related RDT&E PEs: 0101122F					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 2: Rotary Switch-Depot</i>													
B Kits													
Recurring													
Rotary Switch-Depot:EQUIPMENT Group B (Active)	- / -	- / -	24 / 1.840	24 / 1.928	- / -	24 / 1.928	24 / 1.941	24 / 2.007	24 / 2.032	- / -	- / -	120 / 9.748	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 1.840	- / 1.928	- / -	- / 1.928	- / 1.941	- / 2.007	- / 2.032	- / -	- / -	- / 9.748	
<i>Subtotal: Rotary Switch-Depot</i>	- / -	- / -	- / 1.840	- / 1.928	- / -	- / 1.928	- / 1.941	- / 2.007	- / 2.032	- / -	- / -	- / 9.748	
<i>Modification Item 2 of 2: Rotary Switch-Org/ Intermediate</i>													
B Kits													
Recurring													
Rotary Switch-Org/Intermediate:EQUIPMENT Group B (Active)	- / -	- / -	70 / 5.246	70 / 5.346	- / -	70 / 5.346	70 / 5.532	70 / 5.670	48 / 4.009	- / -	- / -	328 / 25.803	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 5.246	- / 5.346	- / -	- / 5.346	- / 5.532	- / 5.670	- / 4.009	- / -	- / -	- / 25.803	
<i>Subtotal: Rotary Switch-Org/Intermediate</i>	- / -	- / -	- / 5.246	- / 5.346	- / -	- / 5.346	- / 5.532	- / 5.670	- / 4.009	- / -	- / -	- / 25.803	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	- / 7.086	- / 7.274	- / -	- / 7.274	- / 7.473	- / 7.677	- / 6.041	- / -	- / -	- / 35.551	
Support (All Modification Items)													
PMA - Other Gov't Costs	- / -	- / -	- / 0.013	- / 0.010	- / -	- / 0.010	- / 0.010	- / 0.010	- / 0.011	- / 0.000	- / -	- / 0.054	
A&AS	- / -	- / -	- / -	- / 0.204	- / -	- / 0.204	- / 0.209	- / 0.208	- / 0.214	- / 0.000	- / -	- / 0.835	
<i>Subtotal: Support</i>	- / -	- / -	- / 0.013	- / 0.214	- / -	- / 0.214	- / 0.219	- / 0.218	- / 0.225	- / 0.000	- / -	- / 0.889	
Installation													
<i>Modification Item 1 of 2: Rotary Switch-Depot</i>	- / -	- / -	- / -	24 / 0.005	- / -	24 / 0.005	24 / 0.005	24 / 0.005	24 / 0.005	- / -	24 / 0.005	120 / 0.025	
<i>Subtotal: Installation</i>	- / -	- / -	- / -	24 / 0.005	- / -	24 / 0.005	24 / 0.005	24 / 0.005	24 / 0.005	- / -	24 / 0.005	120 / 0.025	
Total													
Total Cost (Procurement + Support + Installation)	-	0.000	7.099	7.493	0.000	7.493	7.697	7.900	6.271	0.000	0.005	36.465	

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Exhibit P-3a, Individual Modification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860104 / Rotary Switch (RS)
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ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Modification Item 1 of 2: Rotary Switch-Depot

Manufacturer Information

Manufacturer Name: Boeing Guidance and Repair Center (BGRC)	Manufacturer Location: Heath, OH
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Administrative Leadtime (in Months): 0	Production Leadtime (in Months): 12
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Oct 2018	Oct 2019	Oct 2020	Oct 2021	Oct 2022	
Delivery Dates		Oct 2019	Oct 2020	Oct 2021	Oct 2022	Oct 2023	

Installation Information

Method of Implementation: Depot

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	24 / 0.005	- / -	24 / 0.005	- / -	- / -	- / -	- / -	- / -	24 / 0.005
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.005	- / -	- / -	- / -	- / -	24 / 0.005
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.005	- / -	- / -	- / -	24 / 0.005
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.005	- / -	- / -	24 / 0.005
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.005	24 / 0.005
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	24 / 0.005	- / -	24 / 0.005	24 / 0.005	24 / 0.005	24 / 0.005	24 / 0.005	24 / 0.005	120 / 0.025

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
In	0	-	-	-	-	-	-	-	-	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	-	-	-	-	24	120
Out	0	-	-	-	-	-	-	-	-	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	-	-	-	-	24	120

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Exhibit P-3a, Individual Modification: PB 2020 Air Force						Date: February 2019	
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1			P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)			Modification Number / Title: 860104 / Rotary Switch (RS)	
ID Code (A=Service Ready, B=Not Service Ready) : B					MDAP/MAIS Code:		
Modification Item 2 of 2: Rotary Switch-Org/Intermediate							
Manufacturer Information							
Manufacturer Name: Boeing Guidance and Repair Center (BGRC)				Manufacturer Location: Heath, OH			
Administrative Leadtime (in Months): 0				Production Leadtime (in Months): 0			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Oct 2018	Oct 2019	Oct 2020	Oct 2021	Oct 2022	
Delivery Dates		Oct 2018	Oct 2019	Oct 2020	Oct 2021	Oct 2022	
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 328		

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860105 / Guided Missile Flight Controller (GMFC)

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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	0.000	6.914	0.000	6.914	6.470	6.607	6.788	0.000	5.552	32.331
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	0.000	0.000	6.914	0.000	6.914	6.470	6.607	6.788	0.000	5.552	32.331
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	0.000	0.000	6.914	0.000	6.914	6.470	6.607	6.788	0.000	5.552	32.331

(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>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

In FY19, the program segregated the AGM-86B Service Life Extension Program (SLEP-2) components Guided Missile Flight Controller (GMFC), Rotary Switch (RS), and Warhead Arming Device (WAD) into separate efforts. Some of the hardware installations documented under GMFC are for hardware procured under SLEP-2. Ref AGM-86B Service Life Extension Program (SLEP-2) modification number 860002 for information prior to FY19.

AF Long Range Planning required the service life of the ALCM to be extended through 2030. In order to satisfy the life extension requirement, several phases of the Service Life Extension program (SLEP) were implemented, a proactive approach. Through studies and surveillance and analysis programs, various components were identified as candidates for replacement due to aging and obsolescence issues before they become fleet-wide problems. This modification executes a remanufacture of the GMFC. The GMFC kit will be issued via a Time Compliance Technical Order (TCTO). The remanufactured GMFC TCTO will be available for installation at Hill AFB, Analytical Condition Inspection (ACI) at an annual rate of 24 kits. The GMFC TCTO kit will also be available to the organizational-level maintenance units for installation at a rate of 70 per year in conjunction with scheduled maintenance activities. This effort is critical to meet Air Force Global Strike Command (AFGSC) and United States Strategic Command (USSTRATCOM) operational needs. Installations are expected to occur FY21-FY27.

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

SLEP funds will continue to support AFGSC and USSTRATCOM requirements to keep the ALCM viable through 2030.

Milestone/Development Status

Engineering studies and analysis programs identified SLEP components for replacement due to aging and obsolescence issues. Solutions to these aging and obsolescence issues were identified through engineering studies conducted by the Original Equipment Manufacturer.

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Exhibit P-3a, Individual Modification: PB 2020 Air Force										Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1				P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)						Modification Number / Title: 860105 / Guided Missile Flight Controller (GMFC)			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: AGM-86B			Modification Type: Reliability & Maintainability					Related RDT&E PEs: 0101122F					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 2: GMFC Depot</i>													
B Kits													
Recurring													
GMFC Depot:EQUIPMENT Group B (Active)	- / -	- / -	0 / 0.000	24 / 1.931	- / -	24 / 1.931	24 / 1.803	24 / 1.840	24 / 0.944	- / 0.000	24 / 0.770	120 / 7.288	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 0.000	- / 1.931	- / -	- / 1.931	- / 1.803	- / 1.840	- / 0.944	- / 0.000	- / 0.770	- / 7.288	
<i>Subtotal: GMFC Depot</i>	- / -	- / -	- / 0.000	- / 1.931	- / -	- / 1.931	- / 1.803	- / 1.840	- / 0.944	- / 0.000	- / 0.770	- / 7.288	
<i>Modification Item 2 of 2: GMFC Org/Intermediate</i>													
B Kits													
Recurring													
GMFC Org/Intermediate:EQUIPMENT Group B (Active)	- / -	- / -	0 / 0.000	70 / 4.978	- / -	70 / 4.978	70 / 4.650	70 / 4.738	70 / 5.815	0 / 0.000	48 / 4.729	328 / 24.910	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 0.000	- / 4.978	- / -	- / 4.978	- / 4.650	- / 4.738	- / 5.815	- / 0.000	- / 4.729	- / 24.910	
<i>Subtotal: GMFC Org/Intermediate</i>	- / -	- / -	- / 0.000	- / 4.978	- / -	- / 4.978	- / 4.650	- / 4.738	- / 5.815	- / 0.000	- / 4.729	- / 24.910	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	- / 0.000	- / 6.909	- / -	- / 6.909	- / 6.453	- / 6.578	- / 6.759	- / 0.000	- / 5.499	- / 32.198	
Support (All Modification Items)													
GROUP B: TOTAL NONRECURRING	- / -	- / 0.000	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
PMA - Other Gov't Costs	- / -	- / -	- / 0.000	- / 0.005	- / -	- / 0.005	- / 0.005	- / 0.005	- / 0.005	- / 0.005	- / 0.005	- / 0.025	
<i>Subtotal: Support</i>	- / -	- / 0.000	- / 0.000	- / 0.005	- / -	- / 0.005	- / 0.005	- / 0.005	- / 0.005	- / 0.005	- / 0.005	- / 0.025	
Installation													
<i>Modification Item 1 of 2: GMFC Depot</i>	- / -	- / -	- / -	- / -	- / -	- / -	12 / 0.012	24 / 0.024	24 / 0.024	- / -	60 / 0.048	120 / 0.108	
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	12 / 0.012	24 / 0.024	24 / 0.024	- / -	60 / 0.048	120 / 0.108	
Total													
Total Cost (Procurement + Support + Installation)	-	0.000	0.000	6.914	0.000	6.914	6.470	6.607	6.788	0.000	5.552	32.331	

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860105 / Guided Missile Flight Controller (GMFC)

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Modification Item 1 of 2: GMFC Depot

Manufacturer Information

Manufacturer Name: Boeing Guidance and Repair Center	Manufacturer Location: Heath, Ohio
Administrative Leadtime (in Months): 0	Production Leadtime (in Months): 12

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates			Mar 2020	Apr 2021	Apr 2022	Apr 2023	
Delivery Dates			Mar 2021	Apr 2022	Apr 2023	Apr 2024	

Installation Information

Method of Implementation: Depot

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	12 / 0.012	12 / 0.012	- / -	- / -	- / -	24 / 0.024
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 0.012	12 / 0.012	- / -	- / -	24 / 0.024
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 0.012	- / -	12 / 0.012	24 / 0.024
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.012	24 / 0.012
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.024	24 / 0.024
Total	- / -	- / -	- / -	- / -	- / -	- / -	12 / 0.012	24 / 0.024	24 / 0.024	- / -	60 / 0.048	120 / 0.108

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	6	6	6	6	6	6	6	6	0	0	0	0	60	120
Out	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	6	6	6	6	6	6	6	6	0	0	0	0	60	120

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Air Force					Date: February 2019		
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1			P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)			Modification Number / Title: 860105 / Guided Missile Flight Controller (GMFC)	
ID Code (A=Service Ready, B=Not Service Ready) : B					MDAP/MAIS Code:		
Modification Item 2 of 2: GMFC Org/Intermediate							
Manufacturer Information							
Manufacturer Name: Boeing Guidance and Repair Center					Manufacturer Location: Heath, Ohio		
Administrative Leadtime (<i>in Months</i>): 0					Production Leadtime (<i>in Months</i>): 12		
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates			Mar 2020	Apr 2021	Apr 2022	Apr 2023	
Delivery Dates			Mar 2021	Apr 2022	Apr 2023	Apr 2024	
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 328		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860107 / Fuze Assembly

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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	12.875	0.000	12.875	7.045	1.875	0.024	0.000	0.000	21.819
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	0.000	12.875	0.000	12.875	7.045	1.875	0.024	0.000	0.000	21.819
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	0.000	12.875	0.000	12.875	7.045	1.875	0.024	0.000	0.000	21.819

(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>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

In FY19, the program segregated the SLEP 3 components (W-10 cable and fuze assembly) into separate efforts. Reference AGM-86B Service Life Extension Program (SLEP-3) modification number 860004 for prior years program information.

AF Long Range Planning required the service life of the ALCM to be extended through 2030. In order to satisfy the life extension requirement, several phases of the Service Life Extension Program (SLEP) were implemented, a proactive approach. Through studies and surveillance and analysis programs, various components were identified as candidates for replacement due to aging and obsolescence issues before they become fleet-wide problems. This modification executes SLEP Fuze Assembly (Impact Sensor) and will replace the existing fuze assembly. The fuze assembly will be manufactured by the Original Equipment Manufacturer (Boeing). 24 SLEP fuze assembly kits per year will be delivered to the depot for installation in conjunction with Analytical Condition Inspection (ACI) missiles. The remaining SLEP fuze assembly kits will be delivered to the organizational-level maintenance personnel for installation via Time Compliance Technical Order in conjunction with scheduled maintenance activities. Service life extension of this critical weapon is essential to meet Air Force Global Strike Command (AFGSC) and United States Strategic Command (USSTRATCOM) operational needs. No costs shown for kits being installed at the Depot (ACIs).

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

SLEP funds will continue to support AFGSC and USSTRATCOM requirements to keep the ALCM viable through 2030.

Milestone/Development Status

Engineering studies and analysis programs identified SLEP Fuze Assembly (Impact Sensor) component for replacement due to aging and obsolescence issues. Solutions to these aging and obsolescence issues were identified through engineering studies conducted by the Original Equipment Manufacturer (OEM).

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Exhibit P-3a, Individual Modification: PB 2020 Air Force										Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1					P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)					Modification Number / Title: 860107 / Fuze Assembly			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: AGM-86B				Modification Type: Service Life Extension				Related RDT&E PEs: 0101122F					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 2:</i> fuze assembly depot													
B Kits													
Recurring													
fuze assembly depot:EQUIPMENT Group B (Active)	- / -	- / -	0 / 0.000	48 / 3.306	- / -	48 / 3.306	24 / 1.538	24 / 1.851	- / -	- / -	- / -	96 / 6.695	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 0.000	- / 3.306	- / -	- / 3.306	- / 1.538	- / 1.851	- / -	- / -	- / -	- / 6.695	
<i>Subtotal: fuze assembly depot</i>	- / -	- / -	- / 0.000	- / 3.306	- / -	- / 3.306	- / 1.538	- / 1.851	- / -	- / -	- / -	- / 6.695	
<i>Modification Item 2 of 2:</i> fuze assembly field													
B Kits													
Recurring													
fuze assembly field:EQUIPMENT Group B (Active)	- / -	- / -	0 / 0.000	137 / 9.535	- / -	137 / 9.535	70 / 5.473	- / -	- / -	- / -	- / -	207 / 15.008	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 0.000	- / 9.535	- / -	- / 9.535	- / 5.473	- / -	- / -	- / -	- / -	- / 15.008	
<i>Subtotal: fuze assembly field</i>	- / -	- / -	- / 0.000	- / 9.535	- / -	- / 9.535	- / 5.473	- / -	- / -	- / -	- / -	- / 15.008	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	- / 0.000	- / 12.841	- / -	- / 12.841	- / 7.011	- / 1.851	- / -	- / -	- / -	- / 21.703	
Support (All Modification Items)													
PMA - Other Gov't Costs	- / -	- / -	- / -	- / 0.010	- / -	- / 0.010	- / 0.010	- / -	- / -	- / -	- / -	- / 0.020	
<i>Subtotal: Support</i>	- / -	- / -	- / -	- / 0.010	- / -	- / 0.010	- / 0.010	- / -	- / -	- / -	- / -	- / 0.020	
Installation													
<i>Modification Item 1 of 2:</i> fuze assembly depot													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	24 / 0.024	- / -	24 / 0.024	24 / 0.024	24 / 0.024	24 / 0.024	- / -	- / -	96 / 0.096	
<i>Subtotal: Installation</i>	- / -	- / -	- / -	24 / 0.024	- / -	24 / 0.024	24 / 0.024	24 / 0.024	24 / 0.024	- / -	- / -	96 / 0.096	
Total													
Total Cost (Procurement + Support + Installation)	-	-	0.000	12.875	0.000	12.875	7.045	1.875	0.024	0.000	0.000	21.819	

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Exhibit P-3a, Individual Modification: PB 2020 Air Force **Date:** February 2019

Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860107 / Fuze Assembly
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ID Code (A=Service Ready, B=Not Service Ready) : B **MDAP/MAIS Code:**

Modification Item 1 of 2: fuze assembly depot

Manufacturer Information

Manufacturer Name: Boeing Manufacturer Location: Heath, OH

Administrative Leadtime (in Months): 4 Production Leadtime (in Months): 4

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates			Apr 2020	Apr 2021	Apr 2022		
Delivery Dates			Aug 2020	Aug 2021	Aug 2022		

Installation Information

Method of Implementation: Depot

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	24 / 0.024	- / -	24 / 0.024	24 / 0.024	- / -	- / -	- / -	- / -	48 / 0.048
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.024	- / -	- / -	- / -	24 / 0.024
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.024	- / -	- / -	24 / 0.024
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	24 / 0.024	- / -	24 / 0.024	24 / 0.024	24 / 0.024	24 / 0.024	24 / 0.024	- / -	96 / 0.096

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	0	-	-	-	-	-	-	-	-	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	-	-	-	-	0	96
Out	0	-	-	-	-	-	-	-	-	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	-	-	-	-	0	96

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Exhibit P-3a, Individual Modification: PB 2020 Air Force						Date: February 2019	
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1			P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)			Modification Number / Title: 860107 / Fuze Assembly	
ID Code (A=Service Ready, B=Not Service Ready) : B				MDAP/MAIS Code:			
Modification Item 2 of 2: fuze assembly field							
Manufacturer Information							
Manufacturer Name: Boeing				Manufacturer Location: Heath, OH			
Administrative Leadtime (in Months): 4				Production Leadtime (in Months): 4			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates			Apr 2020	Apr 2021	Apr 2022		
Delivery Dates			Aug 2020	Aug 2021	Aug 2022		
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 207		

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860108 / Inertial Navigation Element (INE)

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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	13.405	0.000	13.405	12.207	12.017	12.083	0.000	108.900	158.612
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	0.000	13.405	0.000	13.405	12.207	12.017	12.083	0.000	108.900	158.612
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	0.000	13.405	0.000	13.405	12.207	12.017	12.083	0.000	108.900	158.612
<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>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program, P-3A Mod 860108, Inertial Navigation Element (INE), is a new start. AF Long Range Planning required the service life of the ALCM to be extended through 2030. In order to satisfy the life extension requirement, several phases of the Service Life Extension Program (SLEP) were implemented, a proactive approach. Through studies and surveillance and analysis programs, various components were identified as candidates for replacement due to aging and obsolescence issues before they become fleet-wide problems. This effort produces working engineering samples to verify and certify viability of manufacturing methodology. Verification will be established through scientific methods and analysis of testing results. Testing may include destructive methods. Up to 24 SLEP INE kits per year will be delivered to the depot for installation in conjunction with Analytical Condition Inspection (ACI) missiles. The remaining units kits will be delivered to the organizational-level maintenance units for installation via Time Compliance Technical Order (TCTO) in conjunction with scheduled maintenance activities.

This program is currently in Phase III to include delivery of working engineering samples, certification of production, and production of INE's equal to the function and reliability of "like new" devices.

This effort is critical to meet Air Force Global Strike Command (AFGSC) and United States Strategic Command (USSTRATCOM) operational needs. Installations are planned to begin in FY20.

Funds may be used to address emerging and short notice Diminishing Manufacturing and Material Shortage (DMSMS) issues.

SLEP funds will continue to support AFGSC and USSTRATCOM requirements to keep the ALCM viable through the 2030's.

Milestone/Development Status

FY20 begins production of INEs.

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Exhibit P-3a, Individual Modification: PB 2020 Air Force										Date: February 2019			
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1					P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)					Modification Number / Title: 860108 / Inertial Navigation Element (INE)			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: AGM-86B				Modification Type: Reliability & Maintainability				Related RDT&E PEs: 0101122F					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
RDT&E PE #													
0101122F	- / -	- / -	- / 4.875	- / 2.000	- / -	- / 2.000	- / -	- / -	- / 0.000	- / -	- / -	- / 6.875	
Procurement													
Modification Item 1 of 2: INE - Depot													
B Kits													
Recurring													
INE - Depot:EQUIPMENT Group B (Active)	- / -	- / -	- / -	24 / 10.724	- / -	24 / 10.724	24 / 7.324	24 / 7.210	24 / 7.250	- / -	216 / 65.700	312 / 98.208	
<i>Subtotal: Recurring</i>	- / -	- / -	- / -	- / 10.724	- / -	- / 10.724	- / 7.324	- / 7.210	- / 7.250	- / -	- / 65.700	- / 98.208	
<i>Subtotal: INE - Depot</i>	- / -	- / -	- / -	- / 10.724	- / -	- / 10.724	- / 7.324	- / 7.210	- / 7.250	- / -	- / 65.700	- / 98.208	
Modification Item 2 of 2: INE - org / intermediate													
B Kits													
Recurring													
INE - org / intermediate:EQUIPMENT Group B (Active)	- / -	- / -	- / -	6 / 2.681	- / -	6 / 2.681	16 / 4.883	16 / 4.807	16 / 4.833	- / -	144 / 43.200	198 / 60.404	
<i>Subtotal: Recurring</i>	- / -	- / -	- / -	- / 2.681	- / -	- / 2.681	- / 4.883	- / 4.807	- / 4.833	- / -	- / 43.200	- / 60.404	
<i>Subtotal: INE - org / intermediate</i>	- / -	- / -	- / -	- / 2.681	- / -	- / 2.681	- / 4.883	- / 4.807	- / 4.833	- / -	- / 43.200	- / 60.404	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	- / -	- / 13.405	- / -	- / 13.405	- / 12.207	- / 12.017	- / 12.083	- / -	- / 108.900	- / 158.612	
Installation													
Modification Item 1 of 2: INE - Depot													
INE - Depot	- / -	- / -	- / -	6 / 0.000	- / -	6 / 0.000	24 / 0.000	24 / 0.000	24 / 0.000	- / -	234 / 0.000	312 / 0.000	
<i>Subtotal: Installation</i>	- / -	- / -	- / -	6 / -	- / -	6 / -	24 / -	24 / -	24 / -	- / -	234 / -	312 / -	
Total													
Total Cost (Procurement + Support + Installation)	-	-	0.000	13.405	0.000	13.405	12.207	12.017	12.083	0.000	108.900	158.612	

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Exhibit P-3a, Individual Modification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)	Modification Number / Title: 860108 / Inertial Navigation Element (INE)

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Modification Item 1 of 2: INE - Depot

Manufacturer Information

Manufacturer Name: Northrop Grumman	Manufacturer Location: Salt Lake City, UT
Administrative Leadtime (in Months): 0	Production Leadtime (in Months): 6

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Jan 2019	Feb 2020	Feb 2021	Feb 2022	Feb 2023	
Delivery Dates		Jan 2019	Aug 2020	Aug 2021	Aug 2022	Aug 2023	

Installation Information

Method of Implementation: Depot

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	6 / 0.000	- / -	6 / 0.000	18 / 0.000	- / -	- / -	- / -	- / -	24 / 0.000
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.000	18 / 0.000	- / -	- / -	- / -	24 / 0.000
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.000	18 / 0.000	- / -	- / -	24 / 0.000
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.000	- / -	18 / 0.000	24 / 0.000
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	216 / 0.000	216 / 0.000
Total	- / -	- / -	- / -	6 / 0.000	- / -	6 / 0.000	24 / 0.000	24 / 0.000	24 / 0.000	- / -	234 / 0.000	312 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	0	-	-	-	-	-	-	-	-	-	-	-	6	6	6	6	6	6	6	6	6	6	6	6	6	-	-	-	-	234	312
Out	0	-	-	-	-	-	-	-	-	-	-	-	6	6	6	6	6	6	6	6	6	6	6	6	6	-	-	-	-	234	312

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Air Force						Date: February 2019	
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1			P-1 Line Item Number / Title: MALCBG / Air Launch Cruise Missile (ALCM)			Modification Number / Title: 860108 / Inertial Navigation Element (INE)	
ID Code (A=Service Ready, B=Not Service Ready) : B					MDAP/MAIS Code:		
Modification Item 2 of 2: INE - org / intermediate							
Manufacturer Information							
Manufacturer Name: Northrop Grumman				Manufacturer Location: Salt Lake City, UT			
Administrative Leadtime (<i>in Months</i>): 0				Production Leadtime (<i>in Months</i>): 6			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates			Feb 2020	Feb 2021	Feb 2022	Mar 2023	
Delivery Dates			Aug 2020	Aug 2021	Aug 2022	Sep 2023	
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 198		

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

Appropriation / Budget Activity / Budget Sub Activity:
3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV

P-1 Line Item Number / Title:
SDB000 / Small Diameter Bomb

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0207327F **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>)	31.283	14.086	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	45.369
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	31.283	14.086	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	45.369
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	31.283	14.086	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	45.369

(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:

GBU-39/B: Small Diameter Bomb I (SDB I) is a weapon system that provides fighter and bomber aircraft with a tactically significant standoff attack or direct attack/close air support capability from outside point defenses, against fixed/stationary targets. The SDB I weapon system consists of a 250-pound class weapon, a 4-place common carriage system, logistics support and mission planning module. The FY2018 modifications are to the bomb rack unit (BRU-61/A) carriages. This modification adds capability to operate on 270 volts direct current (VDC) aircraft power in addition to the current configuration of 115 volts alternating current (VAC) capability. This will reduce risk to F-35A integration of SDB I and provide future aircraft loadout options to the inventory carriages. It will also increase weapon loadout by 200% and provide risk reduction for future SDB II integration. The original procurement of BRU-61/As was 2,000. This effort will procure 245 dual power modification kits. The BRU-61/A carriage requirement document is the Combat Air Forces Operational Requirements Document 304-97-C-A for Miniature Munitions and Carriage System dated April 2005.

Funds may be used to resolve production Diminishing Manufacturing Sources (DMS)/Material Shortage (MS)/Obsolescence issues through studies, bridge buys, life of type buys, supplier/parts replacement and qualification activities to preserve future production capabilities and capacities.

Funding for this exhibit contained in PE 0207327F.

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:

Where applicable, justification for individual modifications is provided in the P-3A exhibits.

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

Appropriation / Budget Activity / Budget Sub Activity:
3020F: Missile Procurement, Air Force / BA 04: Spares and Repair Parts / BSA 10: Missile Spares and Repair Parts

P-1 Line Item Number / Title:
00098A-00099K / Missile Spares/Repair Parts

ID Code (A=Service Ready, B=Not Service Ready): **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	94.153	97.481	84.400	0.000	84.400	91.447	97.660	97.397	99.304	-	661.842
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	94.153	97.481	84.400	0.000	84.400	91.447	97.660	97.397	99.304	-	661.842
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	94.153	97.481	84.400	0.000	84.400	91.447	97.660	97.397	99.304	-	661.842

(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:

Missile Initial Spares (Budget Program 26) and Replenishment Spares (Budget Program 25)

Program Description: MISSILE INITIAL SPARES (Budget Program 26). Missile Initial Spares are required to fill the initial spare parts pipeline or inventory for all new ballistic and non-ballistic missile systems, including modifications, support equipment, and other production categories. Initial spares include peculiar repairable and consumable components, assemblies, and subassemblies that must be available for issue at all levels of supply in time to support and maintain newly fielded end items.

Initial spares are funded in the two program segments described below.

Working Capital Fund (WCF) Spares. Since FY94 most spares are purchased using obligation authority in the WCF. When the spares are delivered, this central procurement account reimburses the WCF. Types of spares in this program segment are Readiness Spares Packages, New Acquisition Spares, Modification Spares, Support Equipment, Other Production, and Consumables.

Exempt Spares. This program segment finances spares that are not purchased through the WCF. The budget authority is a direct cite on the contract. Types of spares in this program segment are Contractor Logistics Support, Simulators/Trainers, Classified Equipment, and Munitions.

Program Description: MISSILE REPLENISHMENT SPARES (Budget Program 25). The Missile Replenishment Spares program funds all ballistic and non-ballistic missile replenishment spares. The replenishment and repair spare parts are needed to support and maintain ballistic and non-ballistic missile systems. Replenishment spares include such items as rocket motors, cables, telemetry packages, and electronic components. Procurements will include spares with long production lead items.

The following Major Defense Acquisition Programs (MDAP) have funding in this line:

- AMRAAM, 185
- SDB II, 439
- AIM-9X Blk II, 442
- JASSM, 555

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Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 04: Spares and Repair Parts / BSA 10: Missile Spares and Repair Parts		P-1 Line Item Number / Title: 00098A-00099K / Missile Spares/Repair Parts
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

This program has associated Research Development Test and Evaluation funding in PEs 11120F, 11213F, 27161F, 11122F, and 27163F.

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.

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

Appropriation / Budget Activity / Budget Sub Activity:
3020F: Missile Procurement, Air Force / BA 04: Spares and Repair Parts / BSA 10: Missile Spares and Repair Parts

P-1 Line Item Number / Title:
00098A-00099K / Missile Spares/Repair Parts

ID Code (A=Service Ready, B=Not Service Ready): **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-18	Missile Spares/Repair Parts			185 185 439	- / -	- / 94.153	- / 97.481	- / 84.400	- / 0.000	- / 84.400
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 94.153	- / 97.481	- / 84.400	- / 0.000	- / 84.400

Title represents the P-18 Title for Spares.
 Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 AIM-9/AIM-9X: The Missile Initial Spares program funds depot level post warranty repairs and procures initial spares for all variants. These spares are essential for repairs that do not have parts available.

Air Launched Cruise Missile (ALCM): The Missile Initial Spares program (319k) BP-26 funding in FY-2020 procures modification spare hardware supporting multiple Service Life Extension Program (SLEP) modifications to ensure that the AGM-86B Air Launched Cruise Missile (ALCM) nuclear cruise missile remains viable through 2030 when the Long Range Stand Off (LRSO) missile is fielded. On-going ALCM modifications include SLEP 1(Air Cycle Machine and Linear Actuators), SLEP 2 (warhead arming device, guided missile flight controller, and rotary switch), SLEP 3 (fuze assembly impact sensor and W-10 cable), and the Inertial Navigation Element, as well as on-going SLEP programs for ALCM support equipment.

AMRAAM: The Missile Initial Spares program funds depot level post warranty repairs.

Joint Air-Surface Standoff Missile: The Missile Initial Spares program funds are required to fill the initial spare parts pipeline and replenishment/repair spare parts under the contractor logistic support program. These parts include items such as cables, telemetry packages, and electronic components to support and maintain fielded end items. These spares meet Air Combat Command's bed-down plans for JASSM.

MM III Modifications: The Missile Initial and Replenishment Spares program funds all Minuteman III spares required to support and maintain the Minuteman III missile system to include support equipment. Spares support the major sub-systems of the weapon system, comprised of the Re-entry System, Re-entry Vehicle, Guidance System, Propulsion System, Launch Facility and Launch Control Center. FY20 replenishment spares funding will specifically procure items such as batteries, ordnance, cables, antenna kits, Mod 7 wafers, telemetry packages, torque motors, and other electronic components supporting weapon system operations and operational test launches. FY20 initial replenishment spares will procure initial spare parts for the Payload Transporter Replacement program.

AIM-9 Sidewinder/AIM-9X: The Missile Replenishment Spares program funds repairs for CATMs and AURs. These repairs include items such as live and inert batteries, Control Actuation System (CAS) and Inert Measurement Units.

AGM-86 Air Launched Cruise Missile (ALCM): The Missile Replenishment Spares program funds support and maintain the ALCM service life extension program components. Spares funding for ALCM currently includes the fuze assembly and related parts.

AGM-88A (HARM): The Missile Replenishment Spares program funds all HARM replenishment spares parts are needed to support and maintain the HARM weapon system. The Missile Replenishment Spares program procures parts required for depot level repairs that are necessary to sustain HARM. This includes items such as wing dampers, telemetry kits, batteries and fuzes.

AIM-120 Advanced Medium Range Air to Air Missile: The Missile Replenishment Spares program funds AMRAAM field unit repairs and intermediate level repairs on Captive Air Training Missiles (CATM). These repairs include such items as filter rectifiers, harness assemblies, wings and fins.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 04: Spares and Repair Parts / BSA 10: Missile Spares and Repair Parts		P-1 Line Item Number / Title: 00098A-00099K / Missile Spares/Repair Parts
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>AGM-65D Maverick: The Missile Replenishment Spares program procures telemetry kits for annual reliability testing to ensure inventory health and warfighter readiness. These funds also support limited procurement of obsolete components in launcher assemblies, missile guidance sections and test support equipment essential to maintain the Maverick Weapon System.</p> <p>Hellfire: The Missile Replenishment Spares funding supports repair and replacement of Hellfire parts not covered by warranty.</p> <p>Small Diameter Bomb I (SDB I): The Missile Replenishment Spares program supports procurement of flight termination and telemetry kits to covert GBU-39/B's into SDB I Guided Test Vehicles for the Weapon System Evaluation Program (WSEP).</p>		

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Exhibit P-18, Initial and Replenishment Spare and Repair Parts Justification: PB 2020 Air Force					Date: February 2019		
Appropriation / Budget Activity / Budget Sub Activity:		P-1 Line Item Number / Title:			Title:		
3020F / 04 / 10		00098A-00099K / Missile Spares/Repair Parts			Missile Spares/Repair Parts		
End Item Line Item Number / Name [MDAP/MAIS]	Prior Years (\$ M)	FY 2018 (\$ M)	FY 2019 (\$ M)	FY 2020 Base (\$ M)	FY 2020 OCO (\$ M)	FY 2020 Total (\$ M)	
Initial							
BA 04 - Spares and Repair Parts							
M09BA1 / AIM-9 Sidewinder	-	3.479	2.455	0.256	0.000	0.256	
MALCBG / Air Launch Cruise Missile (ALCM)	-	0.304	0.308	0.119	0.000	0.119	
MAMRA0 / AMRAAM [185]	-	2.067	2.023	0.529	0.000	0.529	
JASSM0 / JOINT AIR-SURFACE STANDOFF MISSILE	-	0.424	0.425	0.434	0.000	0.434	
M30MLG / MM III MODIFICATIONS	-	3.136	8.372	0.338	0.000	0.338	
M09HAI / Sidewinder (AIM-9X)	-	2.241	1.800	0.234	0.000	0.234	
Subtotal: Initial	-	11.651	15.383	1.910	0.000	1.910	
Replenishment							
BA 04 - Spares and Repair Parts							
M09BA1 / AIM-9 Sidewinder	-	5.541	5.535	5.636	0.000	5.636	
M09HAI / AIM-9X	-	5.681	5.713	5.818	0.000	5.818	
MALCBG / AGM-86 Air Launched Cruise Missile (ALCM)	-	2.942	2.280	2.321	0.000	2.321	
M30MLG / LGM-30 MINUTEMAN (MM III)	-	47.065	50.201	50.963	0.000	50.963	
M88AAG / AGM-88A Tactical AGM Missile (HARM)	-	8.799	7.675	8.258	0.000	8.258	
MAMRA0 / AIM-120 Advanced Medium Range Air to Air Missile (AMRAAM) [185]	-	0.834	0.839	0.854	0.000	0.854	
M65DAG / AGM-65D Maverick	-	1.537	1.545	1.575	0.000	1.575	
PRDTA2 / Predator Hellfire Missile	-	0.298	0.298	0.305	0.000	0.305	
SDB000 / Small Diameter Bomb [439]	-	9.805	8.012	6.760	0.000	6.760	
Subtotal: Replenishment	-	82.502	82.098	82.490	0.000	82.490	
Total Cost (Initial + Replenishment)	-	94.153	97.481	84.400	0.000	84.400	

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

Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 05: Other Support / BSA 4: Special Programs	P-1 Line Item Number / Title: MSPPRG / Special Update Programs
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	-	44.917	188.539	144.553	-	144.553	176.782	323.096	885.007	962.019	-	2,724.913
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	44.917	188.539	144.553	-	144.553	176.782	323.096	885.007	962.019	-	2,724.913
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	44.917	188.539	144.553	-	144.553	176.782	323.096	885.007	962.019	-	2,724.913

(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:

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

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:

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

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