Department of Defense
Fiscal Year (FY) 2021 Budget Estimates

February 2020

Navy

Justification Book Volume 1 of 1

Weapons Procurement, Navy

The estimated cost of this report for the Department of the Navy (DON) is $74,064.

The estimated total cost for supporting the DON budget justification material is approximately $2,970,459 for the 2020 fiscal year. This includes $82,977 in supplies and $2,887,482 in labor.

Table of Volumes

Navy..... Volume 1

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Volume 1 Table of Contents

Introduction and Explanation of Contents.....Volume 1 - v

Comptroller Exhibit P-1.....Volume 1 - vii

Line Item Table of Contents (by Appropriation then Line Number)..... Volume 1 - xxix

Line Item Table of Contents (Alphabetically by Line Item Title).....Volume 1 - xxxiii

Exhibit P-40s.....Volume 1 - 1

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Weapons Procurement, Navy

For construction, procurement, production, modification, and modernization of missiles, torpedoes, other weapons, and related support equipment including spare parts, and accessories therefore; expansion of public and private plants, including the land necessary therefore, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway, $4,890,567,000 to remain available for obligation until September 30, 2023.

FY 2021 Overseas Contingency Operations funding can be separated into the following categories:

- OCO for Direct War Costs ($5,572,000): 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.

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Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted
Weapons Procurement, Navy	3,710,857	4,017,470		116,429
Total Department of the Navy	3,710,857	4,017,470		116,429

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2020 Total Enacted (Base+Emerg+ OCO)	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs
Weapons Procurement, Navy	4,133,899	4,884,995		5,572
Total Department of the Navy	4,133,899	4,884,995		5,572

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2021 Total OCO	FY 2021 Total (Base + OCO)
Weapons Procurement, Navy	5,572	4,890,567
Total Department of the Navy	5,572	4,890,567

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Weapons Procurement, Navy

Budget Activity	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted
01. Ballistic Missiles	1,055,009	1,172,878		
02. Other Missiles	1,962,698	2,161,732		116,429
03. Torpedoes and Related Equipment	341,273	375,125		
04. Other Weapons	224,789	182,397		
06. Spares and Repair Parts	127,088	125,338		
Total Weapons Procurement, Navy	3,710,857	4,017,470		116,429

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Weapons Procurement, Navy

Budget Activity	FY 2020 Total Enacted (Base+Emerg+ OCO)	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs
01. Ballistic Missiles	1,172,878	1,181,112		
02. Other Missiles	2,278,161	2,776,259		5,572
03. Torpedoes and Related Equipment	375,125	583,723		
04. Other Weapons	182,397	184,323		
06. Spares and Repair Parts	125,338	159,578		
Total Weapons Procurement, Navy	4,133,899	4,884,995		5,572

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Weapons Procurement, Navy

Budget Activity	FY 2021 Total OCO	FY 2021 Total (Base + OCO)
01. Ballistic Missiles		1,181,112
02. Other Missiles	5,572	2,781,831
03. Torpedoes and Related Equipment		583,723
04. Other Weapons		184,323
06. Spares and Repair Parts		159,578
Total Weapons Procurement, Navy	5,572	4,890,567

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
	Budget Activity 01: Ballistic Missiles										
	Modification of Missiles										
1	Trident II Mods			1,048,011		1,165,736					U
	Support Equipment & Facilities										
2	Missile Industrial Facilities	A		6,998		7,142					U
	Total Ballistic Missiles			1,055,009		1,172,878					
	Budget Activity 02: Other Missiles										
	Strategic Missiles										
3	Tomahawk	A		98,570	90	386,157					U
	Tactical Missiles										
4	AMRAAM	A	126	188,441	192	211,827					U
5	Sidewinder	A	311	121,481	277	115,039			88	34,200	U
6	JNT Standoff Weapon (JSOW)	B		1,330							U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
	Budget Activity 01: Ballistic Missiles										
	Modification of Missiles										
1	Trident II Mods			1,165,736		1,173,837					U
	Support Equipment & Facilities										
2	Missile Industrial Facilities	A		7,142		7,275					U
	Total Ballistic Missiles			1,172,878		1,181,112					
	Budget Activity 02: Other Missiles										
	Strategic Missiles										
3	Tomahawk	A	90	386,157	155	277,694					U
	Tactical Missiles										
4	AMRAAM	A	192	211,827	325	326,952					U
5	Sidewinder	A	365	149,239	270	126,485					U
6	JNT Standoff Weapon (JSOW)	B									U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
	Budget Activity 01: Ballistic Missiles						
	Modification of Missiles						
1	Trident II Mods					1,173,837	U
	Support Equipment & Facilities						
2	Missile Industrial Facilities	A				7,275	U
	Total Ballistic Missiles					1,181,112	
	Budget Activity 02: Other Missiles						
	Strategic Missiles						
3	Tomahawk	A			155	277,694	U
	Tactical Missiles						
4	AMRAAM	A			325	326,952	U
5	Sidewinder	A			270	126,485	U
6	JNT Standoff Weapon (JSOW)	B					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
7	Standard Missile	A	125	(490,210)	125	(488,312)					U
	Less: Advance Procurement (PY)					(-83,789)					U
				490,210		404,523					
8	Standard Missile										
	Advance Procurement (CY)			125,683		96,085					U
	C (FY 2019 for FY 2020) (M)			(83,789)							
	C (FY 2019 for FY 2021) (M)			(25,137)							
	C (FY 2019 for FY 2022) (M)			(16,757)							
	C (FY 2020 for FY 2021) (M)					(58,486)					
	C (FY 2020 for FY 2022) (M)					(20,888)					
	C (FY 2020 for FY 2023) (M)					(16,711)					
	C (FY 2021 for FY 2022) (M)										
	C (FY 2021 for FY 2023) (M)										
9	Small Diameter Bomb II		750	88,772	512	108,452					U
10	Ram	A	108	96,221	120	106,765					U
11	Joint Air Ground Missile (JAGM)	A	75	24,109					320	75,729	U
12	Hellfire	A	23	1,530	29	1,525					U
13	Stand off Precision Guided Munitions (SOPGM)	A	76	11,036							U
14	Aerial Targets	A		133,937		144,061				6,500	U
15	Drones And Decoys	A									U
16	Other Missile Support	A		3,318		3,388					U
17	LRASM	A	33	119,790	17	72,544					U
18	LCS OTH Missile	A	8	19,698	18	38,137					U
	Modification of Missiles										
19	Tomahawk Mods	A									U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
7	Standard Missile	A	125	(488,312)	125	(539,829)					U
	Less: Advance Procurement (PY)			(-83,789)		(-83,623)					U
				404,523		456,206					
8	Standard Missile										
	Advance Procurement (CY)			96,085		66,716					U
	C (FY 2019 for FY 2020) (M)										
	C (FY 2019 for FY 2021) (M)										
	C (FY 2019 for FY 2022) (M)										
	C (FY 2020 for FY 2021) (M)			(58,486)							
	C (FY 2020 for FY 2022) (M)			(20,888)							
	C (FY 2020 for FY 2023) (M)			(16,711)							
	C (FY 2021 for FY 2022) (M)					(45,867)					
	C (FY 2021 for FY 2023) (M)					(20,849)					
9	Small Diameter Bomb II		512	108,452	357	78,867					U
10	Ram	A	120	106,765	100	90,533					U
11	Joint Air Ground Missile (JAGM)	A	320	75,729	203	49,386					U
12	Hellfire	A	29	1,525					115	5,572	U
13	Stand off Precision Guided Munitions (SOPGM)	A									U
14	Aerial Targets	A		150,561		174,336					U
15	Drones And Decoys	A			68	41,256					U
16	Other Missile Support	A		3,388		3,501					U
17	LRASM	A	17	72,544	48	168,845					U
18	LCS OTH Missile	A	18	38,137	15	32,910					U
	Modification of Missiles										
19	Tomahawk Mods	A				164,915					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
7	Standard Missile	A			125	(539,829)	U
	Less: Advance Procurement (PY)					(-83,623)	U
						456,206	
8	Standard Missile						
	Advance Procurement (CY)					66,716	U
	C (FY 2019 for FY 2020) (M)						
	C (FY 2019 for FY 2021) (M)						
	C (FY 2019 for FY 2022) (M)						
	C (FY 2020 for FY 2021) (M)						
	C (FY 2020 for FY 2022) (M)						
	C (FY 2020 for FY 2023) (M)						
	C (FY 2021 for FY 2022) (M)					(45,867)	
	C (FY 2021 for FY 2023) (M)					(20,849)	
9	Small Diameter Bomb II				357	78,867	U
10	Ram	A			100	90,533	U
11	Joint Air Ground Missile (JAGM)	A			203	49,386	U
12	Hellfire	A	115	5,572	115	5,572	U
13	Stand off Precision Guided Munitions (SOPGM)	A					U
14	Aerial Targets	A				174,336	U
15	Drones And Decoys	A			68	41,256	U
16	Other Missile Support	A				3,501	U
17	LRASM	A			48	168,845	U
18	LCS OTH Missile	A			15	32,910	U
	Modification of Missiles						
19	Tomahawk Mods	A				164,915	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
20	ESSM	A	45	97,727	50	102,601					U
21	Harpoon Mods	A		26,840		23,585					U
22	Harm Mods	A		179,885		183,740					U
23	Standard Missiles Mods	A				2,500					U
	Support Equipment & Facilities										
24	Weapons Industrial Facilities	A		12,006		12,006					U
25	Fleet Satellite Comm Follow-On	A		60,279		63,080					U
26	DON PGM Transition Support	A		-173							U
	Ordnance Support Equipment										
27	Ordnance Support Equipment	A		62,008		85,717					U
	Total Other Missiles			1,962,698		2,161,732				116,429	
	Budget Activity 03: Torpedoes and Related Equipment										
	Torpedoes and Related Equip										
28	SSTD	A		6,353		5,561					U
29	MK-48 Torpedo	A	53	103,616	71	130,000					U
30	ASW Targets	A		12,323		15,095					U
	Mod of Torpedoes and Related Equip										
31	MK-54 Torpedo Mods	A		83,825		103,860					U
32	MK-48 Torpedo ADCAP Mods	A		39,997		39,508					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
20	ESSM	A	50	102,601	120	215,375					U
21	Harpoon Mods	A		23,585							U
22	Harm Mods	A		183,740	24	147,572					U
23	Standard Missiles Mods	A		2,500		83,654					U
	Support Equipment & Facilities										
24	Weapons Industrial Facilities	A		12,006		1,996					U
25	Fleet Satellite Comm Follow-On	A		63,080		53,401					U
26	DON PGM Transition Support	A									U
	Ordnance Support Equipment										
27	Ordnance Support Equipment	A		85,717		215,659					U
	Total Other Missiles			2,278,161		2,776,259				5,572	
	Budget Activity 03: Torpedoes and Related Equipment										
	Torpedoes and Related Equip										
28	SSTD	A		5,561		5,811					U
29	MK-48 Torpedo	A	71	130,000	110	284,901					U
30	ASW Targets	A		15,095		13,833					U
	Mod of Torpedoes and Related Equip										
31	MK-54 Torpedo Mods	A		103,860		110,286					U
32	MK-48 Torpedo ADCAP Mods	A		39,508		57,214					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
20	ESSM	A			120	215,375	U
21	Harpoon Mods	A					U
22	Harm Mods	A			24	147,572	U
23	Standard Missiles Mods	A				83,654	U
	Support Equipment & Facilities						
24	Weapons Industrial Facilities	A				1,996	U
25	Fleet Satellite Comm Follow-On	A				53,401	U
26	DON PGM Transition Support	A					U
	Ordnance Support Equipment						
27	Ordnance Support Equipment	A				215,659	U
Total Other Missiles				5,572		2,781,831	
Budget Activity 03: Torpedoes and Related Equipment							
	Torpedoes and Related Equip						
28	SSTD	A				5,811	U
29	MK-48 Torpedo	A			110	284,901	U
30	ASW Targets	A				13,833	U
	Mod of Torpedoes and Related Equip						
31	MK-54 Torpedo Mods	A				110,286	U
32	MK-48 Torpedo ADCAP Mods	A				57,214	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
33	Maritime Mines	B		9,733		5,183					U
	Support Equipment										
34	Torpedo Support Equipment	A		77,828		68,225					U
35	ASW Range Support	A		3,872		3,890					U
	Destination Transportation										
36	First Destination Transportation	A		3,726		3,803					U
	Total Torpedoes and Related Equipment			341,273		375,125					
	Budget Activity 04: Other Weapons										
	Guns and Gun Mounts										
37	Small Arms and Weapons	A		16,607		13,607					U
	Modification of Guns and Gun Mounts										
38	CIWS Mods	A		63,318		44,126					U
39	Coast Guard Weapons	A		40,823		43,927					U
40	Gun Mount Mods	A		74,633		62,579					U
41	LCS Module Weapons	B	90	11,350	90	10,998					U
42	Airborne Mine Neutralization Systems	A		18,024		7,160					U
	Other										
43	Cancelled Account Adjustments	A		9							U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
33	Maritime Mines	B		5,183		5,832					U
	Support Equipment										
34	Torpedo Support Equipment	A		68,225		97,581					U
35	ASW Range Support	A		3,890		4,159					U
	Destination Transportation										
36	First Destination Transportation	A		3,803		4,106					U
	Total Torpedoes and Related Equipment			375,125		583,723					
	Budget Activity 04: Other Weapons										
	Guns and Gun Mounts										
37	Small Arms and Weapons	A		13,607		16,030					U
	Modification of Guns and Gun Mounts										
38	CIWS Mods	A		44,126		37,147					U
39	Coast Guard Weapons	A		43,927		45,804					U
40	Gun Mount Mods	A		62,579		74,427					U
41	LCS Module Weapons	B	90	10,998	32	4,253					U
42	Airborne Mine Neutralization Systems	A		7,160		6,662					U
	Other										
43	Cancelled Account Adjustments	A									U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
33	Maritime Mines	B				5,832	U
	Support Equipment						
34	Torpedo Support Equipment	A				97,581	U
35	ASW Range Support	A				4,159	U
	Destination Transportation						
36	First Destination Transportation	A				4,106	U
	Total Torpedoes and Related Equipment					583,723	
	Budget Activity 04: Other Weapons						
	Guns and Gun Mounts						
37	Small Arms and Weapons	A				16,030	U
	Modification of Guns and Gun Mounts						
38	CIWS Mods	A				37,147	U
39	Coast Guard Weapons	A				45,804	U
40	Gun Mount Mods	A				74,427	U
41	LCS Module Weapons	B			32	4,253	U
42	Airborne Mine Neutralization Systems	A				6,662	U
	Other						
43	Cancelled Account Adjustments	A					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
44	Judgment Fund	A		25							U
	Total Other Weapons			224,789		182,397					
	Budget Activity 06: Spares and Repair Parts										
	Spares and Repair Parts										
45	Spares and Repair Parts	A		127,088		125,338					U
	Total Spares and Repair Parts			127,088		125,338					
	Total Weapons Procurement, Navy			3,710,857		4,017,470				116,429	

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
44	Judgment Fund	A									U
	Total Other Weapons			182,397		184,323					
	Budget Activity 06: Spares and Repair Parts										
	Spares and Repair Parts										
45	Spares and Repair Parts	A		125,338		159,578					U
	Total Spares and Repair Parts			125,338		159,578					
	Total Weapons Procurement, Navy			4,133,899		4,884,995				5,572	

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1507N Weapons Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
44	Judgment Fund	A					U
	Total Other Weapons					184,323	
	Budget Activity 06: Spares and Repair Parts						
	Spares and Repair Parts						
45	Spares and Repair Parts	A				159,578	U
	Total Spares and Repair Parts					159,578	
	Total Weapons Procurement, Navy			5,572		4,890,567	

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

Appropriation 1507N: Weapons Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
1	01	02	1250	TRIDENT II Mods	Volume 1 - 1
2	01	03	1350	Missile Industrial Facilities	Volume 1 - 31

Appropriation 1507N: Weapons Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
3	02	01	2101	Tomahawk	Volume 1 - 35
4	02	02	2206	AMRAAM	Volume 1 - 53
5	02	02	2209	Sidewinder	Volume 1 - 65
6	02	02	2230	JNT Standoff Weapon (JSOW)	Volume 1 - 87
7	02	02	2234	Standard Missile	Volume 1 - 91
8	02	02	2234	Standard Missile, Advance Procurement	Volume 1 - 105
9	02	02	2238	Small Diameter Bomb II (SDB II)	Volume 1 - 109
10	02	02	2242	Rolling Airframe Missile (RAM)	Volume 1 - 119

Appropriation 1507N: Weapons Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
11	02	02	2248	Joint Air Ground Missile (JAGM)	Volume 1 - 145
12	02	02	2254	Hellfire	Volume 1 - 155
13	02	02	2264	Stand Off Precision Guided Munitions (SOPGM)	Volume 1 - 165
14	02	02	2280	Aerial Targets	Volume 1 - 171
15	02	02	2285	Drones and Decoys	Volume 1 - 197
16	02	02	2290	Other Missile Support	Volume 1 - 203
17	02	02	2291	LRASM	Volume 1 - 207
18	02	02	2292	LCS OTH Missile	Volume 1 - 217
19	02	03	2301	Tomahawk Mods	Volume 1 - 227
20	02	03	2307	Evolved Sea Sparrow Missile (ESSM)	Volume 1 - 241
21	02	03	2326	Harpoon Mods	Volume 1 - 257
22	02	03	2327	HARM Mods	Volume 1 - 263
23	02	03	2356	Standard Missiles Mods	Volume 1 - 271
24	02	04	2420	Weapons Industrial Facilities	Volume 1 - 283
25	02	04	2433	Fleet Satellite Comm Follow-On	Volume 1 - 287
27	02	05	2500	Ordnance Support Equipment	Volume 1 - 297

Appropriation 1507N: Weapons Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
28	03	01	3113	Surface Ship Torpedo Def (SSTD)	Volume 1 - 301
29	03	01	3117	MK-48 Torpedo	Volume 1 - 307
30	03	01	3141	ASW Targets	Volume 1 - 321
31	03	02	3215	MK-54 Torpedo Mods	Volume 1 - 331
32	03	02	3225	MK-48 Torpedo ADCAP Mods	Volume 1 - 349
33	03	02	3231	Maritime Mines	Volume 1 - 365
34	03	03	3301	Torpedo Support Equipment	Volume 1 - 371
35	03	03	3302	ASW Range Support	Volume 1 - 409
36	03	04	2410	First Destination Transportation	Volume 1 - 413

Appropriation 1507N: Weapons Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
37	04	01	4129	Small Arms and Weapons	Volume 1 - 417
38	04	02	4205	Close-In Wpns Sys (CIWS) Mods	Volume 1 - 435

Appropriation 1507N: Weapons Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
39	04	02	4206	Coast Guard Weapons	Volume 1 - 445
40	04	02	4217	Gun Mount Mods	Volume 1 - 459
41	04	02	4221	LCS Module Weapons	Volume 1 - 471
42	04	02	4225	Airborne Mine Neutralization Systems	Volume 1 - 479

Appropriation 1507N: Weapons Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
45	06	01	6120	Spares and Repair Parts	Volume 1 - 491

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

Line Item Title	Line Item Number	Line #	BA	BSA	Page
AMRAAM	2206	4	02	02	Volume 1 - 53
ASW Range Support	3302	35	03	03	Volume 1 - 409
ASW Targets	3141	30	03	01	Volume 1 - 321
Aerial Targets	2280	14	02	02	Volume 1 - 171
Airborne Mine Neutralization Systems	4225	42	04	02	Volume 1 - 479
Close-In Wpns Sys (CIWS) Mods	4205	38	04	02	Volume 1 - 435
Coast Guard Weapons	4206	39	04	02	Volume 1 - 445
Drones and Decoys	2285	15	02	02	Volume 1 - 197
Evolved Sea Sparrow Missile (ESSM)	2307	20	02	03	Volume 1 - 241
First Destination Transportation	2410	36	03	04	Volume 1 - 413
Fleet Satellite Comm Follow-On	2433	25	02	04	Volume 1 - 287
Gun Mount Mods	4217	40	04	02	Volume 1 - 459
HARM Mods	2327	22	02	03	Volume 1 - 263
Harpoon Mods	2326	21	02	03	Volume 1 - 257
Hellfire	2254	12	02	02	Volume 1 - 155
JNT Standoff Weapon (JSOW)	2230	6	02	02	Volume 1 - 87
Joint Air Ground Missile (JAGM)	2248	11	02	02	Volume 1 - 145

Line Item Title	Line Item Number	Line #	BA	BSA	Page
LCS Module Weapons	4221	41	04	02	Volume 1 - 471
LCS OTH Missile	2292	18	02	02	Volume 1 - 217
LRASM	2291	17	02	02	Volume 1 - 207
MK-48 Torpedo	3117	29	03	01	Volume 1 - 307
MK-48 Torpedo ADCAP Mods	3225	32	03	02	Volume 1 - 349
MK-54 Torpedo Mods	3215	31	03	02	Volume 1 - 331
Maritime Mines	3231	33	03	02	Volume 1 - 365
Missile Industrial Facilities	1350	2	01	03	Volume 1 - 31
Ordnance Support Equipment	2500	27	02	05	Volume 1 - 297
Other Missile Support	2290	16	02	02	Volume 1 - 203
Rolling Airframe Missile (RAM)	2242	10	02	02	Volume 1 - 119
Sidewinder	2209	5	02	02	Volume 1 - 65
Small Arms and Weapons	4129	37	04	01	Volume 1 - 417
Small Diameter Bomb II (SDB II)	2238	9	02	02	Volume 1 - 109
Spares and Repair Parts	6120	45	06	01	Volume 1 - 491
Stand Off Precision Guided Munitions (SOPGM)	2264	13	02	02	Volume 1 - 165
Standard Missile	2234	7	02	02	Volume 1 - 91
Standard Missile, Advance Procurement	2234	8	02	02	Volume 1 - 105
Standard Missiles Mods	2356	23	02	03	Volume 1 - 271
Surface Ship Torpedo Def (SSTD)	3113	28	03	01	Volume 1 - 301

Line Item Title	Line Item Number	Line #	BA	BSA	Page
TRIDENT II Mods	1250	1	01	02	Volume 1 - 1
Tomahawk	2101	3	02	01	Volume 1 - 35
Tomahawk Mods	2301	19	02	03	Volume 1 - 227
Torpedo Support Equipment	3301	34	03	03	Volume 1 - 371
Weapons Industrial Facilities	2420	24	02	04	Volume 1 - 283

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 01: Ballistic Missiles / BSA 2: Modification of Missiles	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603561N, 06030570N, 09012111N, 0101221N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	8,562.838	1,048.011	1,165.736	1,173.837	0.000	1,173.837	1,159.348	1,187.041	1,247.575	1,291.194	2,176.384	19,011.964
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	8,562.838	1,048.011	1,165.736	1,173.837	0.000	1,173.837	1,159.348	1,187.041	1,247.575	1,291.194	2,176.384	19,011.964
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**8,562.838**	**1,048.011**	**1,165.736**	**1,173.837**	**0.000**	**1,173.837**	**1,159.348**	**1,187.041**	**1,247.575**	**1,291.194**	**2,176.384**	**19,011.964**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The TRIDENT II (D5) missiles will be carried on OHIO Class Fleet Ballistic Missile Submarines through 2042 and will be the initial payload for the COLUMBIA Class Fleet Ballistic Missile Submarines. The D5 Life Extension (D5LE) program will ensure that the United States continues to maintain a highly survivable strategic deterrent well into the 21st century. The TRIDENT II missile (1) enhances fleet ballistic missile submarine survivability as it increases the sea launched ballistic missile range at full payload to exploit the total patrol area available to the TRIDENT submarine, (2) minimizes total weapon system costs as it has increased the sea launched ballistic missile payload to the level permitted by the size of the TRIDENT submarine launch tube, thereby allowing mission capability to be achieved with fewer submarines, and (3) has added an efficient hard target kill capability to the sea launched ballistic missiles.

D5 Life Extension Costs Include:

Joint Fuze Sustainment: Includes the procurement and assembly of the Arming Fuzing & Firing (AF&F) kits in support of the National Defense Strategy.

Production Support: Funding supports D5 Life Extension (D5LE) system integration, D5LE tooling and test equipment, D5LE Flight Test Instrumentation and Analysis, support for the new Test Missile Kits (TMK's), and D5LE end of production costs.

Guidance Hardware: Includes procurement of subcomponents necessary for a complete Guidance System which consists of an Inertial Measurement Unit (IMU) and Electronics Assembly (EA). Within the IMU and EA there are numerous sub-components which are included in this cost element including Guidance Circuit Card Assemblies (CCA), Guidance Accelerometer Sensors (PIGA), Interferometric Fiber Optic Gyros (IFOG), and associated production support.

Fleet Return Missile Electronic Strategic Systems Programs Alterations (SPALT) Kits: Includes procurement of the four Missile Electronics Packages and associated production support in order to extend the life of the D5 Missile to align with the OHIO Class life.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 01: Ballistic Missiles / BSA 2: Modification of Missiles	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603561N, 06030570N, 09012111N, 0101221N
Line Item MDAP/MAIS Code: N/A		

Operating and Support Costs Include:

Warhead Components: Includes production of the W76-1/Mk4A Reentry Body assembly and associated support equipment including Reentry Body (RB) cabling and Reentry Body Shells and supports the efforts required to produce a low yield variant (76-2).

The Shape Stable Nose Tip (SSNT) Program: The Mk4B SSNT (formerly referenced as Mk4A SSNT) effort will convert RB forward shell assemblies (FSA's) from legacy carbon composite nose tips to SSNT's in order to provide more consistent and predictable flight performance characteristics of the weapon system.

Tooling, Test/Support Equipment: Includes the refresh and/or replacement of aging Test/Evaluation equipment experiencing obsolescence.

Containers: Includes procurement of shipping containers for post DD250 D5 Missile components, test instrumentation, and Mk4/Mk5 Reentry Bodies.

Systems integration/planning: Provides for system component management and integration as well as master schedule oversight and planning.

Supportability Modifications/SPALT Insertion: Provides for installation costs for missile Strategic Program Alterations (SPALT's), SPALTS are converting D5 missiles to D5LE missiles. These costs also fund missile processing efforts that include the hands-on and hands-off support needed to DD250 missiles. Support includes radiographic inspection, non-missile production related tasks for mechanics, technicians, production planners and controllers, and missile system engineers.

End of Production Missile and Guidance Costs: Provides for end of production spares as well as costs associated with shutting down production lines.

Solid Rocket Motor's (SRM's) and Post Boost Control Systems (PBCS's): Includes procurement of SRM's, PBCS's, and all associated costs including production requalification, HMX procurement, tooling, railcar support and Production Evaluation Testing and Static Firing.

Production Support/Missile Hardware: First Stage Thrust Vector Control Gas Generators (which include Servoactuators and Gas Hydraulic Assemblies).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 01: Ballistic Missiles / BSA 2: Modification of Missiles	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603561N, 06030570N, 09012111N, 0101221N
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / TRIDENT II Mods - D5 Life Extension	P-5a, P-21		178	- / 3,704.277	- / 567.801	- / 647.522	- / 602.907	- / 0.000	- / 602.907
P-5	2 / TRIDENT II Mods -Operating and Support Costs	P-5a, P-21			- / 4,858.561	- / 480.210	- / 518.214	- / 570.930	- / 0.000	- / 570.930
P-40	**Total Gross/Weapon System Cost**				**- / 8,562.838**	**- / 1,048.011**	**- / 1,165.736**	**- / 1,173.837**	**- / 0.000**	**- / 1,173.837**

*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:
Funding in the TRIDENT II Mods line is required to continue the procurement of TRIDENT II missiles and currently supports the life-extension of the D5 missile.

TRIDENT II MODS - D5 Life Extension Program P-5:

The FY 2021 request of $602.907 million for the D5 Life Extension (D5LE) Program supports the production of the redesigned guidance system and missile electronics packages, which must be replaced to support the extended service life of the Ohio Class Submarines. FY 2021 funding procures missile electronic and guidance SPALT kits as well as other critical components required to support the extended SSBN hull life for a 14 SSBN TRIDENT II program. FY21 Joint Fuze Arming Fuzing & Firing (AF&F) kits quantities increase to meet capacity capability of the production lines. The variation in quantities per year is due to shared utilization of the National Nuclear Security Administration and Department of Energy production capacity. The unit costs fluctuation is a result of life of part buys and commercial off the shelf items required to support assembly in addition to AF&F quantity changes.

The lowered request from FY 2020 to FY 2021 in Production Support (-$52.095M) reflects decreased production support requirements in Test Missile Kit (TMK) and Thermal Impact Protection System (TIPS) hardware, reduction of TMK Long Lead materials, and D5 LE Flight test Instrumentation purchases.

Fleet Return Missile Electronic SPALT Kits growth ($4.524M) is due to increased purchase quantities of Flight Control Electronic Assemblies and Interlocks. Quantities procured support the conversion of D5 missiles to D5LE missiles and are determined by fleet availability and when the D5 missiles are available for the conversion process.

TRIDENT II MODS - Operating and Support Costs P-5:

The FY 2021 request of $570.930 million for Operating and Support Costs funds efforts associated with the sustainment of TRIDENT II (D5) missiles to include system integration efforts, replacement of aging rocket motors, refreshes and replacement of D5 legacy tooling and test support equipment, Supportability Mods/Strategic Programs Alteration (SPALT) Insertion, Warhead Components and Shape Stable Nose Tip (SSNT).

Shape Stable Nose Tip (SSNT) efforts increase ($18.005M) in FY21 as reentry body conversions continue. Specifically, FY21 procures additional nose tip billet materials to support material qualification testing and forward shell conversion from legacy carbon composite nose tips to Shape Stable Nose Tip, and modifying and updating Reentry Body documentation. The nosetip billet materials is transitioning from development (LI 0101221N RDTE PRJ 2021) to production.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 01: Ballistic Missiles / BSA 2: Modification of Missiles	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603561N, 06030570N, 09012111N, 0101221N
Line Item MDAP/MAIS Code: N/A		

Tooling, Test/Support Equipment efforts increase ($12.935M) as required to maintain and procure special interface gages and Special Support Equipment electrical and mechanical spare/repair parts. The FY21 increase is attributable to procuring Kneel Down Transporters, inter-facility transportation equipment, used to support missile processing and disposal efforts. Additionally, FY21 increased funding procures High Voltage Detonator Bridgewire and Test System Test Consoles, as well as Command Sequencer, JBOX, and Power Distribution Unit Test Consoles.

Cost Element 2.3 HMX funding increases ($2.945M) in FY21 in support of increased HMX procurements. The FY21 fluctuations in HMX procurement are due to differences in US/UK procurement ratios, variation in the Performance Evaluation Testing (PET) Schedule and the type of motor being tested (first stage, second stage, or third stage) and the requirement to maintain a minimum supply of HMX to mitigate risks.

Within Production Support/Missile Hardware, FY21 funding increases ($24.125M) as production begins for First Stage Thrust Vector Control Gas Generators (which include Servoactuators and Gas Hydraulic Assemblies). FS TVC GGs are energetics which are used to control First Stage motors flight. Many of the missile hardware energetic components were not intended to be in service this long and due to their limited life these energetic components need to be requalified, reproduced, and procured due to safety concerns associated with a manned platform.

Warhead Components funding reduced in FY21 ($-12.08M) due to Alternate Release Assembly Fleet assemblies and the procurement of Thermal Protection System (TPS) being completed in FY20.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	P-1 Line Item Number / Title: 1250 / TRIDENT II Mods	Item Number / Title [DODIC]: 1 / TRIDENT II Mods - D5 Life Extension
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code: 178	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	3,704.277	567.801	647.522	602.907	0.000	602.907
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	3,704.277	567.801	647.522	602.907	0.000	602.907
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**3,704.277**	**567.801**	**647.522**	**602.907**	**0.000**	**602.907**
(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 Thousands)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - Joint Fuze Sustainment Cost																		
Recurring Cost																		
1.1.1) Joint Fuze Sustainment(†) (1)	-	-	85.329	2,148.400	30	64.452	348.842	190	66.280	284.688	240	68.325	-	-	0.000	284.688	240	68.325
Subtotal: Recurring Cost	-	-	*85.329*	-	-	*64.452*	-	-	*66.280*	-	-	*68.325*	-	-	*0.000*	-	-	*68.325*
Subtotal: Hardware - Joint Fuze Sustainment Cost	**-**	**-**	***85.329***	**-**	**-**	***64.452***	**-**	**-**	***66.280***	**-**	**-**	***68.325***	**-**	**-**	***0.000***	**-**	**-**	***68.325***
Hardware - Production Support Cost																		
Recurring Cost																		
2.1.1) Production Support (2)	-	-	1,928.224	-	-	139.877	-	-	210.851	-	-	158.756	-	-	0.000	-	-	158.756
Subtotal: Recurring Cost	-	-	*1,928.224*	-	-	*139.877*	-	-	*210.851*	-	-	*158.756*	-	-	*0.000*	-	-	*158.756*
Subtotal: Hardware - Production Support Cost	**-**	**-**	***1,928.224***	**-**	**-**	***139.877***	**-**	**-**	***210.851***	**-**	**-**	***158.756***	**-**	**-**	***0.000***	**-**	**-**	***158.756***
Hardware - Guidance Hardware Cost																		
Recurring Cost																		
3.1.1) Circuit Card Assemblies (CCA's)(†)	1,562.712	368	575.078	1,515.000	62	93.930	1,543.790	62	95.715	1,573.117	60	94.387	-	-	0.000	1,573.117	60	94.387
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)(†)	135.379	916	124.007	122.000	200	24.400	124.320	200	24.864	126.680	200	25.336	-	-	0.000	126.680	200	25.336
3.1.3) Guidance Accelerometer Sensors (PIGA)(†)	237.552	855	203.107	231.000	200	46.200	210.000	220	46.200	213.991	220	47.078	-	-	0.000	213.991	220	47.078

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	P-1 Line Item Number / Title: 1250 / TRIDENT II Mods	Item Number / Title [DODIC]: 1 / TRIDENT II Mods - D5 Life Extension
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code: 178	

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
3.1.4) Guidance Production Support	-	-	319.379	-	-	45.871	-	-	46.741	-	-	47.630	-	-	0.000	-	-	47.630
Subtotal: Recurring Cost	-	-	*1,221.571*	-	-	*210.401*	-	-	*213.520*	-	-	*214.431*	-	-	*0.000*	-	-	*214.431*
Subtotal: Hardware - Guidance Hardware Cost	**-**	**-**	***1,221.571***	**-**	**-**	***210.401***	**-**	**-**	***213.520***	**-**	**-**	***214.431***	**-**	**-**	***0.000***	**-**	**-**	***214.431***
Hardware - Fleet Return Missile Electronic SPALT Kits Cost																		
Recurring Cost																		
4.1.1) Flight Control Electronic Assembly (FCEA)(†) (3)	619.726	113	70.029	642.683	41	26.350	654.881	42	27.505	667.333	45	30.030	-	-	0.000	667.333	45	30.030
4.1.2) Missile Inverter(†)	845.415	65	54.952	878.760	25	21.969	895.480	25	22.387	912.480	25	22.812	-	-	0.000	912.480	25	22.812
4.1.3) Command Sequencer(†)	668.371	62	41.439	694.947	19	13.204	708.158	19	13.455	721.632	19	13.711	-	-	0.000	721.632	19	13.711
4.1.4) Interlocks(†)	1,173.356	118	138.456	1,217.244	41	49.907	1,240.390	41	50.856	1,263.952	42	53.086	-	-	0.000	1,263.952	42	53.086
4.1.5) Missile Production Support	-	-	164.277	-	-	41.641	-	-	42.668	-	-	41.756	-	-	0.000	-	-	41.756
Subtotal: Recurring Cost	-	-	*469.153*	-	-	*153.071*	-	-	*156.871*	-	-	*161.395*	-	-	*0.000*	-	-	*161.395*
Subtotal: Hardware - Fleet Return Missile Electronic SPALT Kits Cost	**-**	**-**	***469.153***	**-**	**-**	***153.071***	**-**	**-**	***156.871***	**-**	**-**	***161.395***	**-**	**-**	***0.000***	**-**	**-**	***161.395***
Gross/Weapon System Cost	**-**	**-**	**3,704.277**	**-**	**-**	**567.801**	**-**	**-**	**647.522**	**-**	**-**	**602.907**	**-**	**-**	**0.000**	**-**	**-**	**602.907**

(†) indicates the presence of a P-5a

Footnotes:

(1) FY21 Joint Fuze Arming Fuzing & Firing (AF&F) kits. Quantities increase from FY20 to FY21 to support the production schedule to ensure AF&Fs are available to support strategic outloads. The variation in quantities per year is due to shared utilization of the National Nuclear Security Administration and Department of Energy production capacity. The unit costs fluctuation is a result of life of part buys and commercial off the shelf items required to support assembly in addition to AF&F quantity changes.

(2) This lowered request in Production Support (-$52.095M) from FY 2020 to FY 2021 reflects decreased production support requirements in Test Missile Kit (TMK) and Thermal Impact Protection System (TIPS) hardware, reduction of TMK Long Lead materials, and D5 LE Flight test Instrumentation purchases.

(3) Fleet Return Missile Electronic SPALT Kits growth ($4.524M) is due to increased purchase quantities of Flight Control Electronic Assemblies and Interlocks. Quantities procured support the conversion of D5 missiles to D5LE missiles and are determined by fleet availability and when the D5 missiles are available for the conversion process.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	P-1 Line Item Number / Title: 1250 / TRIDENT II Mods	Item Number / Title [DODIC]: 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Joint Fuze Sustainment(†)		2019	Department of Energy (DOE) / Kanas City, MO	MIPR	SSP - Washington Navy Yard	Jan 2019	Feb 2020	30	2,148.400	Y		
1.1.1) Joint Fuze Sustainment(†)		2020	Department of Energy (DOE) / Kanas City, MO	MIPR	SSP - Washington Navy Yard	Oct 2019	Nov 2020	190	348.842	Y		
1.1.1) Joint Fuze Sustainment(†)		2021	Department of Energy (DOE) / Kanas City, MO	MIPR	SSP - Washington Navy Yard	Oct 2020	Nov 2021	240	284.688	Y		
3.1.1) Circuit Card Assemblies (CCA's)(†)		2018	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2018	Sep 2018	55	1,591.000	Y		
3.1.1) Circuit Card Assemblies (CCA's)(†)		2019	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2019	Sep 2019	62	1,515.000	Y		
3.1.1) Circuit Card Assemblies (CCA's)(†)		2020	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2020	Sep 2020	62	1,543.790	Y		
3.1.1) Circuit Card Assemblies (CCA's)(†)		2021	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2021	Sep 2021	60	1,573.117	Y		
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)(†)		2017	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2017	Feb 2018	130	149.523	Y		
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)(†)		2018	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2018	Feb 2019	185	125.000	Y		
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)(†)		2019	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2019	Feb 2020	200	122.000	Y		
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)(†)		2020	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2020	Feb 2021	200	124.320	Y		
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)(†)		2021	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2021	Feb 2022	200	126.680	Y		
3.1.3) Guidance Accelerometer Sensors (PIGA)(†)		2017	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2017	Jun 2018	125	261.664	Y		
3.1.3) Guidance Accelerometer Sensors (PIGA)(†)		2018	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2018	Jun 2019	180	240.000	Y		
3.1.3) Guidance Accelerometer Sensors (PIGA)(†)		2019	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2019	Jun 2020	200	231.000	Y		
3.1.3) Guidance Accelerometer Sensors (PIGA)(†)		2020	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2020	Jun 2021	220	210.000	Y		
3.1.3) Guidance Accelerometer Sensors (PIGA)(†)		2021	Charles Stark Draper Laboratory, INC / Cambridge MA	Various	SSP - Washington Navy Yard	Feb 2021	Jun 2022	220	213.991	Y		
4.1.1) Flight Control Electronic Assembly (FCEA)(†)		2016	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2015	Nov 2017	33	607.394	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	P-1 Line Item Number / Title: 1250 / TRIDENT II Mods	Item Number / Title [DODIC]: 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
4.1.1) Flight Control Electronic Assembly (FCEA)(†)		2017	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2016	Nov 2018	40	618.925	Y		
4.1.1) Flight Control Electronic Assembly (FCEA)(†)		2018	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2017	Nov 2019	40	630.700	Y		
4.1.1) Flight Control Electronic Assembly (FCEA)(†)		2019	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2018	Nov 2020	41	642.683	Y		
4.1.1) Flight Control Electronic Assembly (FCEA)(†)		2020	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2019	Nov 2021	42	654.881	Y		
4.1.1) Flight Control Electronic Assembly (FCEA)(†)		2021	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2020	Nov 2022	45	667.333	Y		
4.1.2) Missile Inverter(†)		2016	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2015	Jan 2018	24	830.500	Y		
4.1.2) Missile Inverter(†)		2017	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2016	Jan 2019	21	846.286	Y		
4.1.2) Missile Inverter(†)		2018	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2017	Jan 2020	20	862.400	Y		
4.1.2) Missile Inverter(†)		2019	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2018	Jan 2021	25	878.760	Y		
4.1.2) Missile Inverter(†)		2020	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2019	Jan 2022	25	895.480	Y		
4.1.2) Missile Inverter(†)		2021	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2020	Jan 2023	25	912.480	Y		
4.1.3) Command Sequencer(†)		2016	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2015	Feb 2018	24	656.833	Y		
4.1.3) Command Sequencer(†)		2017	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2016	Feb 2019	19	669.316	Y		
4.1.3) Command Sequencer(†)		2018	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2017	Feb 2020	19	682.000	Y		
4.1.3) Command Sequencer(†)		2019	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2018	Feb 2021	19	694.947	Y		
4.1.3) Command Sequencer(†)		2020	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2019	Feb 2022	19	708.158	Y		
4.1.3) Command Sequencer(†)		2021	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2020	Feb 2023	19	721.632	Y		
4.1.4) Interlocks(†)		2016	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2015	Nov 2017	36	1,150.417	Y		
4.1.4) Interlocks(†)		2017	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2016	Nov 2018	41	1,172.293	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	P-1 Line Item Number / Title: 1250 / TRIDENT II Mods	Item Number / Title [DODIC]: 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
4.1.4) Interlocks(†)		2018	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2017	Nov 2019	41	1,194.561	Y		
4.1.4) Interlocks(†)		2019	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2018	Nov 2020	41	1,217.244	Y		
4.1.4) Interlocks(†)		2020	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2019	Nov 2021	41	1,240.390	Y		
4.1.4) Interlocks(†)		2021	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2020	Nov 2022	42	1,263.952	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2 | **P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods | **Item Number / Title [DODIC]:** 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
							Calendar Year 2016												Calendar Year 2017												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Joint Fuze Sustainment (1)																															
	1	2019	NAVY	30	0	30																									30
	1	2020	NAVY	190	0	190																									190
	1	2021	NAVY	240	0	240																									240
3.1.1) Circuit Card Assemblies (CCA's)																															
Prior Years Deliveries: 313																															
	2	2018	NAVY	55	0	55																									55
	2	2019	NAVY	62	0	62																									62
	2	2020	NAVY	62	0	62																									62
	2	2021	NAVY	60	0	60																									60
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)																															
Prior Years Deliveries: 601																															
	3	2017	NAVY	130	0	130																	A -	-	-	-	-	-	-	-	130
	3	2018	NAVY	185	0	185																									185
	3	2019	NAVY	200	0	200																									200
	3	2020	NAVY	200	0	200																									200
	3	2021	NAVY	200	0	200																									200
3.1.3) Guidance Accelerometer Sensors (PIGA)																															
Prior Years Deliveries: 550																															
	4	2017	NAVY	125	0	125																	A -	-	-	-	-	-	-	-	125
	4	2018	NAVY	180	0	180																									180
	4	2019	NAVY	200	0	200																									200
	4	2020	NAVY	220	0	220																									220
	4	2021	NAVY	220	0	220																									220
4.1.1) Flight Control Electronic Assembly (FCEA) (3)																															
	5	2016	NAVY	33	0	33		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33
	5	2017	NAVY	40	0	40														A -	-	-	-	-	-	-	-	-	-	-	40
	5	2018	NAVY	40	0	40																									40
	5	2019	NAVY	41	0	41																									41
	5	2020	NAVY	42	0	42																									42
	5	2021	NAVY	45	0	45																									45
4.1.2) Missile Inverter																															
	6	2016	NAVY	24	0	24		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
										Calendar Year 2016												Calendar Year 2017									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	6	2017	NAVY	21	0	21														A -	-	-	-	-	-	-	-	-	-	-	21
	6	2018	NAVY	20	0	20																									20
	6	2019	NAVY	25	0	25																									25
	6	2020	NAVY	25	0	25																									25
	6	2021	NAVY	25	0	25																									25
4.1.3) Command Sequencer																															
	7	2016	NAVY	24	0	24		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
	7	2017	NAVY	19	0	19														A -	-	-	-	-	-	-	-	-	-	-	19
	7	2018	NAVY	19	0	19																									19
	7	2019	NAVY	19	0	19																									19
	7	2020	NAVY	19	0	19																									19
	7	2021	NAVY	19	0	19																									19
4.1.4) Interlocks																															
	8	2016	NAVY	36	0	36		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
	8	2017	NAVY	41	0	41														A -	-	-	-	-	-	-	-	-	-	-	41
	8	2018	NAVY	41	0	41																									41
	8	2019	NAVY	41	0	41																									41
	8	2020	NAVY	41	0	41																									41
	8	2021	NAVY	42	0	42																									42
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2 | **P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods | **Item Number / Title [DODIC]:** 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Joint Fuze Sustainment (1)																															
	1	2019	NAVY	30	0	30																A -	-	-	-	-	-	-	-	-	30
	1	2020	NAVY	190	0	190																									190
	1	2021	NAVY	240	0	240																									240
3.1.1) Circuit Card Assemblies (CCA's)																															
Prior Years Deliveries: 313																															
	2	2018	NAVY	55	0	55					A -	-	-	-	-	-	-	5	5	5	5	5	5	5	4	4	4	4	4		0
	2	2019	NAVY	62	0	62																	A -	-	-	-	-	-	-	5	57
	2	2020	NAVY	62	0	62																									62
	2	2021	NAVY	60	0	60																									60
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)																															
Prior Years Deliveries: 601																															
	3	2017	NAVY	130	0	130	-	-	-	-	10	10	11	11	11	11	11	11	11	11	11	11									0
	3	2018	NAVY	185	0	185					A -	-	-	-	-	-	-	-	-	-	-	-	12	13	14	15	16	16	16	16	67
	3	2019	NAVY	200	0	200																	A -	-	-	-	-	-	-	-	200
	3	2020	NAVY	200	0	200																									200
	3	2021	NAVY	200	0	200																									200
3.1.3) Guidance Accelerometer Sensors (PIGA)																															
Prior Years Deliveries: 550																															
	4	2017	NAVY	125	0	125	-	-	-	-	-	-	-	-	10	10	10	10	10	10	10	11	11	11	11	11					0
	4	2018	NAVY	180	0	180					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	15	15	15	120
	4	2019	NAVY	200	0	200																	A -	-	-	-	-	-	-	-	200
	4	2020	NAVY	220	0	220																									220
	4	2021	NAVY	220	0	220																									220
4.1.1) Flight Control Electronic Assembly (FCEA) (3)																															
	5	2016	NAVY	33	0	33	-	2	2	2	3	3	3	3	3	3	3	3	3												0
	5	2017	NAVY	40	0	40	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	4	4	4	4
	5	2018	NAVY	40	0	40		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
	5	2019	NAVY	41	0	41														A -	-	-	-	-	-	-	-	-	-	-	41
	5	2020	NAVY	42	0	42																									42
	5	2021	NAVY	45	0	45																									45
4.1.2) Missile Inverter																															
	6	2016	NAVY	24	0	24	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2										0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2 | **P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods | **Item Number / Title [DODIC]:** 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
										Calendar Year 2018												Calendar Year 2019									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	6	2017	NAVY	21	0	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	3
	6	2018	NAVY	20	0	20		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
	6	2019	NAVY	25	0	25														A -	-	-	-	-	-	-	-	-	-	-	25
	6	2020	NAVY	25	0	25																									25
	6	2021	NAVY	25	0	25																									25
4.1.3) Command Sequencer																															
	7	2016	NAVY	24	0	24	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2									0
	7	2017	NAVY	19	0	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	1	4
	7	2018	NAVY	19	0	19		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
	7	2019	NAVY	19	0	19														A -	-	-	-	-	-	-	-	-	-	-	19
	7	2020	NAVY	19	0	19																									19
	7	2021	NAVY	19	0	19																									19
4.1.4) Interlocks																															
	8	2016	NAVY	36	0	36	-	3	3	3	3	3	3	3	3	3	3	3	3												0
	8	2017	NAVY	41	0	41	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	4	4	4	4	4
	8	2018	NAVY	41	0	41		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41
	8	2019	NAVY	41	0	41														A -	-	-	-	-	-	-	-	-	-	-	41
	8	2020	NAVY	41	0	41																									41
	8	2021	NAVY	42	0	42																									42
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2 | **P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods | **Item Number / Title [DODIC]:** 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Joint Fuze Sustainment (1)																															
	1	2019	NAVY	30	0	30	-	-	-	-	2	2	2	2	2	2	3	3	3	3	3	3									0
	1	2020	NAVY	190	0	190	A -	-	-	-	-	-	-	-	-	-	-	-	-	15	15	16	16	16	16	16	16	16	16	16	16
	1	2021	NAVY	240	0	240													A -	-	-	-	-	-	-	-	-	-	-	-	240
3.1.1) Circuit Card Assemblies (CCA's)																															
Prior Years Deliveries: 313																															
	2	2018	NAVY	55	55	0																									0
	2	2019	NAVY	62	5	57	5	5	5	5	5	5	5	5	5	6	6														0
	2	2020	NAVY	62	0	62					A -	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	6	6		0
	2	2021	NAVY	60	0	60																	A -	-	-	-	-	-	-	5	55
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)																															
Prior Years Deliveries: 601																															
	3	2017	NAVY	130	130	0																									0
	3	2018	NAVY	185	118	67	16	17	17	17																					0
	3	2019	NAVY	200	0	200	-	-	-	-	17	17	17	17	17	17	17	17	16	16	16	16									0
	3	2020	NAVY	200	0	200					A -	-	-	-	-	-	-	-	-	-	-	-	16	16	16	16	17	17	17	17	68
	3	2021	NAVY	200	0	200																	A -	-	-	-	-	-	-	-	200
3.1.3) Guidance Accelerometer Sensors (PIGA)																															
Prior Years Deliveries: 550																															
	4	2017	NAVY	125	125	0																									0
	4	2018	NAVY	180	60	120	15	15	15	15	15	15	15	15																	0
	4	2019	NAVY	200	0	200	-	-	-	-	-	-	-	-	16	16	16	16	17	17	17	17	17	17	17	17					0
	4	2020	NAVY	220	0	220					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	18	18	18	148
	4	2021	NAVY	220	0	220																	A -	-	-	-	-	-	-	-	220
4.1.1) Flight Control Electronic Assembly (FCEA) (3)																															
	5	2016	NAVY	33	33	0																									0
	5	2017	NAVY	40	36	4	4																								0
	5	2018	NAVY	40	0	40	-	4	4	4	4	3	3	3	3	3	3	3	3												0
	5	2019	NAVY	41	0	41	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	4	4	4	4	4
	5	2020	NAVY	42	0	42		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42
	5	2021	NAVY	45	0	45														A -	-	-	-	-	-	-	-	-	-	-	45
4.1.2) Missile Inverter																															
	6	2016	NAVY	24	24	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2

P-1 Line Item Number / Title: 1250 / TRIDENT II Mods

Item Number / Title [DODIC]: 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
										Calendar Year 2020												Calendar Year 2021									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	6	2017	NAVY	21	18	3	1	1	1																						0
	6	2018	NAVY	20	0	20	-	-	-	1	1	1	1	2	2	2	2	2	2	2	2										0
	6	2019	NAVY	25	0	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	7
	6	2020	NAVY	25	0	25		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
	6	2021	NAVY	25	0	25														A -	-	-	-	-	-	-	-	-	-	-	25
4.1.3) Command Sequencer																															
	7	2016	NAVY	24	24	0																									0
	7	2017	NAVY	19	15	4	1	1	1	1																					0
	7	2018	NAVY	19	0	19	-	-	-	-	1	1	1	1	1	2	2	2	2	2	2	2									0
	7	2019	NAVY	19	0	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	1	4
	7	2020	NAVY	19	0	19		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
	7	2021	NAVY	19	0	19														A -	-	-	-	-	-	-	-	-	-	-	19
4.1.4) Interlocks																															
	8	2016	NAVY	36	36	0																									0
	8	2017	NAVY	41	37	4	4																								0
	8	2018	NAVY	41	0	41	-	4	4	4	4	4	3	3	3	3	3	3	3												0
	8	2019	NAVY	41	0	41	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	4	4	4	4	4
	8	2020	NAVY	41	0	41		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41
	8	2021	NAVY	42	0	42														A -	-	-	-	-	-	-	-	-	-	-	42
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2 | **P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods | **Item Number / Title [DODIC]:** 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Joint Fuze Sustainment (1)																															
	1	2019	NAVY	30	30	0																									0
	1	2020	NAVY	190	174	16	16																								0
	1	2021	NAVY	240	0	240	-	20	20	20	20	20	20	20	20	20	20	20	20												0
3.1.1) Circuit Card Assemblies (CCA's)																															
Prior Years Deliveries: 313																															
	2	2018	NAVY	55	55	0																									0
	2	2019	NAVY	62	62	0																									0
	2	2020	NAVY	62	62	0																									0
	2	2021	NAVY	60	5	55	5	5	5	5	5	5	5	5	5	5	5														0
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)																															
Prior Years Deliveries: 601																															
	3	2017	NAVY	130	130	0																									0
	3	2018	NAVY	185	185	0																									0
	3	2019	NAVY	200	200	0																									0
	3	2020	NAVY	200	132	68	17	17	17	17																					0
	3	2021	NAVY	200	0	200	-	-	-	-	17	17	17	17	17	17	17	17	16	16	16	16									0
3.1.3) Guidance Accelerometer Sensors (PIGA)																															
Prior Years Deliveries: 550																															
	4	2017	NAVY	125	125	0																									0
	4	2018	NAVY	180	180	0																									0
	4	2019	NAVY	200	200	0																									0
	4	2020	NAVY	220	72	148	18	18	18	18	19	19	19	19																	0
	4	2021	NAVY	220	0	220	-	-	-	-	-	-	-	-	18	18	18	18	18	18	18	18	19	19	19	19					0
4.1.1) Flight Control Electronic Assembly (FCEA) (3)																															
	5	2016	NAVY	33	33	0																									0
	5	2017	NAVY	40	40	0																									0
	5	2018	NAVY	40	40	0																									0
	5	2019	NAVY	41	37	4	4																								0
	5	2020	NAVY	42	0	42	-	4	4	4	4	4	4	3	3	3	3	3	3												0
	5	2021	NAVY	45	0	45	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4	3	3	3
4.1.2) Missile Inverter																															
	6	2016	NAVY	24	24	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	6	2017	NAVY	21	21	0																									0
	6	2018	NAVY	20	20	0																									0
	6	2019	NAVY	25	18	7	2	2	3																						0
	6	2020	NAVY	25	0	25	-	-	-	2	2	2	2	2	2	2	2	2	2	2	3										0
	6	2021	NAVY	25	0	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	7
4.1.3) Command Sequencer																															
	7	2016	NAVY	24	24	0																									0
	7	2017	NAVY	19	19	0																									0
	7	2018	NAVY	19	19	0																									0
	7	2019	NAVY	19	15	4	1	1	1	1																					0
	7	2020	NAVY	19	0	19	-	-	-	-	1	1	1	1	1	2	2	2	2	2	2	2									0
	7	2021	NAVY	19	0	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	2	2	2	8
4.1.4) Interlocks																															
	8	2016	NAVY	36	36	0																									0
	8	2017	NAVY	41	41	0																									0
	8	2018	NAVY	41	41	0																									0
	8	2019	NAVY	41	37	4	4																								0
	8	2020	NAVY	41	0	41	-	4	4	4	4	4	3	3	3	3	3	3	3												0
	8	2021	NAVY	42	0	42	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	3	3	3	3	3	3
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
										Calendar Year 2024												Calendar Year 2025									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Joint Fuze Sustainment (1)																															
	1	2019	NAVY	30	30	0																									0
	1	2020	NAVY	190	190	0																									0
	1	2021	NAVY	240	240	0																									0
3.1.1) Circuit Card Assemblies (CCA's)																															
Prior Years Deliveries: 313																															
	2	2018	NAVY	55	55	0																									0
	2	2019	NAVY	62	62	0																									0
	2	2020	NAVY	62	62	0																									0
	2	2021	NAVY	60	60	0																									0
3.1.2) Interferometric Fiber-Optic Gyro (IFOG)																															
Prior Years Deliveries: 601																															
	3	2017	NAVY	130	130	0																									0
	3	2018	NAVY	185	185	0																									0
	3	2019	NAVY	200	200	0																									0
	3	2020	NAVY	200	200	0																									0
	3	2021	NAVY	200	200	0																									0
3.1.3) Guidance Accelerometer Sensors (PIGA)																															
Prior Years Deliveries: 550																															
	4	2017	NAVY	125	125	0																									0
	4	2018	NAVY	180	180	0																									0
	4	2019	NAVY	200	200	0																									0
	4	2020	NAVY	220	220	0																									0
	4	2021	NAVY	220	220	0																									0
4.1.1) Flight Control Electronic Assembly (FCEA) (3)																															
	5	2016	NAVY	33	33	0																									0
	5	2017	NAVY	40	40	0																									0
	5	2018	NAVY	40	40	0																									0
	5	2019	NAVY	41	41	0																									0
	5	2020	NAVY	42	42	0																									0
	5	2021	NAVY	45	42	3	3																								0
4.1.2) Missile Inverter																															
	6	2016	NAVY	24	24	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2 | **P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods | **Item Number / Title [DODIC]:** 1 / TRIDENT II Mods - D5 Life Extension

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
										Calendar Year 2024												Calendar Year 2025									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	6	2017	NAVY	21	21	0																									0
	6	2018	NAVY	20	20	0																									0
	6	2019	NAVY	25	25	0																									0
	6	2020	NAVY	25	25	0																									0
	6	2021	NAVY	25	18	7	2	2	3																						0
4.1.3) Command Sequencer																															
	7	2016	NAVY	24	24	0																									0
	7	2017	NAVY	19	19	0																									0
	7	2018	NAVY	19	19	0																									0
	7	2019	NAVY	19	19	0																									0
	7	2020	NAVY	19	19	0																									0
	7	2021	NAVY	19	11	8	2	2	2	2																					0
4.1.4) Interlocks																															
	8	2016	NAVY	36	36	0																									0
	8	2017	NAVY	41	41	0																									0
	8	2018	NAVY	41	41	0																									0
	8	2019	NAVY	41	41	0																									0
	8	2020	NAVY	41	41	0																									0
	8	2021	NAVY	42	39	3	3																								0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 1 / TRIDENT II Mods - D5 Life Extension

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	Department of Energy (DOE) - Kanas City, MO	30	150	240	9	1	12	13	9	1	12	13
2	Charles Stark Draper Laboratory, INC - Cambridge MA	32	50	83	9	4	7	11	9	4	7	11
3	Charles Stark Draper Laboratory, INC - Cambridge MA	120	144	336	9	4	12	16	9	4	12	16
4	Charles Stark Draper Laboratory, INC - Cambridge MA	96	108	288	9	4	16	20	9	4	16	20
5	Lockheed Martin - Sunnyvale, CA	12	36	72	9	1	24	25	9	1	24	25
6	Lockheed Martin - Sunnyvale, CA	12	36	48	9	1	26	27	9	1	26	27
7	Lockheed Martin - Sunnyvale, CA	12	36	72	9	1	27	28	9	1	27	28
8	Lockheed Martin - Sunnyvale, CA	12	36	72	9	1	24	25	9	1	24	25

"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).

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 2 / TRIDENT II Mods -Operating and Support Costs
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	4,858.561	480.210	518.214	570.930	0.000	570.930
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	4,858.561	480.210	518.214	570.930	0.000	570.930
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**4,858.561**	**480.210**	**518.214**	**570.930**	**0.000**	**570.930**
(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 Thousands)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Support - Support Cost Cost																		
1.1) Warhead Components (4)	-	-	1,498.704	-	-	80.126	-	-	84.271	-	-	72.191	-	-	0.000	-	-	72.191
1.2) Shape Stable Nose Tip (SSNT) (5)	-	-	0.000	-	-	8.800	-	-	11.267	-	-	29.272	-	-	0.000	-	-	29.272
1.3) Tooling, Test/ Support Equipment (6)	-	-	463.773	-	-	47.972	-	-	59.487	-	-	72.422	-	-	0.000	-	-	72.422
1.4) Containers	-	-	3.675	-	-	0.100	-	-	0.100	-	-	0.102	-	-	0.000	-	-	0.102
1.5) System Integration & Planning	-	-	198.284	-	-	16.214	-	-	16.643	-	-	16.975	-	-	0.000	-	-	16.975
1.6) Supportability Mods/ SPALT Insertion	-	-	498.480	-	-	35.881	-	-	36.598	-	-	37.329	-	-	0.000	-	-	37.329
1.7) EOP Missile and Guidance Costs	-	-	35.834	-	-	0.000	-	-	2.273	-	-	2.318	-	-	0.000	-	-	2.318
Subtotal: Support - Support Cost Cost	***-***	***-***	***2,698.750***	***-***	***-***	***189.093***	***-***	***-***	***210.639***	***-***	***-***	***230.609***	***-***	***-***	***0.000***	***-***	***-***	***230.609***
Support - Solid Rocket Motors and PBCS Cost																		
2.1) Solid Rocket Motor's(†)	16,317.500	88	1,435.940	17,317.500	12	207.810	17,646.500	12	211.758	17,981.786	12	215.781	-	-	0.000	17,981.786	12	215.781
2.2) Post Boost Control System (PBCS)(†)	1,992.500	90	179.325	2,089.786	14	29.257	2,129.500	14	29.813	2,170.000	14	30.380	-	-	0.000	2,170.000	14	30.380
2.3) HMX (7)	-	-	142.090	-	-	11.488	-	-	11.707	-	-	14.652	-	-	0.000	-	-	14.652

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	P-1 Line Item Number / Title: 1250 / TRIDENT II Mods	Item Number / Title [DODIC]: 2 / TRIDENT II Mods -Operating and Support Costs
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
2.4) Other (Tooling, Storage, PET, Stat Fire etc.)	-	-	366.056	-	-	41.562	-	-	54.297	-	-	55.383	-	-	0.000	-	-	55.383
Subtotal: Support - Solid Rocket Motors and PBCS Cost	**-**	**-**	***2,123.411***	**-**	**-**	***290.117***	**-**	**-**	***307.575***	**-**	**-**	***316.196***	**-**	**-**	***0.000***	**-**	**-**	***316.196***
Support - New Start Cost																		
3.1) Additional Movement/Transport/ Storage/Equip	-	-	36.400	-	-	1.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - New Start Cost	**-**	**-**	***36.400***	**-**	**-**	***1.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - Production Support/Missile Hardware Cost																		
4.1) Production Support/ Missile Hardware (8)	-	-	0.000	-	-	0.000	-	-	0.000	-	-	24.125	-	-	0.000	-	-	24.125
Subtotal: Support - Production Support/Missile Hardware Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***24.125***	**-**	**-**	***0.000***	**-**	**-**	***24.125***
Gross/Weapon System Cost	**-**	**-**	**4,858.561**	**-**	**-**	**480.210**	**-**	**-**	**518.214**	**-**	**-**	**570.930**	**-**	**-**	**0.000**	**-**	**-**	**570.930**

(†) indicates the presence of a P-5a

Footnotes:

(4) Warhead Components reduced ($-12.08M) due to Alternate Release Assembly Fleet assemblies and the procurement of Thermal Protection System (TPS) being completed in FY20.

(5) Shape Stable Nose Tip (SSNT) efforts increase ($18.005M) in FY21 as reentry body conversions continue. Specifically, FY21 procures additional nose tip billet materials to support material qualification testing and forward shell conversion from legacy carbon composite nose tips to Shape Stable Nose Tip, and modifying and updating Reentry Body documentation. The nosetip billet materials is transitioning from development (LI 0101221N RDTE PRJ 2021) to production.

(6) Tooling, Test/Support Equipment efforts increase ($12.935M) as required to maintain and procure special interface gages and Special Support Equipment electrical and mechanical spare/repair parts. The FY21 increase is attributable to procuring Kneel Down Transporters, inter-facility transportation equipment, used to support missile processing and disposal efforts. Additionally, FY21 increased funding procures High Voltage Detonator Bridgewire and Test System Test Consoles, as well as Command Sequencer, JBOX, and Power Distribution Unit Test Consoles.

(7) Cost Element 2.3 HMX funding increases ($2.945M) in FY21 in support of increased HMX procurements. The FY21 fluctuations in HMX procurement are due to differences in US/UK procurement ratios, variation in the Performance Evaluation Testing (PET) Schedule and the type of motor being tested (first stage, second stage, or third stage) and the requirement to maintain a minimum supply of HMX to mitigate risks.

(8) Within Production Support/Missile Hardware, FY21 funding increases ($24.125M) as production begins for First Stage Thrust Vector Control Gas Generators (which include Servoactuators and Gas Hydraulic Assemblies). FS TVC GGs are energetics which are used to control First Stage motors flight. Many of the missile hardware energetic components were not intended to be in service this long and due to their limited life these energetic components need to be requalified, reproduced, and procured due to safety concerns associated with a manned platform.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	P-1 Line Item Number / Title: 1250 / TRIDENT II Mods	Item Number / Title [DODIC]: 2 / TRIDENT II Mods -Operating and Support Costs

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1) Solid Rocket Motor's(†)		2015	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2014	Feb 2018	12	16,066.750	Y		
2.1) Solid Rocket Motor's(†)		2016	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2015	Feb 2019	12	16,366.750	Y		
2.1) Solid Rocket Motor's(†)		2017	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2016	Feb 2020	12	16,677.750	Y		
2.1) Solid Rocket Motor's(†)		2018	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2017	Feb 2021	12	16,994.571	Y		
2.1) Solid Rocket Motor's(†)		2019	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2018	Feb 2022	12	17,317.500	Y		
2.1) Solid Rocket Motor's(†)		2020	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2019	Feb 2023	12	17,646.500	Y		
2.1) Solid Rocket Motor's(†)		2021	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2020	Feb 2024	12	17,981.786	Y		
2.2) Post Boost Control System (PBCS)(†)		2015	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2014	Feb 2018	12	1,976.167	Y		
2.2) Post Boost Control System (PBCS)(†)		2016	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2015	Feb 2019	12	1,975.083	Y		
2.2) Post Boost Control System (PBCS)(†)		2017	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2016	Feb 2020	12	2,012.583	Y		
2.2) Post Boost Control System (PBCS)(†)		2018	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2017	Feb 2021	14	2,050.857	Y		
2.2) Post Boost Control System (PBCS)(†)		2019	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2018	Feb 2022	14	2,089.786	Y		
2.2) Post Boost Control System (PBCS)(†)		2020	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2019	Feb 2023	14	2,129.500	Y		
2.2) Post Boost Control System (PBCS)(†)		2021	Lockheed Martin / Sunnyvale, CA	Various	SSP - Washington Navy Yard	Nov 2020	Feb 2024	14	2,170.000	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 2 / TRIDENT II Mods -Operating and Support Costs

Cost Elements (Units in Each)							Fiscal Year 2015												Fiscal Year 2016												BALANCE
										Calendar Year 2015												Calendar Year 2016									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
2.1) Solid Rocket Motor's																															
Prior Years Deliveries: 40																															
	1	2015	NAVY	12	0	12		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	1	2016	NAVY	12	0	12														A -	-	-	-	-	-	-	-	-	-	-	12
	1	2017	NAVY	12	0	12																									12
	1	2018	NAVY	12	0	12																									12
	1	2019	NAVY	12	0	12																									12
	1	2020	NAVY	12	0	12																									12
	1	2021	NAVY	12	0	12																									12
2.2) Post Boost Control System (PBCS)																															
Prior Years Deliveries: 40																															
	2	2015	NAVY	12	0	12		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	2	2016	NAVY	12	0	12														A -	-	-	-	-	-	-	-	-	-	-	12
	2	2017	NAVY	12	0	12																									12
	2	2018	NAVY	14	0	14																									14
	2	2019	NAVY	14	0	14																									14
	2	2020	NAVY	14	0	14																									14
	2	2021	NAVY	14	0	14																									14
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 2 / TRIDENT II Mods -Operating and Support Costs

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
							Calendar Year 2017												Calendar Year 2018												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
2.1) Solid Rocket Motor's																															
Prior Years Deliveries: 40																															
	1	2015	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	4
	1	2016	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	1	2017	NAVY	12	0	12		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	1	2018	NAVY	12	0	12														A -	-	-	-	-	-	-	-	-	-	-	12
	1	2019	NAVY	12	0	12																									12
	1	2020	NAVY	12	0	12																									12
	1	2021	NAVY	12	0	12																									12
2.2) Post Boost Control System (PBCS)																															
Prior Years Deliveries: 40																															
	2	2015	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	4
	2	2016	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	2	2017	NAVY	12	0	12		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	2	2018	NAVY	14	0	14														A -	-	-	-	-	-	-	-	-	-	-	14
	2	2019	NAVY	14	0	14																									14
	2	2020	NAVY	14	0	14																									14
	2	2021	NAVY	14	0	14																									14
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 2 / TRIDENT II Mods -Operating and Support Costs

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
2.1) Solid Rocket Motor's																															
Prior Years Deliveries: 40																															
	1	2015	NAVY	12	8	4	1	1	1	1																					0
	1	2016	NAVY	12	0	12	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1									0
	1	2017	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	4
	1	2018	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	1	2019	NAVY	12	0	12		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	1	2020	NAVY	12	0	12														A -	-	-	-	-	-	-	-	-	-	-	12
	1	2021	NAVY	12	0	12																									12
2.2) Post Boost Control System (PBCS)																															
Prior Years Deliveries: 40																															
	2	2015	NAVY	12	8	4	1	1	1	1																					0
	2	2016	NAVY	12	0	12	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1									0
	2	2017	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	4
	2	2018	NAVY	14	0	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
	2	2019	NAVY	14	0	14		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
	2	2020	NAVY	14	0	14														A -	-	-	-	-	-	-	-	-	-	-	14
	2	2021	NAVY	14	0	14																									14
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 2 / TRIDENT II Mods -Operating and Support Costs

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
2.1) Solid Rocket Motor's																															
Prior Years Deliveries: 40																															
	1	2015	NAVY	12	12	0																									0
	1	2016	NAVY	12	12	0																									0
	1	2017	NAVY	12	8	4	1	1	1	1																					0
	1	2018	NAVY	12	0	12	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1									0
	1	2019	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	4
	1	2020	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	1	2021	NAVY	12	0	12		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
2.2) Post Boost Control System (PBCS)																															
Prior Years Deliveries: 40																															
	2	2015	NAVY	12	12	0																									0
	2	2016	NAVY	12	12	0																									0
	2	2017	NAVY	12	8	4	1	1	1	1																					0
	2	2018	NAVY	14	0	14	-	-	-	-	1	1	1	1	1	1	1	1	1	1	2	2									0
	2	2019	NAVY	14	0	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	1	1	1	1	1	4
	2	2020	NAVY	14	0	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
	2	2021	NAVY	14	0	14		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 2 / TRIDENT II Mods -Operating and Support Costs

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
							Calendar Year 2023												Calendar Year 2024												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
2.1) Solid Rocket Motor's																															
Prior Years Deliveries: 40																															
	1	2015	NAVY	12	12	0																									0
	1	2016	NAVY	12	12	0																									0
	1	2017	NAVY	12	12	0																									0
	1	2018	NAVY	12	12	0																									0
	1	2019	NAVY	12	8	4	1	1	1	1																					0
	1	2020	NAVY	12	0	12	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1									0
	1	2021	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	4
2.2) Post Boost Control System (PBCS)																															
Prior Years Deliveries: 40																															
	2	2015	NAVY	12	12	0																									0
	2	2016	NAVY	12	12	0																									0
	2	2017	NAVY	12	12	0																									0
	2	2018	NAVY	14	14	0																									0
	2	2019	NAVY	14	10	4	1	1	1	1																					0
	2	2020	NAVY	14	0	14	-	-	-	-	1	1	1	1	1	1	1	1	1	1	2	2									0
	2	2021	NAVY	14	0	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	1	1	1	1	1	4
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 2 / TRIDENT II Mods -Operating and Support Costs

Cost Elements (Units in Each)							Fiscal Year 2025												Fiscal Year 2026												BALANCE
							Calendar Year 2025												Calendar Year 2026												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2024	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
2.1) Solid Rocket Motor's																															
Prior Years Deliveries: 40																															
	1	2015	NAVY	12	12	0																									0
	1	2016	NAVY	12	12	0																									0
	1	2017	NAVY	12	12	0																									0
	1	2018	NAVY	12	12	0																									0
	1	2019	NAVY	12	12	0																									0
	1	2020	NAVY	12	12	0																									0
	1	2021	NAVY	12	8	4	1	1	1	1																					0
2.2) Post Boost Control System (PBCS)																															
Prior Years Deliveries: 40																															
	2	2015	NAVY	12	12	0																									0
	2	2016	NAVY	12	12	0																									0
	2	2017	NAVY	12	12	0																									0
	2	2018	NAVY	14	14	0																									0
	2	2019	NAVY	14	14	0																									0
	2	2020	NAVY	14	14	0																									0
	2	2021	NAVY	14	10	4	1	1	1	1																					0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 2	**P-1 Line Item Number / Title:** 1250 / TRIDENT II Mods	**Item Number / Title [DODIC]:** 2 / TRIDENT II Mods -Operating and Support Costs

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 - Sunnyvale, CA	12	14	18	9	1	37	38	9	1	37	38
2	Lockheed Martin - Sunnyvale, CA	12	14	18	9	1	37	38	9	1	37	38

"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).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 01: Ballistic Missiles / BSA 3: Support Equipment & Facilities	**P-1 Line Item Number / Title:** 1350 / Missile Industrial Facilities

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	39.082	6.998	7.142	7.275	0.000	7.275	7.419	7.568	7.717	7.871	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	39.082	6.998	7.142	7.275	0.000	7.275	7.419	7.568	7.717	7.871	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**39.082**	**6.998**	**7.142**	**7.275**	**0.000**	**7.275**	**7.419**	**7.568**	**7.717**	**7.871**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Funding for Missile Industrial Facilities provides for capital maintenance projects at Navy-owned Naval Industrial Reserve Ordnance Plants (NIROPS) at Sunnyvale and Santa Cruz, California; Bacchus, Utah; Denver, Colorado and Space Coast Florida in support of the Fleet Ballistic Missile program. The Bacchus, Utah, ATK facility alone consists of 583 acres, over 130 buildings and over 13 miles of road. The Sunnyvale, California facility consists of 49 acres of land and 10 buildings and the Santa Cruz, California facility consists of 271 acres of land and 29 buildings.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 01: Ballistic Missiles / BSA 3: Support Equipment & Facilities	**P-1 Line Item Number / Title:** 1350 / Missile Industrial Facilities	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Missile Industrial Facilities				- / 39.082	- / 6.998	- / 7.142	- / 7.275	- / 0.000	- / 7.275
P-40	**Total Gross/Weapon System Cost**				**- / 39.082**	**- / 6.998**	**- / 7.142**	**- / 7.275**	**- / 0.000**	**- / 7.275**

*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 NIROP buildings are vital to D5 motor production and must be maintained in an operational state until the D5 missile retirement. Most buildings are already over 50 years old and have exceeded their useful life. Safety related maintenance projects were deferred when the Department of the Navy did not have a program of record to re-motor the D5 missile to support its extended deployment. The Navy's decision to fund the re-motoring of D5 missiles means repairs and upgrades are necessary to ensure NIROP buildings are safe and properly maintained to support this significant extension of D5 motor procurements. Projects planned in FY2021 include modifications and rehabilitation of civil works systems, non-severable equipment, and real property maintenance. Among these projects are septic system replacements, burying building electrical lines, replacing building electrical transformers, replacing water system supply valves, lighting system replacements, performing hypalon earth cover, replacing exterior doors, installation of backup generators, roof replacements, non-conductive floor upgrades, epoxy floor repairs, and general facilities maintenance.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 01 / 3	**P-1 Line Item Number / Title:** 1350 / Missile Industrial Facilities	**Item Number / Title [DODIC]:** 1 / Missile Industrial Facilities
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	39.082	6.998	7.142	7.275	0.000	7.275
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	39.082	6.998	7.142	7.275	0.000	7.275
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**39.082**	**6.998**	**7.142**	**7.275**	**0.000**	**7.275**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) Capital Maintenance	-	-	39.082	-	-	6.998	-	-	7.142	-	-	7.275	-	-	-	-	-	7.275
Subtotal: Recurring Cost	-	-	*39.082*	-	-	*6.998*	-	-	*7.142*	-	-	*7.275*	-	-	-	-	-	*7.275*
Subtotal: Hardware Cost	**-**	**-**	***39.082***	**-**	**-**	***6.998***	**-**	**-**	***7.142***	**-**	**-**	***7.275***	**-**	**-**	**-**	**-**	**-**	***7.275***
Gross/Weapon System Cost	**-**	**-**	**39.082**	**-**	**-**	**6.998**	**-**	**-**	**7.142**	**-**	**-**	**7.275**	**-**	**-**	**0.000**	**-**	**-**	**7.275**

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 1: Strategic Missiles	**P-1 Line Item Number / Title:** 2101 / Tomahawk

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: 289

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	8,629	-	90	155	-	155	-	-	-	-	-	8,874
Gross/Weapon System Cost *($ in Millions)*	13,639.443	98.570	386.157	277.694	0.000	277.694	5.033	5.023	5.058	5.363	199.574	14,621.915
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	13,639.443	98.570	386.157	277.694	0.000	277.694	5.033	5.023	5.058	5.363	199.574	14,621.915
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**13,639.443**	**98.570**	**386.157**	**277.694**	**0.000**	**277.694**	**5.033**	**5.023**	**5.058**	**5.363**	**199.574**	**14,621.915**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Thousands)*	1,190.978	-	1,860.378	1,537.645	-	1,537.645	-	-	-	-	-	1,203.823
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Block V is a modernized TACTOM missile that includes Navigation Communications (NAVCOMMs) upgrade.

Tomahawk provides an attack capability against fixed and mobile/moving targets, and can launch from both surface ships (RGM) and submarines (UGM). Tomahawk consists of the following variants: (1) RGM/UGM-109C, Land Attack Conventional; (2) RGM/UGM-109D, Land Attack Submunition Dispenser; (3) RGM/UGM-109E, Tactical Tomahawk.

The Block IV/V Tactical Tomahawk (TACTOM RGM/UGM-109E) preserves Tomahawk's long-range precision-strike capability while significantly increasing responsiveness and flexibility. TACTOM is capable of in-flight retargeting, the ability to loiter over the battlefield, in-flight missile health and status monitoring, and battle damage indication. Other Tomahawk Weapon System functionality includes rapid mission planning and execution via Global Positioning System (GPS) onboard the launch platform and improved anti-jam GPS.

Characteristics and dimensions (approximate):
Weight (with booster and capsule) (UGM-109): 4,300 pounds
Weight (with booster and canister) (RGM-109): 4,300 pounds
Length (with booster): 20.5 feet
Wing Span: 8.6 feet
Cruise Speed: High Subsonic

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 1: Strategic Missiles	**P-1 Line Item Number / Title:** 2101 / Tomahawk

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: 289

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)
P-5	1 / Tomahawk	P-5a, P-21			8,629 / 13,617.974	- / 20.164	90 / 213.716	155 / 277.694	- / 0.000	155 / 277.694
P-3a	1 / TACTOM Modernization (Increase Capability and Maintain Reliability)				- / 21.469	- / 78.406	- / 172.441	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**8,629 / 13,639.443**	**- / 98.570**	**90 / 386.157**	**155 / 277.694**	**- / 0.000**	**155 / 277.694**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)
P-5	1 / Tomahawk	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / TACTOM Modernization (Increase Capability and Maintain Reliability)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 272.316
P-40	**Total Gross/Weapon System Cost**				**- / 5.033**	**- / 5.023**	**- / 5.058**	**- / 5.363**	**- / 199.574**	**8,874 / 14,621.915**

*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 2021 funding supports the procurement of 155 new BLOCK V TACTOM.

Starting in FY 2021, established TACTOM Modernization costs have been moved to new BLI 2301, Tomahawk Mods.

The Next Generation Land Attack Weapon (NGLAW) Analysis of Alternatives (AoA) findings have prompted the Navy to restart the TACTOM Production line in FY 2020 and continue into FY 2021. The Navy will conduct further analysis to determine if TACTOM production will continue beyond FY 2021.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	P-1 Line Item Number / Title: 2101 / Tomahawk	Item Number / Title [DODIC]: 1 / Tomahawk
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	8,629	-	90	155	-	155
Gross/Weapon System Cost *($ in Millions)*	13,617.974	20.164	213.716	277.694	0.000	277.694
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	13,617.974	20.164	213.716	277.694	0.000	277.694
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**13,617.974**	**20.164**	**213.716**	**277.694**	**0.000**	**277.694**
(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 Thousands)*	1,578.164	-	2,374.622	1,791.574	-	1,791.574

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - TOTAL HARDWARE - MISSILE Cost																		
Recurring Cost																		
1.1.1) TACTICAL TOMAHAWK (VLS)(†) (1)	928.439	3,286	3,050.849	-	-	0.000	1,860.378	90	167.434	1,537.645	155	238.335	-	-	0.000	1,537.645	155	238.335
1.1.2) TACTICAL TOMAHAWK (CLS)	883.216	1,078	952.107	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.3) TACTICAL TOMAHAWK (TTL)	1,088.385	65	70.745	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.4) REMANUFACTURE (BLOCK III)	-	-	592.217	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.5) PREVIOUS TOMAHAWK PRODUCTION	1,335.961	4,200	5,611.035	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*10,276.953*	-	-	*0.000*	-	-	*167.434*	-	-	*238.335*	-	-	*0.000*	-	-	*238.335*
Subtotal: Flyaway - TOTAL HARDWARE - MISSILE Cost	**-**	**-**	***10,276.953***	**-**	**-**	***0.000***	**-**	**-**	***167.434***	**-**	**-**	***238.335***	**-**	**-**	***0.000***	**-**	**-**	***238.335***
Hardware - TOTAL HARDWARE - MISSILE - OTHER COSTS Cost																		
Recurring Cost																		
2.1.1) CCLS CAPSULE RETRO KIT	-	-	26.300	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	P-1 Line Item Number / Title: 2101 / Tomahawk	Item Number / Title [DODIC]: 1 / Tomahawk
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
2.1.2) CCLS SUBMARINE CAPSULES	352.786	1,078	380.303	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.3) MK 14 CANISTERS(†) (2)	76.444	3,286	251.196	-	-	0.000	178.433	90	16.059	182.000	155	28.210	-	-	0.000	182.000	155	28.210
2.1.4) OBSOLESCENCE (3)	-	-	61.316	-	-	0.000	-	-	2.460	-	-	2.946	-	-	0.000	-	-	2.946
2.1.5) PRODUCTION LINE TRANSITION	-	-	0.000	-	-	20.164	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*719.115*	-	-	*20.164*	-	-	*18.519*	-	-	*31.156*	-	-	*0.000*	-	-	*31.156*
Subtotal: Hardware - TOTAL HARDWARE - MISSILE - OTHER COSTS Cost	**-**	**-**	***719.115***	**-**	**-**	***20.164***	**-**	**-**	***18.519***	**-**	**-**	***31.156***	**-**	**-**	***0.000***	**-**	**-**	***31.156***
Support - TOTAL PROCUREMENT SUPPORT - MISSILE Cost																		
3.1) PRODUCT IMPROVEMENT	-	-	444.331	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
3.2) PRODUCTION ENGINEERING SUPPORT (4)	-	-	788.601	-	-	0.000	-	-	6.415	-	-	4.511	-	-	0.000	-	-	4.511
3.3) SPECIAL TOOLING & TEST EQUIPMENT (ST & TE)	-	-	38.090	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
3.4) SYSTEMS ENGINEERING (5)	-	-	428.744	-	-	0.000	-	-	6.885	-	-	3.692	-	-	0.000	-	-	3.692
Subtotal: Support - TOTAL PROCUREMENT SUPPORT - MISSILE Cost	**-**	**-**	***1,699.766***	**-**	**-**	***0.000***	**-**	**-**	***13.300***	**-**	**-**	***8.203***	**-**	**-**	***0.000***	**-**	**-**	***8.203***
Support - TOTAL FLEET SUPPORT - MISSILE Cost																		
4.1) DOCUMENTATION	-	-	32.257	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.2) SUPPORT EQUIPMENT (6)	-	-	233.368	-	-	0.000	-	-	14.463	-	-	0.000	-	-	0.000	-	-	0.000
4.3) THEATER MISSION PLANNING CENTER	-	-	255.044	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.4) TRAINING EQUIPMENT	-	-	87.953	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
5.1) EOQ	-	-	50.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
5.2) EOQ Credit	-	-	-50.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - TOTAL FLEET SUPPORT - MISSILE Cost	**-**	**-**	***608.622***	**-**	**-**	***0.000***	**-**	**-**	***14.463***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	P-1 Line Item Number / Title: 2101 / Tomahawk	Item Number / Title [DODIC]: 1 / Tomahawk
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Support - TOTAL SPARES & REPAIR PARTS Cost																		
6.1) TOMAHAWK INITIAL SPARES	-	-	313.518	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - TOTAL SPARES & REPAIR PARTS Cost	***-***	***-***	***313.518***	***-***	***-***	***0.000***	***-***	***-***	***0.000***	***-***	***-***	***0.000***	***-***	***-***	***0.000***	***-***	***-***	***0.000***
Gross/Weapon System Cost	**1,578.164**	**8,629**	**13,617.974**	**-**	**-**	**20.164**	**2,374.622**	**90**	**213.716**	**1,791.574**	**155**	**277.694**	**-**	**-**	**0.000**	**1,791.574**	**155**	**277.694**

(†) indicates the presence of a P-5a

Footnotes:

(1) Production of 245 Block V Tomahawk AURs across FY 2020 and FY 2021 is required as Tomahawk is a key element of the Navy's Offensive Missile Strategy.

(2) Production of 245 MK 14 Canisters are required to enable production of 245 Block V Tomahawk AURs across FY 2020 and FY 2021; this production is required to support Tomahawk as a key element of the Navy's Offensive Missile Strategy. Unit costs for canisters in FY 2020 and FY 2021 are higher than the unit costs for canisters in FY 2017 and FY 2018 as those procured in FY 2017 and FY 2018 leveraged canisters refurbished organically by Navy Field Activities. Canisters in FY 2020 and FY 2021 require the purchase of new canisters due to insufficient quantities of expended canisters remaining in inventory. Cannister costs in FY 2021 President's Budget Request are higher than those depicted in FY 2020 President's Budget Request due to the higher cost of steel as a result of imposed steel tariffs.

(3) Cost Element Obsolescence - Funding reflects required Production obsolescence mitigation including avionics, electrical, and structures bill of material development, and obsolescence ECP forecasting in order to support the extended end of service date.

(4) Cost Element Production Engineering Support - Required in FY 2021 to support the delivery of missiles across the funded delivery period as well as additional support required for Block V related capabilities. Efforts include warhead energetics, airframe engineering competencies, Production Acceptance Testing and integrated logistics support. Cost is decreased in FY 2021 as compared to FY 2020 due to the additional engineering effort required in FY 2020 to support re-starting Tomahawk production.

(5) Cost Element Systems Engineering Support - Required in FY 2021 to support the delivery of missiles across the funded delivery period as well as additional support required for Block V related capabilities. Efforts include warhead energetics, airframe engineering competencies, Production Acceptance Testing and integrated logistics support. Cost is decreased in FY 2021 as compared to FY 2020 due to the additional engineering effort required in FY 2020 to support re-starting Tomahawk production.

(6) Cost Element Support Equipment - Support equipment in FY 2020 is for the procurement of Mid-Body Range Safety System (MRSS) required to conduct TACTOM BLK IV/V flight testing and associated test equipment obsolescence and cyber security upgrades necessary for software development, MRSS Kit production and TACTOM BLK IV/V missile conversion into a flight test missile. Increases in FY 2020 are due to the requirement to maintain Flight Test tempo that is supportive of capability development, missile inventory surveillance, fleet proficiency, and tactics development. The FY 2021 MRSS Procurement has been eliminated due to sufficient Flight Test kits in inventory to support FY 2022 Tomahawk Flight Tests. Due to low procurement quantities, MRSS Kits are not in continuous production and this break of production in FY 2021 is not expected to cause an increase in future procurement costs.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	P-1 Line Item Number / Title: 2101 / Tomahawk	Item Number / Title [DODIC]: 1 / Tomahawk

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) TACTICAL TOMAHAWK (VLS)(†)		2016	Raytheon Missile System / Tucson AZ	SS / FP	NAVAIR	Dec 2016	Nov 2018	149	1,093.617	Y		Jul 2015
1.1.1) TACTICAL TOMAHAWK (VLS)(†)		2017	Raytheon Missile System / Tucson AZ	SS / FP	NAVAIR	Nov 2017	Nov 2019	196	1,141.403	Y		Jul 2016
1.1.1) TACTICAL TOMAHAWK (VLS)(†)		2018	Raytheon Missile System / Tucson AZ	SS / FP	NAVAIR	Apr 2018	Aug 2020	44	1,432.696	Y		Jul 2017
1.1.1) TACTICAL TOMAHAWK (VLS)(†)	✓	2018	Raytheon Missile System / Tucson AZ	SS / FP	NAVAIR	Apr 2018	Aug 2020	56	1,432.696	Y		Jul 2017
1.1.1) TACTICAL TOMAHAWK (VLS)(†)		2020	Raytheon Missile System / Tucson AZ	SS / FP	NAVAIR	Jan 2020	Nov 2022	90	1,860.378	Y		Mar 2019
1.1.1) TACTICAL TOMAHAWK (VLS)(†)		2021	Raytheon Missile System / Tucson AZ	SS / FP	NAVAIR	Dec 2020	Aug 2023	155	1,537.645	Y		Mar 2019
2.1.3) MK 14 CANISTERS(†)		2016	BAE / MINNEAPOLIS, MN	C / FP	NAVSEA	Mar 2016	Dec 2017	149	79.127	Y		Jun 2012
2.1.3) MK 14 CANISTERS(†)		2017	Naval Munitions Command Weapons Station / Various	WR	N/A	Mar 2017	Sep 2018	196	21.128	Y		Jul 2016
2.1.3) MK 14 CANISTERS(†)		2018	Naval Munitions Command Weapons Station / Various	WR	N/A	Aug 2018	Aug 2019	44	32.955	Y		Mar 2018
2.1.3) MK 14 CANISTERS(†)	✓	2018	Naval Munitions Command Weapons Station / Various	WR	N/A	Aug 2018	Aug 2019	56	32.955	Y		Mar 2018
2.1.3) MK 14 CANISTERS(†)		2020	BAE / MINNEAPOLIS, MN	C / FP	NAVSEA	Mar 2020	May 2021	90	178.433	Y		Aug 2018
2.1.3) MK 14 CANISTERS(†)		2021	BAE / MINNEAPOLIS, MN	C / FP	NAVSEA	Mar 2021	May 2022	155	182.000	Y		Aug 2018

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Item Number / Title [DODIC]:** 1 / Tomahawk

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
										Calendar Year 2016												Calendar Year 2017									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) TACTICAL TOMAHAWK (VLS) (1)																															
Prior Years Deliveries: 2841																															
	1	2016	NAVY	149	0	149															A -	-	-	-	-	-	-	-	-	-	149
	1	2017	NAVY	196	0	196																									196
	1	2018	NAVY	44	0	44																									44
✓	1	2018	NAVY	56	0	56																									56
	1	2020	NAVY	90	0	90																									90
	1	2021	NAVY	155	0	155																									155
2.1.3) MK 14 CANISTERS (2)																															
Prior Years Deliveries: 2841																															
	3	2016	NAVY	149	0	149						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	149
	2	2017	NAVY	196	0	196																		A -	-	-	-	-	-	-	196
	2	2018	NAVY	44	0	44																									44
✓	2	2018	NAVY	56	0	56																									56
	3	2020	NAVY	90 (7)	0	90																									90
	3	2021	NAVY	155	0	155																									155
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Item Number / Title [DODIC]:** 1 / Tomahawk

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
										Calendar Year 2018												Calendar Year 2019									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) TACTICAL TOMAHAWK (VLS) (1)																															
Prior Years Deliveries: 2841																															
	1	2016	NAVY	149	0	149	-	-	-	-	-	-	-	-	-	-	-	-	-	2	14	14	14	14	13	13	13	13	13	13	13
	1	2017	NAVY	196	0	196		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	196
	1	2018	NAVY	44	0	44							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44
✓	1	2018	NAVY	56	0	56							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56
	1	2020	NAVY	90	0	90																									90
	1	2021	NAVY	155	0	155																									155
2.1.3) MK 14 CANISTERS (2)																															
Prior Years Deliveries: 2841																															
	3	2016	NAVY	149	0	149	-	-	2	14	14	14	14	13	13	13	13	13	13	13											0
	2	2017	NAVY	196	0	196	-	-	-	-	-	-	-	-	-	-	-	4	16	16	8	32	24	40	8	24	24				0
	2	2018	NAVY	44	0	44											A -	-	-	-	-	-	-	-	-	-	-	-	10	12	22
✓	2	2018	NAVY	56	0	56											A -	-	-	-	-	-	-	-	-	-	-	-	10	13	33
	3	2020	NAVY	90 (7)	0	90																									90
	3	2021	NAVY	155	0	155																									155
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Item Number / Title [DODIC]:** 1 / Tomahawk

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020															Calendar Year 2021									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) TACTICAL TOMAHAWK (VLS) (1)																															
Prior Years Deliveries: 2841																															
	1	2016	NAVY	149	136	13	13																								0
	1	2017	NAVY	196	0	196	-	16	16	16	17	17	16	16	16	17	17	15	17												0
	1	2018	NAVY	44	0	44	-	-	-	-	-	-	-	-	-	-	3	3	4	3	3	4	4	4	3	3	3	7			0
✓	1	2018	NAVY	56	0	56	-	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	5	1			0
	1	2020	NAVY	90	0	90				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90
	1	2021	NAVY	155	0	155															A -	-	-	-	-	-	-	-	-	-	155
2.1.3) MK 14 CANISTERS (2)																															
Prior Years Deliveries: 2841																															
	3	2016	NAVY	149	149	0																									0
	2	2017	NAVY	196	196	0																									0
	2	2018	NAVY	44	22	22	10	10	2																						0
✓	2	2018	NAVY	56	23	33	10	10	10	3																					0
	3	2020	NAVY	90 (7)	0	90						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	7	8	8	53
	3	2021	NAVY	155	0	155																		A -	-	-	-	-	-	-	155
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1 | **P-1 Line Item Number / Title:** 2101 / Tomahawk | **Item Number / Title [DODIC]:** 1 / Tomahawk

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) TACTICAL TOMAHAWK (VLS) (1)																															
Prior Years Deliveries: 2841																															
	1	2016	NAVY	149	149	0																									0
	1	2017	NAVY	196	196	0																									0
	1	2018	NAVY	44	44	0																									0
✓	1	2018	NAVY	56	56	0																									0
	1	2020	NAVY	90	0	90	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	7	8	8	7	8	8	7	8	8	7
	1	2021	NAVY	155	0	155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	13	130
2.1.3) MK 14 CANISTERS (2)																															
Prior Years Deliveries: 2841																															
	3	2016	NAVY	149	149	0																									0
	2	2017	NAVY	196	196	0																									0
	2	2018	NAVY	44	44	0																									0
✓	2	2018	NAVY	56	56	0																									0
	3	2020	NAVY	90 (7)	37	53	8	7	8	7	8	8	7																		0
	3	2021	NAVY	155	0	155	-	-	-	-	-	-	-	12	13	13	13	13	13	13	13	13	13	13	13						0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Item Number / Title [DODIC]:** 1 / Tomahawk

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
										Calendar Year 2024												Calendar Year 2025									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) TACTICAL TOMAHAWK (VLS) (1)																															
Prior Years Deliveries: 2841																															
	1	2016	NAVY	149	149	0																									0
	1	2017	NAVY	196	196	0																									0
	1	2018	NAVY	44	44	0																									0
✓	1	2018	NAVY	56	56	0																									0
	1	2020	NAVY	90	83	7	7																								0
	1	2021	NAVY	155	25	130	13	13	13	13	13	13	13	13	13	13															0
2.1.3) MK 14 CANISTERS (2)																															
Prior Years Deliveries: 2841																															
	3	2016	NAVY	149	149	0																									0
	2	2017	NAVY	196	196	0																									0
	2	2018	NAVY	44	44	0																									0
✓	2	2018	NAVY	56	56	0																									0
	3	2020	NAVY	90 (7)	90	0																									0
	3	2021	NAVY	155	155	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Item Number / Title [DODIC]:** 1 / Tomahawk

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 System - Tucson AZ	90	350	350	0	0	0	0	0	3	25	28
2	Naval Munitions Command Weapons Station - Various	90	350	350	0	0	0	0	0	10	15	25
3	BAE - MINNEAPOLIS, MN	90	350	350	0	0	0	0	0	4	13	17

"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:
(7) MSR/MAX production rates are based on canister contract constraints. Multiple canister configurations are manufactured at BAE in Aberdeen, South Dakota for multiple customers in the same facility. The family includes MK7, MK8, MK13, MK14, MK15, MK21 and MK236. As a result of the broad number of customers, the demand level is sufficient for the industrial base. There is no specific MSR/MAX for the MK14 TACTOM canister. MSR/MAX would be a factor of the entire family of canisters. MSR for TACTOM missiles is 90 when executing concurrently with the Recertification Program. Max Rate is inclusive of Recertification quantities on the P3A for BLI 2101 and for BLI 2301 beginning in FY 2021. Government Furnished Property limits max capacity to 350 per year until FY 2023.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Modification Number / Title:** 1 / TACTOM Modernization
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	21.469	78.406	172.441	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	272.316
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	21.469	78.406	172.441	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	272.316
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**21.469**	**78.406**	**172.441**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**272.316**
(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 Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Funding for TACTOM Modifications in FY2021 and across the FYDP is now budgeted in BLI 2301.

The Tactical Tomahawk (TACTOM) Navigation Communication Modernization kits (NAVCOMMs) consist of the Integrated Single Box Solution (ISBS) radio, two new antennas and associated cabling, a new mid-body cover, and changes to the aft-body structure and aft-body cover. The ISBS radio is replacing the existing Satellite Data Link Terminal (SDLT); and the new Ultra High Frequency (UHF) antenna is replacing the existing UHF antenna. A second antenna is being added to the missile to accommodate a second frequency band. The changes to the missile are driven by the obsolescence of the SDLT hardware and the obsolescence of the UHF Demand Assigned Multiple Access (DAMA) communications infrastructure that is being phased out of service. Tomahawk Weapon System Baseline IV, Operational Requirements Document (SN 641-76-04), Revision 3, 11 August 2004.

As part of the Recertification (ACAT II) program, all Block IV TACTOMs will be updated to the modernized Block V configuration with the incorporation of NAVCOMMs kits continuing in FY 2021. Recertification inventory objective is 3992.

The TACTOM service life for RGM109E and UGM109E Block IV/V Tomahawk cruise missiles is 30 years with a 15 year deployment and recertification cycle. The TACTOM Recertification program includes funding associated with the recertification of BLK IV TACTOM Missiles. The yearly recertification profile will limit the missile backlog within the Fleet due to the expiration of life limiting components. The recertification contract will have three months of production lead-time prior to missile induction. Recertification activity includes the costs associated with the Raytheon labor, vendor recertification of specific components (i.e. mechanical and electrical components), recertification of the MK 45 submarine capsule, missile consumables, fuze recertification and fuel. Recertification is planned to occur concurrently with installation of NAVCOMMs Modernization Kits, which will replace the existing SDLT radio and antenna.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Modification Number / Title:** 1 / TACTOM Modernization
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TACTOM	**Modification Type:** Increase Capability and Maintain Reliability	**Related RDT&E PEs:** 0204229N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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												
Modification Item 1 of 2: Recertification												
A Kits												
Recurring												
1.1.1) Recertification Kits - NonOrganic [8]	- / -	5 / 6.290	112 / 34.251	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	117 / 40.541
Subtotal: Recurring	*- / 0.000*	*- / 6.290*	*- / 34.251*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 40.541*
Subtotal: Recertification	*- / -*	*5 / 6.290*	*112 / 34.251*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*117 / 40.541*
Modification Item 2 of 2: NAVCOMMs												
A Kits												
Recurring												
2.1.1) NAVCOMMs - NonOrganic [9]	5 / 1.573	112 / 29.679	156 / 38.407	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	273 / 69.659
Subtotal: Recurring	*- / 1.573*	*- / 29.679*	*- / 38.407*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 69.659*
Subtotal: NAVCOMMs	*5 / 1.573*	*112 / 29.679*	*156 / 38.407*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*273 / 69.659*
Subtotal: Procurement, All Modification Items	*- / 1.573*	*- / 35.969*	*- / 72.658*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 110.200*
Support *(All Modification Items)*												
3.1) Other Production Support- NAVCOMMs Modifications [10]	- / 3.848	- / 1.461	- / 0.182	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 5.491
3.2) Support Equipment- NAVCOMMs Modification [11]	- / 0.000	- / 1.934	- / 2.423	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 4.357
3.3) Integrated Logistics Support- NAVCOMMs Modification [12]	- / 1.252	- / 1.706	- / 0.027	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 2.985
3.4) Other Production Support- Recertification [13]	- / 0.000	- / 4.899	- / 6.445	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 11.344
3.5) Support Equipment- Recertification [14]	- / 0.000	- / 13.644	- / 42.910	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 56.554
3.6) Integrated Logistics Support- Recertification [15]	- / 0.000	- / 0.895	- / 1.676	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 2.571
3.7) MK-45 Support- Recertification [16]	- / 1.046	- / 9.300	- / 7.672	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 18.018
3.8) Recertification Line Stand-Up	- / 13.750	- / 3.039	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 16.789
Subtotal: Support	*- / 19.896*	*- / 36.878*	*- / 61.335*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 118.109*
Installation												
Modification Item 1 of 2: Recertification	- / 0.000	- / 4.485	- / 34.346	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 38.831
Modification Item 2 of 2: NAVCOMMs	- / 0.000	- / 1.074	- / 4.102	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 5.176
Subtotal: Installation	*- / 0.000*	*- / 5.559*	*- / 38.448*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 44.007*
Total												

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Modification Number / Title:** 1 / TACTOM Modernization
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TACTOM	**Modification Type:** Increase Capability and Maintain Reliability	**Related RDT&E PEs:** 0204229N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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)*
Total Cost (Procurement + Support + Installation)	**21.469**	**78.406**	**172.441**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**272.316**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Modification Number / Title:** 1 / TACTOM Modernization
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 2: Recertification

Manufacturer Information

Manufacturer Name: RAYTHEON Company	Manufacturer Location: TUCSON, AZ
Administrative Leadtime *(in Months)*: 4	Production Leadtime *(in Months)*: 8

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Apr 2019	Jan 2020					
Delivery Dates	May 2019	Sep 2020					

Installation Information

Method of Implementation: Contractor:: Installation Name: Recertification Kits

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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 2019	- / -	5 / 4.485	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 4.485
FY 2020	- / -	- / -	112 / 34.346	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	112 / 34.346
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	5 / 4.485	112 / 34.346	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	117 / 38.831

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	-	-	-	5	-	-	-	-	112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117
Out	-	-	-	-	5	-	-	-	-	14	28	42	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Modification Number / Title:** 1 / TACTOM Modernization
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 2 of 2: NAVCOMMs

Manufacturer Information

Manufacturer Name: RAYTHEON Company	Manufacturer Location: TUCSON, AZ
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Mar 2020					
Delivery Dates	Dec 2020	Mar 2021					

Installation Information

Method of Implementation: Contractor:: Installation Name: NAVCOMMs

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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	- / -	5 / 1.074	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 1.074
FY 2019	- / -	- / -	112 / 4.102	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	112 / 4.102
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	5 / 1.074	112 / 4.102	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	117 / 5.176

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	-	1	1	2	1	14	28	42	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117
Out	-	1	1	2	1	-	-	-	-	14	28	42	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117

Footnotes:

(8) Cost Element Recertification Kits - Beginning in FY 2021, this Cost Code moved from BLI 2101 to BLI 2301. Learning curve, quantity variations affecting economy of scale, escalation rates, and costs related to equipment upgrades to prepare missile for Block V upgrades account for the variation in Recertification kit costs across the FYDP. Cost Element Recertification Installs - Funding variation across the FYDP reflects required avionic, electrical, and structures bill of material development to prepare missile for block V upgrades. Induction schedule in FY 2020 reflects a nine month production lead-time, and FY 2021 and beyond reflects a six month production lead-time.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 1	**P-1 Line Item Number / Title:** 2101 / Tomahawk	**Modification Number / Title:** 1 / TACTOM Modernization
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(9) Cost Element NAVCOMMs - Beginning in FY 2021, this Cost Code moved from BLI 2101 to BLI 2301. FY 2021 Installation funding associated with the FY 2020 funded NAVCOMM Kits is reflected on BLI 2301. Learning curve, quantity variations affecting economy of scale, and escalation rates account for the variation in NAVCOMM kit costs across the FYDP.

(10) Cost Element Other Production Support- NAVCOMMs - Beginning in FY 2021, this Cost Code moved from BLI 2101 to BLI 2301. Includes costs for post production qualification radio and crypto support. Funding reflects required obsolescence mitigation including avionic, electrical, and structures bill of material development, and obsolescence Engineering Change Proposal forecasting in order to support the extended end of service date.

(11) Cost Element Support Equipment- NAVCOMMs - Beginning in FY 2021, this Cost Code moved from BLI 2101 to BLI 2301. Includes unique support and test equipment required to support the integration of the NAVCOMMs, Advanced Communication Architecture (ACA)and Modernization Kits during recertification. This would include planning, resourcing and implementing management actions to acquire and support the equipment required to sustain and validate the NAVCOMMs capability/functionality ensuring that the TACTOM is available to the warfighter when it is needed.

(12) Cost Element Integrated Logistics Support- NAVCOMMs - Beginning in FY 2021, this Cost Code moved from BLI 2101 to BLI 2301. Includes costs for support equipment management, computer resources support, training and training support, ILS program management, and packaging, handling, storage and transportation as associated with the NAVCOMMs Modernization Kit.

(13) Cost Element Other Production Support- Recertification - Beginning in FY 2021, this Cost Code moved from BLI 2101 to BLI 2301. Unique government and contractor production support and recurring fixed costs that is required per lot of recertification kit. Funding reflects required obsolescence mitigation including avionic, electrical, and structures bill of material development, and obsolescence Engineering Change Proposal forecasting in order to support the extended end of service date.

(14) Cost Element Support Equipment- Recertification - Beginning in FY 2021, this Cost Code moved from BLI 2101 to BLI 2301.

(15) Cost Element Integrated Logistics Support- Recertification - Beginning in FY 2021, this Cost Code moved from BLI 2101 to BLI 2301. Costs include support equipment management, computer resources support, training and training support, ILS program management, and packaging, handling, storage and transportation as associated with the recertification kit.

(16) Cost Element MK-45 Support- Recertification - Beginning in FY 2021, this Cost Code moved from BLI 2101 to BLI 2301. Funding is required to recertify and extend the service life of the Composite Capsule Launching System (CCLS) barrels through procurement of rotable pool Capsule Launching System (CLS) capsules, design and qualification of CLS missile CCA seals to support the life cycle of recertification efforts, and procurement of the hydro dynamic test fixture required for Capsule Closure Assembly (CCA) seal certification. Increase in FY2020 is due to the Non-Recurring Engineering cost associated to the 4.5 year production gap at RMS and subcontractors for CLS support/recertification.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2206 / AMRAAM

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: 185

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	2,735	167	192	325	-	325	358	380	227	235	-	4,619
Gross/Weapon System Cost *($ in Millions)*	2,726.510	188.441	211.827	326.952	0.000	326.952	344.998	363.244	227.255	240.051	-	4,629.278
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	2,726.510	188.441	211.827	326.952	0.000	326.952	344.998	363.244	227.255	240.051	-	4,629.278
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**2,726.510**	**188.441**	**211.827**	**326.952**	**0.000**	**326.952**	**344.998**	**363.244**	**227.255**	**240.051**	**-**	**4,629.278**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	8.910	9.067	-	9.067	2.926	2.504	2.508	1.535	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	932.111	1,112.653	1,097.818	995.018	-	995.018	953.989	940.584	981.075	989.613	-	957.677
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

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. The AIM-120D provides increased performance from improved kinematics, GPS-aided navigation, a two-way data link; which enhances aircrew survivability and network compatibility. Additional enhancements include new guidance software to combat a technologically capable adversary to reduce risk in air combat scenarios, and limit missile defense challenges.

Differences in All Up Round Unit Cost between the Navy and Air Force is the result of the variations in procurement of missile types of each service.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2206 / AMRAAM	
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: 185		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / AMRAAM	P-5a, P-21			2,735 / 2,726.510	167 / 188.441	192 / 211.827	325 / 326.952	- / 0.000	325 / 326.952
P-40	**Total Gross/Weapon System Cost**				**2,735 / 2,726.510**	**167 / 188.441**	**192 / 211.827**	**325 / 326.952**	**- / 0.000**	**325 / 326.952**

*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 2021 funding procures 325 AMRAAM missiles in support of warfighter requirements.

Funding also provides required support costs such as: test and technical production support, procurement of training equipment, diminishing manufacturing sources, and test equipment/test equipment upgrades to support the AIM-120D configuration.

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

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2206 / AMRAAM	Item Number / Title [DODIC]: 1 / AMRAAM
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	2,735	167	192	325	-	325
Gross/Weapon System Cost *($ in Millions)*	2,726.510	188.441	211.827	326.952	0.000	326.952
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	2,726.510	188.441	211.827	326.952	0.000	326.952
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**2,726.510**	**188.441**	**211.827**	**326.952**	**0.000**	**326.952**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	8.910	9.067	-	9.067
Gross/Weapon System Unit Cost *($ in Thousands)*	996.896	1,128.389	1,103.266	1,006.006	-	1,006.006

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - MISSILE Cost																		
Recurring Cost																		
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR)(†) (1)	628.013	2,400	1,507.230	1,029.714	117	120.477	1,156.092	142	164.165	955.578	315	301.007	-	-	-	955.578	315	301.007
1.1.2) AIM-120 MISSILE - CAPTIVE AIR TRAINING MISSILE (CATM)(†) (2)	613.791	335	205.620	575.160	50	28.758	580.500	50	29.025	576.100	10	5.761	-	-	-	576.100	10	5.761
1.1.3) WARRANTY	-	-	36.120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.4) DIMINISHING MANUFACTURING SOURCES (DMS)	-	-	220.927	-	-	20.024	-	-	11.726	-	-	11.308	-	-	-	-	-	11.308
1.1.5) TOOLING AND TEST EQUIPMENT	-	-	39.366	-	-	12.161	-	-	1.679	-	-	0.855	-	-	-	-	-	0.855
1.1.6) ENGINEERING CHANGE ORDERS (ECO) (3)	-	-	34.514	-	-	0.909	-	-	0.785	-	-	1.570	-	-	-	-	-	1.570
Subtotal: Recurring Cost	-	-	*2,043.777*	-	-	*182.329*	-	-	*207.380*	-	-	*320.501*	-	-	-	-	-	*320.501*
Subtotal: Flyaway - MISSILE Cost	**-**	**-**	***2,043.777***	**-**	**-**	***182.329***	**-**	**-**	***207.380***	**-**	**-**	***320.501***	**-**	**-**	**-**	**-**	**-**	***320.501***
Flyaway - NONRECURRING and ANCILLARY EQUIPMENT Cost																		
Non Recurring Cost																		
2.1.1) SPECIAL TOOLING AND TEST EQUIPMENT	-	-	93.514	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2206 / AMRAAM	Item Number / Title [DODIC]: 1 / AMRAAM
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
2.1.2) CONTAINERS	-	-	7.204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*100.718*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway - NONRECURRING and ANCILLARY EQUIPMENT Cost	**-**	**-**	***100.718***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Flyaway - PRODUCTION SUPPORT Cost																		
Recurring Cost																		
3.1.1) TEST SUPPORT	-	-	135.303	-	-	0.688	-	-	0.537	-	-	0.547	-	-	-	-	-	0.547
3.1.2) TECHNICAL SUPPORT	-	-	269.526	-	-	2.796	-	-	2.864	-	-	2.333	-	-	-	-	-	2.333
Subtotal: Recurring Cost	-	-	*404.829*	-	-	*3.484*	-	-	*3.401*	-	-	*2.880*	-	-	-	-	-	*2.880*
Subtotal: Flyaway - PRODUCTION SUPPORT Cost	**-**	**-**	***404.829***	**-**	**-**	***3.484***	**-**	**-**	***3.401***	**-**	**-**	***2.880***	**-**	**-**	**-**	**-**	**-**	***2.880***
Support - SUPPORT COST - FLEET Cost																		
4.1) PECULIAR SUPPORT EQUIPMENT	-	-	60.880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.2) TRAINING EQUIPMENT (4)	-	-	35.864	-	-	1.570	-	-	-	-	-	2.560	-	-	-	-	-	2.560
4.3) INTEGRATED LOGISTICS SUPPORT (ILS)	-	-	80.442	-	-	1.058	-	-	1.046	-	-	1.011	-	-	-	-	-	1.011
Subtotal: Support - SUPPORT COST - FLEET Cost	**-**	**-**	***177.186***	**-**	**-**	***2.628***	**-**	**-**	***1.046***	**-**	**-**	***3.571***	**-**	**-**	**-**	**-**	**-**	***3.571***
Gross/Weapon System Cost	**996.896**	**2,735**	**2,726.510**	**1,128.389**	**167**	**188.441**	**1,103.266**	**192**	**211.827**	**1,006.006**	**325**	**326.952**	**-**	**-**	**0.000**	**1,006.006**	**325**	**326.952**

(†) indicates the presence of a P-5a

Footnotes:

(1) Unit cost calculations are based on combined procurement of Navy, Air Force and FMS buys for each fiscal year. FY20 and FY21 are the first full rate production lots of the Form, Fit, Function Refresh (F3R) missile (AIM-120D-3) which contains newer and more costly components resulting in an increased unit cost. Unit costs are projected to stabilize in the out years. FY19 and FY20 AUR quantities decreased as a result of training requirements associated with CATM procurements. Separately, the program anticipated a budget requirement for warranty costs in FY19 and FY20 within this cost category. These warranty costs were not realized. Therefore, the program intends to use this funding to buy to budget and procure an additional 26 AURs in FY19 and 23 AURs in FY20.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2206 / AMRAAM	Item Number / Title [DODIC]: 1 / AMRAAM
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

(2) CATMs - Recent changes to the Warfighter training and employment of the AMRAAM in the NAWDCINST 3500.3, have resulted in an update to the Navy Training Systems Plan which now reflects as an increase in AMRAAM Captive Air Training Missile (CATM)-120D (CATM-120D) requirements. As a result of these changes, CATMs are being procured in FY2020 and FY2021.

(3) Engineering Change Orders line provides funding to test and qualify class I engineering change proposals by the prime vendor into missile production. Fluctuations correspond directly with total cost of hardware procured.

(4) Training equipment request includes funding for AMRAAM Telemetry System (ATS) used to collect missile performance data for in production missiles to support product improvement within the current performance envelope. FY21 funding increase is due to the ATS requirement for AIM-120D-3 missile procurements.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2206 / AMRAAM	Item Number / Title [DODIC]: 1 / AMRAAM

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR)(†)		2017	Raytheon Missile System (5) / Tucson, AZ	SS / FPIF	EGLIN AFB, FL	Dec 2017	Oct 2019	144	977.146	Y		Jan 2016
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR)(†)		2018	Raytheon Missile System (5) / Tucson, AZ	SS / FPIF	EGLIN AFB, FL	Mar 2018	Jul 2020	120	1,046.197	Y		Jan 2017
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR)(†)		2019	Raytheon Missile System (5) / Tucson, AZ	SS / FPIF	EGLIN AFB, FL	Dec 2019	Apr 2021	116	1,029.714	Y		Nov 2017
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR)(†)	✓	2019	Raytheon Missile System (5) / Tucson, AZ	SS / FPIF	EGLIN AFB, FL	Dec 2019	Apr 2021	1	1,029.714	Y		Nov 2017
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR)(†)		2020	Raytheon Missile System (5) / Tucson, AZ	SS / FPIF	EGLIN AFB, FL	Oct 2020	Dec 2022	142	1,156.092	Y		Jul 2018
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR)(†)		2021	Raytheon Missile System (5) / Tucson, AZ	SS / FPIF	EGLIN AFB, FL	Mar 2021	Apr 2023	315	955.578	Y		Sep 2018
1.1.2) AIM-120 MISSILE - CAPTIVE AIR TRAINING MISSILE (CATM)(†)		2019	Raytheon Missile System / Tucson AZ	SS / FPIF	EGLIN AFB, FL	Dec 2019	Apr 2021	50	575.160	Y		Nov 2017
1.1.2) AIM-120 MISSILE - CAPTIVE AIR TRAINING MISSILE (CATM)(†)		2020	Raytheon Missile System / Tucson AZ	C / TBD	** NO PCO **	Oct 2019	Nov 2021	50	580.500	N		
1.1.2) AIM-120 MISSILE - CAPTIVE AIR TRAINING MISSILE (CATM)(†)		2021	Raytheon Missile System / Tucson AZ	SS / FPIF	EGLIN AFB, FL	Mar 2021	Apr 2023	10	576.100	Y		Sep 2018

(†) indicates the presence of a P-21

Footnotes:

(5) AIM-120 MSR is 400 missiles per year, consisting of USN, USAF, and approved FMS procurement with no less than 100 of a particular variant. Beginning in FY21, max factory capactity enables production of 1,200 missiles per year.

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2206 / AMRAAM | **Item Number / Title [DODIC]:** 1 / AMRAAM

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
										Calendar Year 2018												Calendar Year 2019									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR) (1)																															
Prior Years Deliveries: 2136																															
	1	2017	NAVY	144	0	144			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	144
	1	2017	AF (‡)	256	0	256			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256
	1	2017	FMS (‡)	306	0	306			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	306
	1	**2017**	**Total**	**706**	**0**	**706**			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**706**
	1	2018	NAVY	120	0	120						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120
	1	2018	AF (‡)	185	0	185						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	185
	1	2018	FMS (‡)	279	0	279						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	279
	1	**2018**	**Total**	**584**	**0**	**584**						**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**584**
	1	2019	NAVY	116	0	116																									116
	1	2019	AF (‡)	185	0	185																									185
	1	2019	FMS (‡)	433	0	433																									433
	1	**2019**	**Total**	**734**	**0**	**734**																									**734**
✓	1	2019	NAVY	1	0	1																									1
✓	1	2019	AF (‡)	2	0	2																									2
✓	**1**	**2019**	**Total**	**3**	**0**	**3**																									**3**
	1	2020	NAVY	142	0	142																									142
	1	2021	NAVY	315	0	315																									315
	1	2021	AF (‡)	414	0	414																									414
	1	2021	FMS (‡)	350	0	350																									350
	1	**2021**	**Total Base**	**1,079**	**0**	**1,079**																									**1,079**
1.1.2) AIM-120 MISSILE - CAPTIVE AIR TRAINING MISSILE (CATM) (2)																															
Prior Years Deliveries: 335																															
	2	2019	NAVY	50	0	50																									50
	2	2020	NAVY	50	0	50																									50
	2	2021	NAVY	10	0	10																									10
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2206 / AMRAAM | **Item Number / Title [DODIC]:** 1 / AMRAAM

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021													BALANCE
							Calendar Year 2020												Calendar Year 2021													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR) [1]																																
Prior Years Deliveries: 2136																																
	1	2017	NAVY	144	0	144	8	-	-	-	-	-	136	-	-	-																0
	1	2017	AF [‡]	256	0	256	52	-	-	53	-	-	76	-	-	75																0
	1	2017	FMS [‡]	306	0	306	114	-	-	112	-	-	40	-	-	40																0
	1	**2017**	**Total**	**706**	**0**	**706**	**174**	**-**	**-**	**165**	**-**	**-**	**252**	**-**	**-**	**115**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2018	NAVY	120	0	120	-	-	-	-	-	-	-	-	-	51	-	-	-	-	-	69	-	-	-							0
	1	2018	AF [‡]	185	0	185	-	-	-	-	-	-	-	-	-	46	-	-	46	-	-	46	-	-	47							0
	1	2018	FMS [‡]	279	0	279	-	-	-	-	-	-	-	-	-	69	-	-	70	-	-	70	-	-	70							0
	1	**2018**	**Total**	**584**	**0**	**584**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**166**	**-**	**-**	**116**	**-**	**-**	**185**	**-**	**-**	**117**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2019	NAVY	116	0	116			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	-	-	29	-	-	58
	1	2019	AF [‡]	185	0	185			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	-	-	47	-	-	92
	1	2019	FMS [‡]	433	0	433			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	108	-	-	108	-	-	217
	1	**2019**	**Total**	**734**	**0**	**734**			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**183**	**-**	**-**	**184**	**-**	**-**	**367**
✓	1	2019	NAVY	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1						0
✓	1	2019	AF [‡]	2	0	2			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2						0
✓	**1**	**2019**	**Total**	**3**	**0**	**3**			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2020	NAVY	142	0	142													A -	-	-	-	-	-	-	-	-	-	-	-	142
	1	2021	NAVY	315	0	315																		A -	-	-	-	-	-	-	315
	1	2021	AF [‡]	414	0	414																		A -	-	-	-	-	-	-	414
	1	2021	FMS [‡]	350	0	350																		A -	-	-	-	-	-	-	350
	1	**2021**	**Total Base**	**1,079**	**0**	**1,079**																		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1,079**
1.1.2) AIM-120 MISSILE - CAPTIVE AIR TRAINING MISSILE (CATM) [2]																																
Prior Years Deliveries: 335																																
	2	2019	NAVY	50	0	50			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	12	-	-	26
	2	2020	NAVY	50	0	50	A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50
	2	2021	NAVY	10	0	10																		A -	-	-	-	-	-	-	10
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2206 / AMRAAM | **Item Number / Title [DODIC]:** 1 / AMRAAM

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR) (1)																															
Prior Years Deliveries: 2136																															
	1	2017	NAVY	144	144	0																									0
	1	2017	AF (‡)	256	256	0																									0
	1	2017	FMS (‡)	306	306	0																									0
	1	**2017**	**Total**	**706**	**706**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2018	NAVY	120	120	0																									0
	1	2018	AF (‡)	185	185	0																									0
	1	2018	FMS (‡)	279	279	0																									0
	1	**2018**	**Total**	**584**	**584**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2019	NAVY	116	58	58	29	-	-	29																					0
	1	2019	AF (‡)	185	93	92	46	-	-	46																					0
	1	2019	FMS (‡)	433	216	217	108	-	-	109																					0
	1	**2019**	**Total**	**734**	**367**	**367**	**183**	-	-	**184**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
✓	1	2019	NAVY	1	1	0																									0
✓	1	2019	AF (‡)	2	2	0																									0
✓	**1**	**2019**	**Total**	**3**	**3**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2020	NAVY	142	0	142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	-	-	35	-	-	36	-	-	36	0
	1	2021	NAVY	315	0	315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	-	-	79	-	-	157
	1	2021	AF (‡)	414	0	414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103	-	-	103	-	-	208
	1	2021	FMS (‡)	350	0	350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	-	-	87	-	-	176
	1	**2021**	**Total Base**	**1,079**	**0**	**1,079**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**269**	-	-	**269**	-	-	**541**
1.1.2) AIM-120 MISSILE - CAPTIVE AIR TRAINING MISSILE (CATM) (2)																															
Prior Years Deliveries: 335																															
	2	2019	NAVY	50	24	26	13	-	-	13																					0
	2	2020	NAVY	50	0	50	-	12	-	-	12	-	-	13	-	-	13														0
	2	2021	NAVY	10	0	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5			0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2206 / AMRAAM | **Item Number / Title [DODIC]:** 1 / AMRAAM

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
							Calendar Year 2024												Calendar Year 2025												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) AIM-120 MISSILE - ALL-UP-ROUND (AUR) (1)																															
Prior Years Deliveries: 2136																															
	1	2017	NAVY	144	144	0																									0
	1	2017	AF (‡)	256	256	0																									0
	1	2017	FMS (‡)	306	306	0																									0
	1	**2017**	**Total**	**706**	**706**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2018	NAVY	120	120	0																									0
	1	2018	AF (‡)	185	185	0																									0
	1	2018	FMS (‡)	279	279	0																									0
	1	**2018**	**Total**	**584**	**584**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2019	NAVY	116	116	0																									0
	1	2019	AF (‡)	185	185	0																									0
	1	2019	FMS (‡)	433	433	0																									0
	1	**2019**	**Total**	**734**	**734**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
✓	1	2019	NAVY	1	1	0																									0
✓	1	2019	AF (‡)	2	2	0																									0
✓	**1**	**2019**	**Total**	**3**	**3**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2020	NAVY	142	142	0																									0
	1	2021	NAVY	315	158	157	79	-	-	78																					0
	1	2021	AF (‡)	414	206	208	104	-	-	104																					0
	1	2021	FMS (‡)	350	174	176	88	-	-	88																					0
	1	**2021**	**Total Base**	**1,079**	**538**	**541**	**271**	-	-	**270**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
1.1.2) AIM-120 MISSILE - CAPTIVE AIR TRAINING MISSILE (CATM) (2)																															
Prior Years Deliveries: 335																															
	2	2019	NAVY	50	50	0																									0
	2	2020	NAVY	50	50	0																									0
	2	2021	NAVY	10	10	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2206 / AMRAAM	**Item Number / Title [DODIC]:** 1 / AMRAAM

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 System (5) - Tucson, AZ	400	400	1,200	6	3	21	24	13	6	25	31
2	Raytheon Missile System - Tucson AZ	400	400	1,200	6	3	21	24	13	6	25	31

(±) 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:
(5) AIM-120 MSR is 400 missiles per year, consisting of USN, USAF, and approved FMS procurement with no less than 100 of a particular variant. Beginning in FY21, max factory capactity enables production of 1,200 missiles per year.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2209 / Sidewinder

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0204162N, 0204138M	Other Related Program Elements: 0207161N, 0207161F, 0604319A

Line Item MDAP/MAIS Code: 000

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	2,500	311	365	270	-	270	229	191	247	245	2,257	6,615
Gross/Weapon System Cost *($ in Millions)*	937.287	121.481	149.239	126.485	0.000	126.485	110.636	97.194	124.508	126.523	1,323.166	3,116.519
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	937.287	121.481	149.239	126.485	0.000	126.485	110.636	97.194	124.508	126.523	1,323.166	3,116.519
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**937.287**	**121.481**	**149.239**	**126.485**	**0.000**	**126.485**	**110.636**	**97.194**	**124.508**	**126.523**	**1,323.166**	**3,116.519**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	2.223	3.280	1.785	-	1.785	3.073	2.599	2.211	2.785	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	339,421.60	363,048.23	384,208.22	430,818.52	-	430,818.52	439,406.11	455,403.14	463,145.75	474,326.53	536,732.39	430,481.78
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

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). F/A-18 first shot, first kill opportunities while conducting basic fighter maneuvering (dogfighting) Within Visual Range (WVR) are 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 limited short range capability 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 completing fighter aircraft loadout in order to enable engagement of threats identified in the National Defense Strategy (NDS) and the Chief of Naval Operations Guidance (CNOG).

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 2366 A/B certification and Acquisition Program Baseline for AIM-9X Block II was signed December 23, 2011, and the Block I program was terminated. 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.

In February 2019, the Acquisition Program Baseline for Navy and USAF was revised to increase total missile procurements from 6,000 to 11,635 missiles and to extend missile procurements through 2035.

The Navy will procure 6,615 total missiles under this Budget Line Item: 1,289 Block I missiles (885 AURs and 404 CATMs) and 5,326 Block II/II+ missiles (4,135 AURs and 1,191 CATMs). In addition, the Navy procured 63 Block I missiles in FY 2001 under the AIM-9M Modification program (48 AURs and 15 CATMs).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2209 / Sidewinder	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** 0204162N, 0204138M	**Other Related Program Elements:** 0207161N, 0207161F, 0604319A
Line Item MDAP/MAIS Code: 000		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / SIDEWINDER BLOCK II	P-5a, P-21			2,500 / 937.287	311 / 121.481	365 / 149.239	270 / 126.485	- / 0.000	270 / 126.485
P-40	**Total Gross/Weapon System Cost**				**2,500 / 937.287**	**311 / 121.481**	**365 / 149.239**	**270 / 126.485**	**- / 0.000**	**270 / 126.485**

*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 2021 provides funding to procure the seventh lot of Full Rate Production (FRP) AIM-9X Block II (Blk II) missiles, as well as the fifth lot of AIM-9X Block II Plus (Blk II+) missiles for the Navy and the Air Force.

The program unit costs are based on all quantities procured by the US Navy, US Air Force and Foreign Military Sales customers. Total Program quantity by service includes a mix of All Up Round (AUR) missiles and Captive Air Training Missiles (CATM).

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2209 / Sidewinder	Item Number / Title [DODIC]: 1 / SIDEWINDER BLOCK II
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	2,500	311	365	270	-	270
Gross/Weapon System Cost *($ in Millions)*	937.287	121.481	149.239	126.485	0.000	126.485
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	937.287	121.481	149.239	126.485	0.000	126.485
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**937.287**	**121.481**	**149.239**	**126.485**	**0.000**	**126.485**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	2.223	3.280	1.785	-	1.785
Gross/Weapon System Unit Cost *($ in Dollars)*	374,914.80	390,614.15	408,873.97	468,462.96	-	468,462.96

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Flyaway - MISSILE Cost																		
Recurring Cost																		
1.1.1) All Up Round - Block II(†) (1)	403,228.05	820	330.647	381,069.74	228	86.884	387,484.43	289	111.983	454,689.66	203	92.302	-	-	-	454,689.66	203	92.302
1.1.2) Captive Air Training Missile - Block II(†) (2)	216,659.57	329	71.281	209,492.75	75	15.712	213,352.94	68	14.508	223,067.80	59	13.161	-	-	-	223,067.80	59	13.161
1.1.3) All Up Round - Block II Plus(†) (3)	463,774.19	62	28.754	399,500.00	8	3.196	436,250.00	8	3.490	500,375.00	8	4.003	-	-	-	500,375.00	8	4.003
1.1.4) Engineering Change Orders - Block II (4)	-	-	2.038	-	-	3.425	-	-	3.493	-	-	2.914	-	-	-	-	-	2.914
1.1.5) Diminishing Manufacturing Sources (DMS) (5)	-	-	2.934	-	-	1.435	-	-	3.873	-	-	1.425	-	-	-	-	-	1.425
1.1.6) Government Cost (GFE & Testing) - Block II	-	-	0.477	-	-	0.066	-	-	0.082	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*436.131*	-	-	*110.718*	-	-	*137.429*	-	-	*113.805*	-	-	-	-	-	*113.805*
Subtotal: Flyaway - MISSILE Cost	**-**	**-**	***436.131***	**-**	**-**	***110.718***	**-**	**-**	***137.429***	**-**	**-**	***113.805***	**-**	**-**	**-**	**-**	**-**	***113.805***
Flyaway - Prior Year Sidewinder Block 1 Cost																		
Recurring Cost																		
2.1.1) Prior Year Sidewinder Block 1	282,434.45	1,289	364.058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2209 / Sidewinder	Item Number / Title [DODIC]: 1 / SIDEWINDER BLOCK II
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Subtotal: Recurring Cost	-	-	*364.058*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway - Prior Year Sidewinder Block 1 Cost	**-**	**-**	***364.058***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Flyaway - Nonrecurring and Ancillary Equip Cost																		
Non Recurring Cost																		
3.1.1) Special Tool & Test Equip (ST/STE) - Block II (6)	-	-	14.841	-	-	0.814	-	-	1.485	-	-	1.514	-	-	-	-	-	1.514
3.1.2) Missile Containers - Block II (7)	9,100.39	508	4.623	12,712.64	87	1.106	12,960.78	102	1.322	13,184.21	76	1.002	-	-	-	13,184.21	76	1.002
3.1.3) Nonrecurring Engineering - Block II	-	-	28.901	-	-	0.270	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*48.365*	-	-	*2.190*	-	-	*2.807*	-	-	*2.516*	-	-	-	-	-	*2.516*
Subtotal: Flyaway - Nonrecurring and Ancillary Equip Cost	**-**	**-**	***48.365***	**-**	**-**	***2.190***	**-**	**-**	***2.807***	**-**	**-**	***2.516***	**-**	**-**	**-**	**-**	**-**	***2.516***
Support - Production Support Cost																		
4.1) Production Technical Support - Block II (8)	-	-	19.138	-	-	2.134	-	-	2.105	-	-	2.147	-	-	-	-	-	2.147
Subtotal: Support - Production Support Cost	**-**	**-**	***19.138***	**-**	**-**	***2.134***	**-**	**-**	***2.105***	**-**	**-**	***2.147***	**-**	**-**	**-**	**-**	**-**	***2.147***
Support - Support Costs Cost																		
5.1) Peculiar Support Equipment - Block II (9)	-	-	0.608	-	-	-	-	-	0.043	-	-	0.044	-	-	-	-	-	0.044
5.2) Training Support - Block II (10)	-	-	0.167	-	-	0.029	-	-	0.030	-	-	0.031	-	-	-	-	-	0.031
5.3) Training Equipment - Block II (11)	-	-	14.129	-	-	-	-	-	1.513	-	-	1.543	-	-	-	-	-	1.543
5.4) Contract Support - Block II (12)	-	-	7.401	-	-	0.735	-	-	1.254	-	-	1.510	-	-	-	-	-	1.510
5.5) Government In-House Support - Block II (13)	-	-	47.290	-	-	5.675	-	-	4.058	-	-	4.889	-	-	-	-	-	4.889
Subtotal: Support - Support Costs Cost	**-**	**-**	***69.595***	**-**	**-**	***6.439***	**-**	**-**	***6.898***	**-**	**-**	***8.017***	**-**	**-**	**-**	**-**	**-**	***8.017***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2209 / Sidewinder	Item Number / Title [DODIC]: 1 / SIDEWINDER BLOCK II
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Gross/Weapon System Cost	374,914.80	2,500	937.287	390,614.15	311	121.481	408,873.97	365	149.239	468,462.96	270	126.485	-	-	0.000	468,462.96	270	126.485

Remarks:
[Flyaway]

(†) indicates the presence of a P-5a

Footnotes:

(1) AUR Block II - This budget exhibit represents only the US Navy portion of the total program procurement. This exhibit reflects a Navy unit cost that is congruent with the Air Force unit cost. AUR Block II unit cost changes are heavily driven by total program quantity changes from year to year. The majority of parts on an All Up Round (AUR) Block II are common with CATMs and Block II Plus. As a result, the overall quantities procured (between AUR Block II, AUR Block II Plus and CATMs) to include all customers (Navy, Air Force, and Foreign Military Sales) drive the unit cost. In addition to the Navy AUR Block II quantity decreasing from 289 in FY20 to 203 in FY21 as reflected in this exhibit, the total quantity of missile procurements (all configurations for all customers) decreases from 907 in FY20 to 705 in FY21. In FY21, due to the reduction in overall procurement between the Navy, Air Force, and FMS customers, the unit cost has increased. The FY20 quantity of 289 AUR's is comprised of 201 baseline and 88 OCO units.

(2) CATMs - This budget exhibit represents only the US Navy portion of the total program procurement. CATM unit cost changes are heavily driven by total program quantity changes from year to year. In addition to the Navy CATM quantity decreasing from 68 in FY 2020 to 59 in FY 2021 as reflected in this exhibit, the total CATM quantity (for all customers) decreased from 88 in FY 2020 to 85 in FY 2021, resulting in a higher unit cost.

(3) AUR Block II Plus - This budget exhibit represents only the US Navy portion of the total program procurement. Block II Plus unit cost changes are heavily driven by total program quantity changes from year to year. Although the Navy Block II Plus procurement quantity did not change from 8 in FY20 to 8 in FY21 as reflected in this exhibit, the total procurement quantity of all tactical missiles (both Block II and Block II Plus for all customers) decreased from 822 in FY20 to 620 in FY21, resulting in a higher unit cost.

(4) The Engineering Change Orders line provides funding to test and qualify class 1 engineering changes proposed by the prime vendor into missile production. The decrease in FY 2021 reflects a reduction in planned production hardware engineering changes.

(5) DMS provides funding to design, develop, test and qualify form/fit/function replacement components to the production missile as a result of changes in sub-vendor manufacturers.

(6) The ST/STE line provides funding for production tooling and test equipment to the AIM-9X manufacturing line to ensure missiles are produced efficiently, and within specifications. Every 3 years the program requires production tooling to be replaced.

(7) Containers are procured to ship missiles and are procured 1 for every 4 missiles of each variant (missile variants cannot be mixed within a container). An additional 20 containers are being procured in FY21 to increase readiness by allowing more flexibility to ship missiles with less than 4 per container.

(8) The production tech support line includes funding to manage technical documentation, training development and delivery, production support, and management of government owned property, to support production of AIM-9X configurations.

(9) The PSE line provides for calibration and procurement of government furnished gauges and equipment used to support missile production.

(10) The training support line provides technical publications and training manuals to fleet maintainers.

(11) The training equipment line includes the Telemetry (TM) Kits used to collect flight data for production qualification testing and weapons safety evaluations. TM kits are based on missile quantities. TM kits are manufactured by Naval Air Warfare Center, Weapons Division.

(12) Contract support funding increases from FY20 to FY21 due to the transition from System Improvement Program III development efforts to production

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2209 / Sidewinder	**Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(13) The government in-house support line provides US Government Systems Engineering and Project Management support at Naval Air Warfare Centers for the production of the AIM-9X missile to ensure compliance with joint service developed cost, schedule and performance requirements. Government support funding increases from FY20 to FY21 due to the transition from System Improvement Program III development efforts to production.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2209 / Sidewinder	Item Number / Title [DODIC]: 1 / SIDEWINDER BLOCK II

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) All Up Round - Block II(†)		2017	Raytheon Missile Systems (14) / Tucson, AZ	C / FPIF	NAVAIR	Mar 2017	Sep 2019	75	375,800.00	Y		Jan 2016
1.1.1) All Up Round - Block II(†)		2018	Raytheon Missile Systems (14) / Tucson, AZ	C / FPIF	NAVAIR	Dec 2018	Sep 2020	141	362,375.89	Y		Mar 2017
1.1.1) All Up Round - Block II(†)		2019	Raytheon Missile Systems (14) / Tucson, AZ	C / FPIF	NAVAIR	Apr 2019	Sep 2021	227	381,069.74	Y		Jan 2018
1.1.1) All Up Round - Block II(†)	✓	2019	Raytheon Missile Systems (14) / Tucson, AZ	C / FPIF	NAVAIR	Apr 2019	Sep 2021	1	381,069.74	Y		Jan 2018
1.1.1) All Up Round - Block II(†)		2020	Raytheon Missile Systems (14) / Tucson, AZ	C / FPIF	NAVAIR	Mar 2020	Aug 2022	201	387,482.59	Y		Jan 2019
1.1.1) All Up Round - Block II(†)	✓	2020	Raytheon Missile Systems (14) / Tucson, AZ	C / FPIF	NAVAIR	Mar 2020	Aug 2022	88	387,488.64	Y		Jan 2019
1.1.1) All Up Round - Block II(†)		2021	Raytheon Missile Systems (14) / Tucson, AZ	C / FPIF	NAVAIR	Mar 2021	Aug 2023	203	454,689.66	Y		Jan 2020
1.1.2) Captive Air Training Missile - Block II(†)		2017	Raytheon Missile System (15) / Tucson, AZ	C / FPIF	NAVAIR	Mar 2017	Sep 2019	32	194,968.75	Y		Jan 2016
1.1.2) Captive Air Training Missile - Block II(†)		2018	Raytheon Missile System (15) / Tucson, AZ	C / FPIF	NAVAIR	Dec 2018	Sep 2020	40	196,021.83	Y		Mar 2017
1.1.2) Captive Air Training Missile - Block II(†)		2019	Raytheon Missile System (15) / Tucson, AZ	C / FPIF	NAVAIR	Apr 2019	Sep 2021	75	209,492.75	Y		Jan 2018
1.1.2) Captive Air Training Missile - Block II(†)		2020	Raytheon Missile System (15) / Tucson, AZ	C / FPIF	NAVAIR	Mar 2020	Aug 2022	68	213,352.94	Y		Jan 2019
1.1.2) Captive Air Training Missile - Block II(†)		2021	Raytheon Missile System (15) / Tucson, AZ	C / FPIF	NAVAIR	Mar 2021	Aug 2023	59	223,067.80	Y		Jan 2020
1.1.3) All Up Round - Block II Plus(†)		2017	Raytheon Missile System (16) / Tucson, AZ	C / FPIF	NAVAIR	Mar 2017	Sep 2019	50	475,180.00	Y		Jan 2016
1.1.3) All Up Round - Block II Plus(†)		2018	Raytheon Missile System (16) / Tucson, AZ	C / FPIF	NAVAIR	Dec 2018	Sep 2020	12	416,333.33	Y		Mar 2017
1.1.3) All Up Round - Block II Plus(†)		2019	Raytheon Missile System (16) / Tucson, AZ	C / FPIF	NAVAIR	Apr 2019	Sep 2021	8	399,500.00	Y		Jan 2018
1.1.3) All Up Round - Block II Plus(†)		2020	Raytheon Missile System (16) / Tucson, AZ	C / FPIF	NAVAIR	Mar 2020	Aug 2022	8	436,250.00	Y		Jan 2019
1.1.3) All Up Round - Block II Plus(†)		2021	Raytheon Missile System (16) / Tucson, AZ	C / FPIF	NAVAIR	Mar 2021	Aug 2023	8	500,375.00	Y		Jan 2020

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2209 / Sidewinder	Item Number / Title [DODIC]: 1 / SIDEWINDER BLOCK II

(†) indicates the presence of a P-21

Footnotes:

(14) AUR BLK II

(15) CATM

(16) AUR BLK II PLUS

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2209 / Sidewinder	**Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
										Calendar Year 2017												Calendar Year 2018									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round - Block II (1)																															
Prior Years Deliveries: 604																															
	1	2017	NAVY	75	0	75						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75
	1	2017	AF (‡)	186	0	186						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	186
	1	2017	FMS (‡)	120	0	120						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120
	1	**2017**	**Total**	**381**	**0**	**381**						**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**381**
	1	2018	NAVY	141	0	141																									141
	1	2018	AF (‡)	182	0	182																									182
	1	2018	FMS (‡)	431	0	431																									431
	1	**2018**	**Total**	**754**	**0**	**754**																									**754**
	1	2019	NAVY	227	0	227																									227
	1	2019	AF (‡)	176	0	176																									176
	1	2019	FMS (‡)	156	0	156																									156
	1	**2019**	**Total**	**559**	**0**	**559**																									**559**
✓	1	2019	NAVY	1	0	1																									1
	1	2020	NAVY	201	0	201																									201
	1	2020	AF (‡)	275	0	275																									275
	1	2020	FMS (‡)	167	0	167																									167
	1	**2020**	**Total**	**643**	**0**	**643**																									**643**
✓	1	2020	NAVY	88	0	88																									88
	1	2021	NAVY	203	0	203																									203
	1	2021	AF (‡)	225	0	225																									225
	1	2021	FMS (‡)	38	0	38																									38
	1	**2021**	**Total Base**	**466**	**0**	**466**																									**466**
1.1.2) Captive Air Training Missile - Block II (2)																															
Prior Years Deliveries: 257																															
	2	2017	NAVY	32	0	32						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32
	2	2017	AF (‡)	77	0	77						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77
	2	2017	FMS (‡)	98	0	98						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98
	2	**2017**	**Total**	**207**	**0**	**207**						**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**207**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2209 / Sidewinder	**Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
										Calendar Year 2017												Calendar Year 2018									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	2	2018	NAVY	40	0	40																									40
	2	2018	AF (‡)	64	0	64																									64
	2	2018	FMS (‡)	76	0	76																									76
	2	**2018**	**Total**	**180**	**0**	**180**																									**180**
	2	2019	NAVY	75	0	75																									75
	2	2019	FMS (‡)	75	0	75																									75
	2	**2019**	**Total**	**150**	**0**	**150**																									**150**
	2	2020	NAVY	68	0	68																									68
	2	2020	FMS (‡)	20	0	20																									20
	2	**2020**	**Total**	**88**	**0**	**88**																									**88**
	2	2021	NAVY	59	0	59																									59
	2	2021	AF (‡)	26	0	26																									26
	2	**2021**	**Total**	**85**	**0**	**85**																									**85**
1.1.3) All Up Round - Block II Plus (3)																															
	3	2017	NAVY	50	0	50						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50
	3	2017	AF (‡)	50	0	50						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50
	3	**2017**	**Total**	**100**	**0**	**100**							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**100**
	3	2018	NAVY	12	0	12																									12
	3	2018	AF (‡)	75	0	75																									75
	3	2018	FMS (‡)	73	0	73																									73
	3	**2018**	**Total**	**160**	**0**	**160**																									**160**
	3	2019	NAVY	8	0	8																									8
	3	2019	AF (‡)	80	0	80																									80
	3	2019	FMS (‡)	146	0	146																									146
	3	**2019**	**Total**	**234**	**0**	**234**																									**234**
	3	2020	NAVY	8	0	8																									8
	3	2020	AF (‡)	80	0	80																									80
	3	**2020**	**Total**	**88**	**0**	**88**																									**88**
	3	2021	NAVY	8	0	8																									8
	3	2021	AF (‡)	80	0	80																									80
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2209 / Sidewinder	**Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
										Calendar Year 2017												Calendar Year 2018									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	3	2021	FMS (‡)	66	0	66																									66
	3	**2021**	**Total**	**154**	**0**	**154**																									**154**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2209 / Sidewinder | **Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round - Block II (1)																															
Prior Years Deliveries: 604																															
	1	2017	NAVY	75	0	75	-	-	-	-	-	-	-	-	-	-	-	5	10	10	10	5	5	5	5	5	5	5	5		0
	1	2017	AF (‡)	186	0	186	-	-	-	-	-	-	-	-	-	-	-	16	16	16	16	16	16	15	15	15	15	15	15		0
	1	2017	FMS (‡)	120	0	120	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10		0
	1	**2017**	**Total**	**381**	**0**	**381**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**31**	**36**	**36**	**36**	**31**	**31**	**30**	**30**	**30**	**30**	**30**	**30**	**-**	**0**
	1	2018	NAVY	141	0	141			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	129
	1	2018	AF (‡)	182	0	182			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	166
	1	2018	FMS (‡)	431	0	431			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	395
	1	**2018**	**Total**	**754**	**0**	**754**			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**64**	**690**
	1	2019	NAVY	227	0	227							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227
	1	2019	AF (‡)	176	0	176							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	176
	1	2019	FMS (‡)	156	0	156							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
	1	**2019**	**Total**	**559**	**0**	**559**							**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**559**
✓	1	2019	NAVY	1	0	1							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	1	2020	NAVY	201	0	201																		A -	-	-	-	-	-	-	201
	1	2020	AF (‡)	275	0	275																		A -	-	-	-	-	-	-	275
	1	2020	FMS (‡)	167	0	167																		A -	-	-	-	-	-	-	167
	1	**2020**	**Total**	**643**	**0**	**643**																		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**643**
✓	1	2020	NAVY	88	0	88																		A -	-	-	-	-	-	-	88
	1	2021	NAVY	203	0	203																									203
	1	2021	AF (‡)	225	0	225																									225
	1	2021	FMS (‡)	38	0	38																									38
	1	**2021**	**Total Base**	**466**	**0**	**466**																									**466**
1.1.2) Captive Air Training Missile - Block II (2)																															
Prior Years Deliveries: 257																															
	2	2017	NAVY	32	0	32	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	4	6	4		0
	2	2017	AF (‡)	77	0	77	-	-	-	-	-	-	-	-	-	-	-	8	8	7	6	6	6	6	6	6	6	6	6		0
	2	2017	FMS (‡)	98	0	98	-	-	-	-	-	-	-	-	-	-	-	8	8	8	8	8	9	8	8	8	8	8	9		0
	2	**2017**	**Total**	**207**	**0**	**207**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**18**	**18**	**17**	**16**	**16**	**17**	**16**	**16**	**16**	**18**	**20**	**19**	**-**	**0**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2209 / Sidewinder | **Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	2	2018	NAVY	40	0	40			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	37
	2	2018	AF (‡)	64	0	64			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	59
	2	2018	FMS (‡)	76	0	76			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	70
	2	**2018**	**Total**	**180**	**0**	**180**			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**14**	**166**
	2	2019	NAVY	75	0	75							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75
	2	2019	FMS (‡)	75	0	75							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75
	2	**2019**	**Total**	**150**	**0**	**150**							**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**150**
	2	2020	NAVY	68	0	68																		A -	-	-	-	-	-	-	68
	2	2020	FMS (‡)	20	0	20																		A -	-	-	-	-	-	-	20
	2	**2020**	**Total**	**88**	**0**	**88**																		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**88**
	2	2021	NAVY	59	0	59																									59
	2	2021	AF (‡)	26	0	26																									26
	2	**2021**	**Total**	**85**	**0**	**85**																									**85**
1.1.3) All Up Round - Block II Plus (3)																															
	3	2017	NAVY	50	0	50	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	2	2	1		0
	3	2017	AF (‡)	50	0	50	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	2	2	1		0
	3	**2017**	**Total**	**100**	**0**	**100**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**4**	**4**	**2**	**-**	**0**
	3	2018	NAVY	12	0	12			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	11
	3	2018	AF (‡)	75	0	75			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	68
	3	2018	FMS (‡)	73	0	73			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	67
	3	**2018**	**Total**	**160**	**0**	**160**			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**14**	**146**
	3	2019	NAVY	8	0	8							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
	3	2019	AF (‡)	80	0	80							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80
	3	2019	FMS (‡)	146	0	146							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146
	3	**2019**	**Total**	**234**	**0**	**234**							**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**234**
	3	2020	NAVY	8	0	8																		A -	-	-	-	-	-	-	8
	3	2020	AF (‡)	80	0	80																		A -	-	-	-	-	-	-	80
	3	**2020**	**Total**	**88**	**0**	**88**																		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**88**
	3	2021	NAVY	8	0	8																									8
	3	2021	AF (‡)	80	0	80																									80
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2209 / Sidewinder	**Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
										Calendar Year 2019												Calendar Year 2020									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	3	2021	FMS (‡)	66	0	66																									66
	3	**2021**	**Total**	**154**	**0**	**154**																									**154**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2209 / Sidewinder | **Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round - Block II (1)																															
Prior Years Deliveries: 604																															
	1	2017	NAVY	75	75	0																									0
	1	2017	AF (‡)	186	186	0																									0
	1	2017	FMS (‡)	120	120	0																									0
	1	**2017**	**Total**	**381**	**381**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2018	NAVY	141	12	129	12	12	11	12	11	12	11	12	12	12	12														0
	1	2018	AF (‡)	182	16	166	16	15	15	15	15	15	15	15	15	15	15														0
	1	2018	FMS (‡)	431	36	395	36	36	36	36	36	36	36	35	36	36	36														0
	1	**2018**	**Total**	**754**	**64**	**690**	**64**	**63**	**62**	**63**	**62**	**63**	**62**	**62**	**63**	**63**	**63**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2019	NAVY	227	0	227	-	-	-	-	-	-	-	-	-	-	-	21	21	21	21	21	21	21	20	20	20	20			0
	1	2019	AF (‡)	176	0	176	-	-	-	-	-	-	-	-	-	-	-	16	16	16	16	16	16	16	16	16	16	16			0
	1	2019	FMS (‡)	156	0	156	-	-	-	-	-	-	-	-	-	-	-	15	15	14	14	14	14	14	14	14	14	14			0
	1	**2019**	**Total**	**559**	**0**	**559**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**52**	**52**	**51**	**51**	**51**	**51**	**51**	**50**	**50**	**50**	**50**	**-**	**-**	**0**
✓	1	2019	NAVY	1	0	1	-	-	-	-	-	-	-	-	-	-	-	1													0
	1	2020	NAVY	201	0	201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	17	167
	1	2020	AF (‡)	275	0	275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	23	229
	1	2020	FMS (‡)	167	0	167	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	14	139
	1	**2020**	**Total**	**643**	**0**	**643**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**54**	**54**	**535**
✓	1	2020	NAVY	88	0	88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	72
	1	2021	NAVY	203	0	203						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	203
	1	2021	AF (‡)	225	0	225						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225
	1	2021	FMS (‡)	38	0	38						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38
	1	**2021**	**Total Base**	**466**	**0**	**466**						**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**466**
1.1.2) Captive Air Training Missile - Block II (2)																															
Prior Years Deliveries: 257																															
	2	2017	NAVY	32	32	0																									0
	2	2017	AF (‡)	77	77	0																									0
	2	2017	FMS (‡)	98	98	0																									0
	2	**2017**	**Total**	**207**	**207**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2209 / Sidewinder | **Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
										Calendar Year 2021												Calendar Year 2022									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	2	2018	NAVY	40	3	37	3	3	4	4	3	3	4	4	3	3	3														0
	2	2018	AF (‡)	64	5	59	5	6	5	5	6	5	5	6	5	5	6														0
	2	2018	FMS (‡)	76	6	70	7	6	7	6	6	6	7	6	7	6	6														0
	2	**2018**	**Total**	**180**	**14**	**166**	**15**	**15**	**16**	**15**	**15**	**14**	**16**	**16**	**15**	**14**	**15**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	2	2019	NAVY	75	0	75	-	-	-	-	-	-	-	-	-	-	-	7	7	7	7	7	7	7	7	7	6	6			0
	2	2019	FMS (‡)	75	0	75	-	-	-	-	-	-	-	-	-	-	-	7	7	7	7	7	7	7	7	7	6	6			0
	2	**2019**	**Total**	**150**	**0**	**150**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**12**	**12**	**-**	**-**	**0**
	2	2020	NAVY	68	0	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	56
	2	2020	FMS (‡)	20	0	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	16
	2	**2020**	**Total**	**88**	**0**	**88**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**8**	**8**	**72**
	2	2021	NAVY	59	0	59						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59
	2	2021	AF (‡)	26	0	26						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26
	2	**2021**	**Total**	**85**	**0**	**85**						**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**85**
1.1.3) All Up Round - Block II Plus (3)																															
	3	2017	NAVY	50	50	0																									0
	3	2017	AF (‡)	50	50	0																									0
	3	**2017**	**Total**	**100**	**100**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	3	2018	NAVY	12	1	11	1	1	1	1	1	1	1	1	1	1	1														0
	3	2018	AF (‡)	75	7	68	7	7	6	6	6	6	6	6	6	6	6														0
	3	2018	FMS (‡)	73	6	67	6	6	6	6	6	6	6	6	6	6	7														0
	3	**2018**	**Total**	**160**	**14**	**146**	**14**	**14**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**14**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	3	2019	NAVY	8	0	8	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	-	1	1	1	1	1	-			0
	3	2019	AF (‡)	80	0	80	-	-	-	-	-	-	-	-	-	-	-	8	8	8	7	7	7	7	7	7	7	7			0
	3	2019	FMS (‡)	146	0	146	-	-	-	-	-	-	-	-	-	-	-	14	14	14	13	13	13	13	13	13	13	13			0
	3	**2019**	**Total**	**234**	**0**	**234**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**23**	**23**	**22**	**21**	**20**	**21**	**21**	**21**	**21**	**21**	**20**	**-**	**-**	**0**
	3	2020	NAVY	8	0	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	6
	3	2020	AF (‡)	80	0	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	66
	3	**2020**	**Total**	**88**	**0**	**88**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**8**	**8**	**72**
	3	2021	NAVY	8	0	8						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
	3	2021	AF (‡)	80	0	80						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2209 / Sidewinder	**Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	3	2021	FMS (‡)	66	0	66						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66
	3	**2021**	**Total**	**154**	**0**	**154**						**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**154**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2209 / Sidewinder | **Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
							Calendar Year 2023												Calendar Year 2024												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round - Block II (1)																															
Prior Years Deliveries: 604																															
	1	2017	NAVY	75	75	0																									0
	1	2017	AF (‡)	186	186	0																									0
	1	2017	FMS (‡)	120	120	0																									0
	1	**2017**	**Total**	**381**	**381**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2018	NAVY	141	141	0																									0
	1	2018	AF (‡)	182	182	0																									0
	1	2018	FMS (‡)	431	431	0																									0
	1	**2018**	**Total**	**754**	**754**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2019	NAVY	227	227	0																									0
	1	2019	AF (‡)	176	176	0																									0
	1	2019	FMS (‡)	156	156	0																									0
	1	**2019**	**Total**	**559**	**559**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
✓	1	2019	NAVY	1	1	0																									0
	1	2020	NAVY	201	34	167	17	17	17	17	17	17	17	16	16	16															0
	1	2020	AF (‡)	275	46	229	23	23	23	23	23	23	23	23	23	22															0
	1	2020	FMS (‡)	167	28	139	14	14	14	14	14	14	14	14	14	13															0
	1	**2020**	**Total**	**643**	**108**	**535**	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**53**	**53**	**51**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
✓	1	2020	NAVY	88	16	72	8	8	7	7	7	7	7	7	7	7															0
	1	2021	NAVY	203	0	203	-	-	-	-	-	-	-	-	-	-	17	17	17	17	17	17	17	17	17	17	16				0
	1	2021	AF (‡)	225	0	225	-	-	-	-	-	-	-	-	-	-	18	18	18	19	19	19	19	19	19	19	19				0
	1	2021	FMS (‡)	38	0	38	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3	4	4			0
	1	**2021**	**Total Base**	**466**	**0**	**466**	-	-	-	-	-	-	-	-	-	-	**38**	**38**	**38**	**39**	**39**	**39**	**39**	**39**	**39**	**39**	**40**	**39**	-	-	**0**
1.1.2) Captive Air Training Missile - Block II (2)																															
Prior Years Deliveries: 257																															
	2	2017	NAVY	32	32	0																									0
	2	2017	AF (‡)	77	77	0																									0
	2	2017	FMS (‡)	98	98	0																									0
	2	**2017**	**Total**	**207**	**207**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2209 / Sidewinder	**Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
							Calendar Year 2023												Calendar Year 2024												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	2	2018	NAVY	40	40	0																									0
	2	2018	AF (‡)	64	64	0																									0
	2	2018	FMS (‡)	76	76	0																									0
	2	**2018**	**Total**	**180**	**180**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	2	2019	NAVY	75	75	0																									0
	2	2019	FMS (‡)	75	75	0																									0
	2	**2019**	**Total**	**150**	**150**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	2	2020	NAVY	68	12	56	6	6	6	6	6	6	5	5	5	5															0
	2	2020	FMS (‡)	20	4	16	2	2	2	2	2	2	1	1	1	1															0
	2	**2020**	**Total**	**88**	**16**	**72**	**8**	**8**	**8**	**8**	**8**	**8**	**6**	**6**	**6**	**6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	2	2021	NAVY	59	0	59	-	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	5	4			0
	2	2021	AF (‡)	26	0	26	-	-	-	-	-	-	-	-	-	-	3	3	2	2	2	2	2	2	2	2	2	2			0
	2	**2021**	**Total**	**85**	**0**	**85**	-	-	-	-	-	-	-	-	-	-	**8**	**8**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**6**	-	-	**0**
1.1.3) All Up Round - Block II Plus (3)																															
	3	2017	NAVY	50	50	0																									0
	3	2017	AF (‡)	50	50	0																									0
	3	**2017**	**Total**	**100**	**100**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	3	2018	NAVY	12	12	0																									0
	3	2018	AF (‡)	75	75	0																									0
	3	2018	FMS (‡)	73	73	0																									0
	3	**2018**	**Total**	**160**	**160**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	3	2019	NAVY	8	8	0																									0
	3	2019	AF (‡)	80	80	0																									0
	3	2019	FMS (‡)	146	146	0																									0
	3	**2019**	**Total**	**234**	**234**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	3	2020	NAVY	8	2	6	-	1	2	-	2	1	-	-	-	-															0
	3	2020	AF (‡)	80	14	66	7	7	7	7	7	7	6	6	6	6															0
	3	**2020**	**Total**	**88**	**16**	**72**	**7**	**8**	**9**	**7**	**9**	**8**	**6**	**6**	**6**	**6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	3	2021	NAVY	8	0	8	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	-	1	-	-	-			0
	3	2021	AF (‡)	80	0	80	-	-	-	-	-	-	-	-	-	-	7	7	7	7	7	7	7	7	6	6	6	6			0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2209 / Sidewinder	**Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
										Calendar Year 2023												Calendar Year 2024									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	3	2021	FMS (‡)	66	0	66	-	-	-	-	-	-	-	-	-	-	6	6	6	6	6	6	5	5	5	5	5	5			0
	3	**2021**	**Total**	**154**	**0**	**154**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**14**	**14**	**14**	**14**	**14**	**14**	**13**	**12**	**12**	**11**	**11**	**11**	**-**	**-**	**0**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2209 / Sidewinder	**Item Number / Title [DODIC]:** 1 / SIDEWINDER BLOCK II

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 (14) - Tucson, AZ	300	600	1,400	0	9	13	22	0	6	29	35
2	Raytheon Missile System (15) - Tucson, AZ	300	600	1,400	0	9	16	25	0	6	29	35
3	Raytheon Missile System (16) - Tucson, AZ	300	600	1,400	0	5	19	24	0	6	29	35

(‡) 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:
(14) AUR BLK II
(15) CATM
(16) AUR BLK II PLUS

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2230 / JNT Standoff Weapon (JSOW)

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: 000

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	5,168	-	-	-	-	-	25	100	150	250	250	5,943
Gross/Weapon System Cost *($ in Millions)*	2,275.248	1.330	0.000	0.000	0.000	0.000	34.200	78.800	107.000	140.556	135.972	2,773.106
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	2,275.248	1.330	0.000	0.000	0.000	0.000	34.200	78.800	107.000	140.556	135.972	2,773.106
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**2,275.248**	**1.330**	**0.000**	**0.000**	**0.000**	**0.000**	**34.200**	**78.800**	**107.000**	**140.556**	**135.972**	**2,773.106**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	225,514.51	-	-	-	-	-	1,130K	663,920.00	601,313.33	488,368.00	507,856.00	269,114.76
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Joint Standoff Weapon (JSOW) is a joint United States Navy (USN)/United States Air Force (USAF) program with the USN as the lead service. The JSOW program provides an air-to-ground glide weapon (AGM-154) capable of attacking a variety of targets during day, night, and adverse weather conditions for use against fixed area targets and moving maritime targets. The JSOW enhances aircraft survivability as compared to alternate interdiction weapon systems by providing the capability for launch aircraft to standoff outside the range of most target area surface-to-air threat systems. The JSOW Global Positioning System (GPS)/Inertial Navigation System (INS) capability allows several target kills per aircraft sortie.

The JSOW baseline BLU-97 variant (AGM-154A) has been integrated on USN (F/A-18C/D/E/F) and USAF (F-16C/D, B-2 and B-52) aircraft. The JSOW BLU-108 (AGM-154B) variant provides an anti-armor/tank capability. The JSOW unitary variant (AGM-154C) utilizes the common airframe of the AGM-154A and AGM-154B variants and incorporates an infrared uncooled seeker with autonomous targeting acquisition. The payload includes a 500 pound class Broach multi-stage warhead. AGM-154C was approved for Low Rate Initial Production (LRIP) on 26 June 2003. Full Rate Production (FRP) of the AGM-154C began in December 2004. A Network Enabled Weapon (NEW) moving maritime target capability has been incorporated in JSOW-C production units (AGM-154C-1 variant) starting with the FY 2009 procurement. The AGM-154-C-1 units retain the basic AGM-154C capability against fixed land targets.

JSOW Extended Range will include an engine and avionics upgrade, and improved software to increase range greater than 200nm to kinetically engage adversary surface combatants and land targets at tactically significant ranges. Production of this configuration commences in FY 2022 and provides capacity to execute Navy operational plans.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2230 / JNT Standoff Weapon (JSOW)

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: 000

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / AGM - 154 C-1				5,168 / 2,275.248	- / 1.330	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**5,168 / 2,275.248**	**- / 1.330**	**- / 0.000**	**- / 0.000**	**- / 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:
FY 2021 - no funding required.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2230 / JNT Standoff Weapon (JSOW)	Item Number / Title [DODIC]: 1 / AGM - 154 C-1
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	5,168	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	2,275.248	1.330	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	2,275.248	1.330	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**2,275.248**	**1.330**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	440,256.97	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Flyaway - MISSILE Cost																		
Recurring Cost																		
1.1.1) (JS103) All UP ROUND (AUR)	325,099.22	3,185	1,035.441	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2) (JS113) CONTRACTOR (DATA)	-	-	16.753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.3) (JS240) PRODUCTION ACCEPTANCE TEST & EVAL	-	-	30.342	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.4) (JS090) ECO	-	-	56.586	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.5) (JS250) OBSOLESCENCE	-	-	26.337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*1,165.459*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway - MISSILE Cost	**-**	**-**	***1,165.459***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - PROCUREMENT SUPPORT - MISSILE Cost																		
2.1) (JS593) COMMAND & LAUNCH /ST&E/ MISSION/SW	-	-	60.629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) (JS573) CONTAINERS	-	-	36.995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.3) (JS833) GIH PRODUCTION SUPPORT	-	-	87.140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2230 / JNT Standoff Weapon (JSOW)	Item Number / Title [DODIC]: 1 / AGM - 154 C-1
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
2.4) (JS503) SPECIAL TOOLING & TEST EQUIPMENT (ST&TE)	-	-	72.013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.5) (JS895) TELEMETRY	-	-	24.440	-	-	1.330	-	-	-	-	-	-	-	-	-	-	-	-
2.6) (JS980) PRODUCTION LINE SHUTDOWN	-	-	5.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - PROCUREMENT SUPPORT - MISSILE Cost	**-**	**-**	***286.717***	**-**	**-**	***1.330***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - FLEET SUPPORT - MISSILE Cost																		
3.1) (JS973) INTEGRATED LOGISTICS SUPPORT (ILS)	-	-	6.779	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.2) (JS300) CAPTIVE AIR TRAINING MISSILE (CATM)	-	-	12.068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - FLEET SUPPORT - MISSILE Cost	**-**	**-**	***18.847***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - All Prior Years Cost																		
4.1) All Prior Years (1)	405,559.76	1,983	804.225	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - All Prior Years Cost	**-**	**-**	***804.225***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**440,256.97**	**5,168**	**2,275.248**	**-**	**-**	**1.330**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

Remarks:
Totals may not add due to rounding.

Footnotes:
(1) Prior year values contain costs for all JSOW variants (AGM-154A, AGM-154B, AGM-154C, and AGM-154C-1).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2234 / Standard 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: 000

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	806	125	125	125	-	125	132	135	200	183	800	2,631
Gross/Weapon System Cost *($ in Millions)*	3,302.409	490.210	488.312	539.829	0.000	539.829	625.139	600.764	905.190	840.137	3,986.517	11,778.507
Less PY Advance Procurement *($ in Millions)*	-	-	83.789	83.623	-	83.623	83.512	83.351	-	-	-	334.275
Net Procurement (P-1) *($ in Millions)*	3,302.409	490.210	404.523	456.206	0.000	456.206	541.627	517.413	905.190	840.137	3,986.517	11,444.232
Plus CY Advance Procurement *($ in Millions)*	-	125.683	96.085	66.716	-	66.716	45.791	-	-	-	-	334.275
Total Obligation Authority *($ in Millions)*	**3,302.409**	**615.893**	**500.608**	**522.922**	**0.000**	**522.922**	**587.418**	**517.413**	**905.190**	**840.137**	**3,986.517**	**11,778.507**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	4,097.282	3,921.680	3,906.496	4,318.632	-	4,318.632	4,735.902	4,450.104	4,525.950	4,590.913	4,983.146	4,476.818

Description:

The SM-6 Block I provides an extended range engagement capability to provide the air superiority and the umbrella of protection for joint U.S. forces and allies against the full spectrum of manned-fixed and rotary-winged aircraft, unmanned aerial vehicles, and land attack and anti-ship cruise missiles in flight. This capability contributes significantly to the continuous protection of forward deployed ground maneuver forces as well as theater assets.

The SM-6 is the primary extended range air defense weapon for AEGIS cruisers and destroyers and potentially future combatants.

The program was approved for a five-year Multiyear Procurement beginning in FY 2019 and completing in FY 2023. Advance Procurement information is provided in exhibit 2234C.

FY2021 adds funding for duplication of special tooling and test equipment required to increase SM-6 BLKIA production capacity from 125 to 200 units per year. FY2021 begins the effort for duplication of special tooling and test equipment required to increase SM-6 BLKIA production capacity.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2234 / Standard 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: 000		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / STANDARD MISSILE	P-5a, P-21			806 / 3,302.409	125 / 490.210	125 / 488.312	125 / 539.829	- / 0.000	125 / 539.829
P-40	**Total Gross/Weapon System Cost**				**806 / 3,302.409**	**125 / 490.210**	**125 / 488.312**	**125 / 539.829**	**- / 0.000**	**125 / 539.829**

*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:
SM-6 BLKI/IA: FY 2021 provides $478.866M including Advance Procurement to procure 125 SM-6 Block I and SM-6 Block IA missiles to support warfighter requirements as well as required support costs such as production engineering, Diminishing Manufacturing Sources (DMS), containers, fleet documentation, and install/checkout equipment. The budget reflects a funding profile for a five-year Multiyear Procurement that began in FY 2019 and completes in FY 2023. Advance Procurement information for SM-6 BLKI/IA is provided in exhibit 2234C (P10).

Special Tooling and Test Equipment: FY2021 provides $50M to begin the effort for duplication of special tooling and test equipment required to increase SM-6 BLKIA production capacity from 125 to 200 units per year.

FE831 Production Engineering Support: FY20 FE831 funding was reduced in order to accommodate increased canister unit cost. The FE831 increase in FY21 restores full funding levels.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2234 / Standard Missile	**Item Number / Title [DODIC]:** 1 / STANDARD MISSILE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	806	125	125	125	-	125
Gross/Weapon System Cost *($ in Millions)*	3,302.409	490.210	488.312	539.829	0.000	539.829
Less PY Advance Procurement *($ in Millions)*	-	-	83.789	83.623	-	83.623
Net Procurement (P-1) *($ in Millions)*	3,302.409	490.210	404.523	456.206	0.000	456.206
Plus CY Advance Procurement *($ in Millions)*	-	125.683	96.085	66.716	-	66.716
Total Obligation Authority *($ in Millions)*	**3,302.409**	**615.893**	**500.608**	**522.922**	**0.000**	**522.922**
(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 Thousands)*	4,097.282	3,921.680	3,906.496	4,318.632	-	4,318.632

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - SM-6 Cost																		
Recurring Cost																		
1.1.1) FE002 SM-6 Block I All Up Round Missile(†)	2,773.075	681	1,888.464	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2) FE002 SM-6 Block IA ECP	-	-	345.841	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile(†) (1)	3,355.896	125	419.487	3,297.352	125	412.169	3,293.688	125	411.711	3,297.200	125	412.150	-	-	-	3,297.200	125	412.150
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4)(†) (2)	235.109	806	189.498	267.200	125	33.400	268.800	125	33.600	281.600	125	35.200	-	-	-	281.600	125	35.200
1.1.7) FE002 Production Start Up	-	-	28.102	-	-	-	-	-	-	-	-	50.000	-	-	-	-	-	50.000
Subtotal: Recurring Cost	-	-	*2,871.392*	-	-	*445.569*	-	-	*445.311*	-	-	*497.350*	-	-	-	-	-	*497.350*
Subtotal: Hardware - SM-6 Cost	**-**	**-**	***2,871.392***	**-**	**-**	***445.569***	**-**	**-**	***445.311***	**-**	**-**	***497.350***	**-**	**-**	**-**	**-**	**-**	***497.350***
Support - SM-6 Cost Cost																		
2.1) FE831 Production Engineering/Support	-	-	211.031	-	-	27.669	-	-	26.352	-	-	27.376	-	-	-	-	-	27.376
2.2) FE851 Component Improvement	-	-	93.930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.3) FE851 Diminishing Manufacturing Sources (DMS)	-	-	63.630	-	-	14.391	-	-	14.051	-	-	12.486	-	-	-	-	-	12.486

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2234 / Standard Missile	Item Number / Title [DODIC]: 1 / STANDARD MISSILE
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
2.4) FE951 Tools and Test Equipment	-	-	13.968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.5) FE958 Containers	-	-	1.819	-	-	0.232	-	-	0.236	-	-	0.241	-	-	-	-	-	0.241
2.6) FE981 ILS/Fleet Documentation	-	-	6.479	-	-	0.670	-	-	0.683	-	-	0.697	-	-	-	-	-	0.697
2.7) FE971 Install/ Checkout Equip/Training Material	-	-	39.057	-	-	1.679	-	-	1.679	-	-	1.679	-	-	-	-	-	1.679
Subtotal: Support - SM-6 Cost Cost	***-***	***-***	***429.914***	***-***	***-***	***44.641***	***-***	***-***	***43.001***	***-***	***-***	***42.479***	***-***	***-***	***-***	***-***	***-***	***42.479***
Support - Other Cost																		
3.1) WAXXX Acquisition Workforce Fund - 2009	-	-	1.103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Other Cost	***-***	***-***	***1.103***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
Gross/Weapon System Cost	**4,097.282**	**806**	**3,302.409**	**3,921.680**	**125**	**490.210**	**3,906.496**	**125**	**488.312**	**4,318.632**	**125**	**539.829**	**-**	**-**	**0.000**	**4,318.632**	**125**	**539.829**

(†) indicates the presence of a P-5a

Footnotes:

(1) FY 2018 combined cost code 1.1.1) FE002 SM-6 Block I All UP Round Missile and 1.1.2) FE002 SM-6 Block IA ECP into 1.1.3) SM-6 Block I/IA All Up Round Missile to provide the blended costs of the Block I and Block IA missiles. The Navy remains committed to procuring the maximum number of SM-6 Block IAs, limited by maximum production rate. The SM-6 Block IAs are more technologically advanced than the SM-6 Block I and therefore have higher unit cost. The budget reflects a funding profile for a five-year Multiyear Procurement beginning in FY 2019 and completing in FY 2023. Advance Procurement information is provided in exhibit 2234C.

(2) Canisters are not procured through the prime missile contractor and are not included in the Multiyear Procurement Contract. MK21 Mod 3 Canisters are procured for both the SM-6 BLKI and SM-6 BLKIA missiles. However, additional cost is required for parts and engineering to convert MK21 Mod 3 Canisters into MK21 Mod 4 canisters for SM-6 BLKIA missiles.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2234 / Standard Missile	Item Number / Title [DODIC]: 1 / STANDARD MISSILE

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) FE002 SM-6 Block I All Up Round Missile(†)		2013	Raytheon CO . / Tucson, AZ	SS / FP	NAVSEA	Sep 2013	Apr 2015	89	2,762.551	Y		
1.1.1) FE002 SM-6 Block I All Up Round Missile(†)		2014	Raytheon CO .. / Tucson, AZ	SS / FP	NAVSEA	Jun 2014	Apr 2016	93	2,570.151	Y		
1.1.1) FE002 SM-6 Block I All Up Round Missile(†)		2015	Raytheon CO / Tucson AZ	SS / FP	NAVSEA	Apr 2015	Apr 2017	95	2,535.000	Y		
1.1.1) FE002 SM-6 Block I All Up Round Missile(†)		2016	Raytheon CO / Tucson AZ	SS / FP	NAVSEA	Apr 2016	Apr 2018	101	2,532.000	Y		
1.1.1) FE002 SM-6 Block I All Up Round Missile(†)		2017	Raytheon CO ... / Tucson AZ	SS / FP	NAVSEA	Apr 2018	Apr 2019	125	2,209.528	Y		
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile(†)		2018	Raytheon CO (3) / Tucson AZ	SS / FP	NAVSEA	Apr 2018	Apr 2020	117	3,327.504	Y		
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile(†)	✓	2018	Raytheon CO (3) / Tucson AZ	SS / FP	NAVSEA	Apr 2018	Apr 2020	8	3,771.125	Y		
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile(†)		2019	Raytheon CO / Tucson AZ	SS / FP	NAVSEA	Dec 2019	Jul 2021	125	3,297.352	Y		
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile(†)		2020	Raytheon CO (3) / Tucson AZ	SS / FP	NAVSEA	Feb 2020	Feb 2022	125	3,293.688	Y		
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile(†)		2021	Raytheon CO (3) / Tucson AZ	SS / FP	NAVSEA	Dec 2021	Dec 2023	125	3,297.200	Y		
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4)(†)		2014	BAE / MINNEAPOLIS, MN	SS / FP	NAVSEA	Dec 2013	Feb 2015	93	216.553	Y		
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4)(†)		2015	BAE / MINNEAPOLIS, MN	SS / FP	NAVSEA	Mar 2015	May 2016	95	218.920	Y		
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4)(†)		2016	BAE / MINNEAPOLIS, MN	SS / FP	NAVSEA	Mar 2016	May 2017	101	253.099	Y		
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4)(†)		2017	BAE / MINNEAPOLIS, MN	SS / FP	NAVSEA	Mar 2017	May 2018	125	211.672	Y		
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4)(†)		2018	BAE / MINNEAPOLIS, MN	SS / FP	NAVSEA	Mar 2018	May 2019	117	216.342	Y		
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4)(†)	✓	2018	BAE / MINNEAPOLIS, MN	SS / FP	NAVSEA	Mar 2018	May 2019	8	264.500	Y		
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4)(†)		2019	BAE / MINNEAPOLIS, MN	SS / FP	NAVSEA	Mar 2019	May 2020	125	267.200	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2234 / Standard Missile	Item Number / Title [DODIC]: 1 / STANDARD MISSILE

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4)(†)		2020	BAE / MINNEAPOLIS, MN	SS / FP	NAVSEA	Mar 2020	May 2021	125	268.800	Y		
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4)(†)		2021	BAE / MINNEAPOLIS, MN	SS / FP	NAVSEA	Mar 2021	May 2022	125	281.600	Y		

(†) indicates the presence of a P-21

Footnotes:

(3) MSR reflects a ramp up to an increased production capacity of 200 units per year.

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2234 / Standard Missile | **Item Number / Title [DODIC]:** 1 / STANDARD MISSILE

Cost Elements (Units in Each)							Fiscal Year 2013												Fiscal Year 2014												BALANCE
							Calendar Year 2013												Calendar Year 2014												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2012	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FE002 SM-6 Block I All Up Round Missile																															
Prior Years Deliveries: 178																															
	3	2013	NAVY	89	0	89												A -	-	-	-	-	-	-	-	-	-	-	-	-	89
	1	2014	NAVY	93	0	93																					A -	-	-	-	93
	2	2015	NAVY	95	0	95																									95
	2	2016	NAVY	101	0	101																									101
	4	2017	NAVY	125	0	125																									125
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile (1)																															
	5	2018	NAVY	117	0	117																									117
✓	5	2018	NAVY	8	0	8																									8
	6	2019	NAVY	125	0	125																									125
	5	2020	NAVY	125	0	125																									125
	5	2021	NAVY	125	0	125																									125
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4) (2)																															
Prior Years Deliveries: 267																															
	7	2014	NAVY	93	0	93															A -	-	-	-	-	-	-	-	-	-	93
	8	2015	NAVY	95	0	95																									95
	8	2016	NAVY	101	0	101																									101
	8	2017	NAVY	125	0	125																									125
	8	2018	NAVY	117	0	117																									117
✓	8	2018	NAVY	8	0	8																									8
	7	2019	NAVY	125	0	125																									125
	7	2020	NAVY	125	0	125																									125
	7	2021	NAVY	125	0	125																									125
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2234 / Standard Missile | **Item Number / Title [DODIC]:** 1 / STANDARD MISSILE

Cost Elements (Units in Each)							Fiscal Year 2015												Fiscal Year 2016												BALANCE
							Calendar Year 2015												Calendar Year 2016												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FE002 SM-6 Block I All Up Round Missile																															
Prior Years Deliveries: 178																															
	3	2013	NAVY	89	0	89	-	-	-	-	-	-	7	7	7	7	7	7	7	8	8	8	8	8							0
	1	2014	NAVY	93	0	93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	7	8	8	8	48
	2	2015	NAVY	95	0	95							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95
	2	2016	NAVY	101	0	101																			A -	-	-	-	-	-	101
	4	2017	NAVY	125	0	125																									125
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile (1)																															
	5	2018	NAVY	117	0	117																									117
✓	5	2018	NAVY	8	0	8																									8
	6	2019	NAVY	125	0	125																									125
	5	2020	NAVY	125	0	125																									125
	5	2021	NAVY	125	0	125																									125
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4) (2)																															
Prior Years Deliveries: 267																															
	7	2014	NAVY	93	0	93	-	-	-	-	10	12	12	12	12	12	12	11													0
	8	2015	NAVY	95	0	95						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	8	8	8	56
	8	2016	NAVY	101	0	101																		A -	-	-	-	-	-	-	101
	8	2017	NAVY	125	0	125																									125
	8	2018	NAVY	117	0	117																									117
✓	8	2018	NAVY	8	0	8																									8
	7	2019	NAVY	125	0	125																									125
	7	2020	NAVY	125	0	125																									125
	7	2021	NAVY	125	0	125																									125
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2234 / Standard Missile | **Item Number / Title [DODIC]:** 1 / STANDARD MISSILE

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
							Calendar Year 2017												Calendar Year 2018												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FE002 SM-6 Block I All Up Round Missile																															
Prior Years Deliveries: 178																															
	3	2013	NAVY	89	89	0																									0
	1	2014	NAVY	93	45	48	8	8	8	8	8	8																			0
	2	2015	NAVY	95	0	95	-	-	-	-	-	-	7	8	8	8	8	8	8	8	8	8	8	8							0
	2	2016	NAVY	101	0	101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	8	8	8	8	53
	4	2017	NAVY	125	0	125																			A -	-	-	-	-	-	125
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile (1)																															
	5	2018	NAVY	117	0	117																			A -	-	-	-	-	-	117
✓	5	2018	NAVY	8	0	8																			A -	-	-	-	-	-	8
	6	2019	NAVY	125	0	125																									125
	5	2020	NAVY	125	0	125																									125
	5	2021	NAVY	125	0	125																									125
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4) (2)																															
Prior Years Deliveries: 267																															
	7	2014	NAVY	93	93	0																									0
	8	2015	NAVY	95	39	56	8	8	8	8	8	8	8																		0
	8	2016	NAVY	101	0	101	-	-	-	-	-	-	-	7	8	8	8	8	8	9	9	9	9	9	9						0
	8	2017	NAVY	125	0	125						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	11	11	73
	8	2018	NAVY	117	0	117																		A -	-	-	-	-	-	-	117
✓	8	2018	NAVY	8	0	8																		A -	-	-	-	-	-	-	8
	7	2019	NAVY	125	0	125																									125
	7	2020	NAVY	125	0	125																									125
	7	2021	NAVY	125	0	125																									125
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2234 / Standard Missile | **Item Number / Title [DODIC]:** 1 / STANDARD MISSILE

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FE002 SM-6 Block I All Up Round Missile																															
Prior Years Deliveries: 178																															
	3	2013	NAVY	89	89	0																									0
	1	2014	NAVY	93	93	0																									0
	2	2015	NAVY	95	95	0																									0
	2	2016	NAVY	101	48	53	8	9	9	9	9	9																			0
	4	2017	NAVY	125	0	125	-	-	-	-	-	-	10	10	10	11	11	11	11	11	10	10	10	10							0
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile [1]																															
	5	2018	NAVY	117	0	117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	9	9	10	10	10	60
✓	5	2018	NAVY	8	0	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	2
	6	2019	NAVY	125	0	125															A -	-	-	-	-	-	-	-	-	-	125
	5	2020	NAVY	125	0	125																	A -	-	-	-	-	-	-	-	125
	5	2021	NAVY	125	0	125																									125
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4) [2]																															
Prior Years Deliveries: 267																															
	7	2014	NAVY	93	93	0																									0
	8	2015	NAVY	95	95	0																									0
	8	2016	NAVY	101	101	0																									0
	8	2017	NAVY	125	52	73	11	11	11	10	10	10	10																		0
	8	2018	NAVY	117	0	117	-	-	-	-	-	-	-	10	9	9	9	10	10	10	10	10	10	10	10						0
✓	8	2018	NAVY	8	0	8	-	-	-	-	-	-	-	1	1	2	1	1	2												0
	7	2019	NAVY	125	0	125						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	11	11	73
	7	2020	NAVY	125	0	125																		A -	-	-	-	-	-	-	125
	7	2021	NAVY	125	0	125																									125
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2234 / Standard Missile | **Item Number / Title [DODIC]:** 1 / STANDARD MISSILE

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FE002 SM-6 Block I All Up Round Missile																															
Prior Years Deliveries: 178																															
	3	2013	NAVY	89	89	0																									0
	1	2014	NAVY	93	93	0																									0
	2	2015	NAVY	95	95	0																									0
	2	2016	NAVY	101	101	0																									0
	4	2017	NAVY	125	125	0																									0
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile [1]																															
	5	2018	NAVY	117	57	60	10	10	10	10	10	10																			0
✓	5	2018	NAVY	8	6	2	1	1																							0
	6	2019	NAVY	125	0	125	-	-	-	-	-	-	-	-	-	10	10	10	11	11	11	11	11	10	10	10	10				0
	5	2020	NAVY	125	0	125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	11	11	11	11	11	40
	5	2021	NAVY	125	0	125															A -	-	-	-	-	-	-	-	-	-	125
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4) [2]																															
Prior Years Deliveries: 267																															
	7	2014	NAVY	93	93	0																									0
	8	2015	NAVY	95	95	0																									0
	8	2016	NAVY	101	101	0																									0
	8	2017	NAVY	125	125	0																									0
	8	2018	NAVY	117	117	0																									0
✓	8	2018	NAVY	8	8	0																									0
	7	2019	NAVY	125	52	73	11	11	11	10	10	10	10																		0
	7	2020	NAVY	125	0	125	-	-	-	-	-	-	-	10	10	10	11	11	11	11	11	10	10	10	10						0
	7	2021	NAVY	125	0	125						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	11	11	73
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2234 / Standard Missile	**Item Number / Title [DODIC]:** 1 / STANDARD MISSILE

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
							Calendar Year 2023															Calendar Year 2024									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FE002 SM-6 Block I All Up Round Missile																															
Prior Years Deliveries: 178																															
	3	2013	NAVY	89	89	0																									0
	1	2014	NAVY	93	93	0																									0
	2	2015	NAVY	95	95	0																									0
	2	2016	NAVY	101	101	0																									0
	4	2017	NAVY	125	125	0																									0
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile (1)																															
	5	2018	NAVY	117	117	0																									0
✓	5	2018	NAVY	8	8	0																									0
	6	2019	NAVY	125	125	0																									0
	5	2020	NAVY	125	85	40	10	10	10	10																					0
	5	2021	NAVY	125	0	125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	11	11	11	11	11	10	10	20
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4) (2)																															
Prior Years Deliveries: 267																															
	7	2014	NAVY	93	93	0																									0
	8	2015	NAVY	95	95	0																									0
	8	2016	NAVY	101	101	0																									0
	8	2017	NAVY	125	125	0																									0
	8	2018	NAVY	117	117	0																									0
✓	8	2018	NAVY	8	8	0																									0
	7	2019	NAVY	125	125	0																									0
	7	2020	NAVY	125	125	0																									0
	7	2021	NAVY	125	52	73	11	11	11	10	10	10	10																		0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2234 / Standard Missile	**Item Number / Title [DODIC]:** 1 / STANDARD MISSILE

Cost Elements (Units in Each)							Fiscal Year 2025												Fiscal Year 2026												BALANCE
										Calendar Year 2025												Calendar Year 2026									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2024	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FE002 SM-6 Block I All Up Round Missile																															
Prior Years Deliveries: 178																															
	3	2013	NAVY	89	89	0																									0
	1	2014	NAVY	93	93	0																									0
	2	2015	NAVY	95	95	0																									0
	2	2016	NAVY	101	101	0																									0
	4	2017	NAVY	125	125	0																									0
1.1.3) FE002 SM-6 Block I/IA All Up Round Missile (1)																															
	5	2018	NAVY	117	117	0																									0
✓	5	2018	NAVY	8	8	0																									0
	6	2019	NAVY	125	125	0																									0
	5	2020	NAVY	125	125	0																									0
	5	2021	NAVY	125	105	20	10	10																							0
1.1.5) FE002 Canister - SM-6 Block I/IA (Mk 21 Mod 3/Mod 4) (2)																															
Prior Years Deliveries: 267																															
	7	2014	NAVY	93	93	0																									0
	8	2015	NAVY	95	95	0																									0
	8	2016	NAVY	101	101	0																									0
	8	2017	NAVY	125	125	0																									0
	8	2018	NAVY	117	117	0																									0
✓	8	2018	NAVY	8	8	0																									0
	7	2019	NAVY	125	125	0																									0
	7	2020	NAVY	125	125	0																									0
	7	2021	NAVY	125	125	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2234 / Standard Missile	**Item Number / Title [DODIC]:** 1 / STANDARD MISSILE

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 CO .. - Tucson, AZ	125	125	125	3	3	22	25	3	3	22	25
2	Raytheon CO - Tucson AZ	125	125	125	3	3	24	27	3	3	24	27
3	Raytheon CO . - Tucson, AZ	125	125	125	3	3	19	22	3	3	19	22
4	Raytheon CO ... - Tucson AZ	125	125	125	3	3	12	15	3	3	12	15
5	Raytheon CO (3) - Tucson AZ	125	125	200	3	3	24	27	3	3	24	27
6	Raytheon CO - Tucson AZ	125	125	125	3	3	19	22	3	3	19	22
7	BAE - MINNEAPOLIS, MN	125	125	125	3	8	14	22	3	8	14	22
8	BAE - MINNEAPOLIS, MN	125	125	200	3	8	14	22	3	8	14	22

"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:
(3) MSR reflects a ramp up to an increased production capacity of 200 units per year.

Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2234 / Standard Missile
Program Elements for Code B Items: N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: 000	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Gross/Weapon System Cost *($ in Millions)*	-	125.683	96.085	66.716	-	66.716	45.791	-	-	-	-	334.275
Net Procurement (P-1) *($ in Millions)*	-	125.683	96.085	66.716	-	66.716	45.791	-	-	-	-	334.275
Total Obligation Authority *($ in Millions)*	**-**	**125.683**	**96.085**	**66.716**	**-**	**66.716**	**45.791**	**-**	**-**	**-**	**-**	**334.275**

Description:

The SM-6 Block I provides an extended range engagement capability to provide the air superiority and the umbrella of protection for joint U.S. forces and allies against the full spectrum of manned-fixed and rotary-winged aircraft, unmanned aerial vehicles, and land attack and anti-ship cruise missiles in flight. This capability contributes significantly to the continuous protection of forward deployed ground maneuver forces as well as theater rear assets. The SM-6 is the primary extended range air defense weapon for AEGIS cruisers and destroyers and potentially future combatants.

Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2234 / Standard Missile
Program Elements for Code B Items: N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: 000	

Exhibits Schedule				Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-10	1 / STANDARD MISSILE			806 / -	125 / 125.683	125 / 96.085	125 / 66.716	- / -	125 / 66.716
P-40	**Total Gross/Weapon System Cost**			**806 / -**	**125 / 125.683**	**125 / 96.085**	**125 / 66.716**	**- / -**	**125 / 66.716**

*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 budget reflects a funding profile for a five-year Multiyear Procurement beginning in FY 2019 and completing in FY 2023. The multiyear procurement contracts provide for the procurement of up to 625 Standard Missile-6 (SM-6) guided missiles. The use of Advanced Procurement provides Economic Order Quantity (EOQ)to reduce the cost of subcontractor effort, material, and components enabling greater production efficiencies and substantial cost savings.

Funding covers EOQ in support of the FY 2019-2023 MYP contract. EOQ will fund the procurement of MK72 Booster, MK104 Dual Thrust Rocket Motors (DTRM) and Guidance Sections. Booster is a 26 month lead time due to the unique steel for the case and additional time for mating with a Thrust Vector Actuator (TVA). The DTRM has a 22 month lead time due to the specialty steel required for manufacturing. The guidance section takes 24 months to deliver due to the lead time in the specialty Circuit Card Assemblies.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2234 / Standard Missile	**P-5 Number / Title:** 1 / STANDARD MISSILE

First System (2021) Award Date:	First System (2021) Completion Date:	Interval Between Systems:
January 2013	January 2013	0 Months

STANDARD MISSILE	Production Leadtime (Months)	Prior Years (Each)	FY 2019 (Each)	FY 2020 (Each)	FY 2021 (Each)
Quantity		806	125	125	125

Cost Elements	When Required (Months)	Prior Years ($ M)	FY 2019 ($ M)	FY 2020 ($ M)	FY 2021 ($ M)
CFE					
FY20 EOQ	0	-	83.789	-	-
FY21 EOQ	0	-	25.087	58.536	-
FY22 EOQ	0	-	16.807	20.841	45.861
FY23 EOQ	0	-	-	16.708	20.855
Total: CFE		*-*	*125.683*	*96.085*	*66.716*
Total Advance Procurement/Obligation Authority		**-**	**125.683**	**96.085**	**66.716**

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2234 / Standard Missile	**P-5 Number / Title:** 1 / STANDARD MISSILE

Cost Elements	QPA (Each)	FY 2021					
		Production Leadtime (Months)	Unit Cost ($ K)	Contract Forecast Date	2021 Qty (Each)	For FY	Total Cost Request ($ M)
CFE							
FY20 EOQ	0						-
FY21 EOQ	0						-
FY22 EOQ	0						45.861
FY23 EOQ	0						20.855
Total: CFE							*66.716*
Total Advance Procurement/Obligation Authority							**66.716**

Description:
The Advance Procurement (AP) funding provides Economic Order Quantity (EOQ) to reduce the cost of subcontractor effort, material, and components enabling greater production efficiencies and substantial cost.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2238 / Small Diameter Bomb II (SDB II)

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0204162N	Other Related Program Elements: 0604329N

Line Item MDAP/MAIS Code: 439

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	90	750	512	357	-	357	364	359	380	378	1,810	5,000
Gross/Weapon System Cost *($ in Millions)*	23.466	88.772	108.452	78.867	0.000	78.867	80.582	82.508	84.159	85.872	363.072	995.750
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	23.466	88.772	108.452	78.867	0.000	78.867	80.582	82.508	84.159	85.872	363.072	995.750
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**23.466**	**88.772**	**108.452**	**78.867**	**0.000**	**78.867**	**80.582**	**82.508**	**84.159**	**85.872**	**363.072**	**995.750**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	260,733.33	118,362.67	211,820.31	220,915.97	-	220,915.97	221,379.12	229,827.30	221,471.05	227,174.60	200,592.27	199,150.00

Description:

Small Diameter Bomb Increment II (SDB II) is an ACAT 1C program providing the warfighter a capability to attack mobile targets in all weather. The Air Force (USAF) is the lead service. The SDB II increases joint lethality in contested environments. The SDB can strike a diverse set of targets inside an adversary's air and missile defense networks to destroy mobile platforms through the weather. With increased loadout, range, and munitions effect the network enabled SDBII enhances close combat lethality in complex terrain.

Threshold aircraft is the F-15E for the USAF and F-35B and F-35C for the Department of Navy (DON). Objective aircraft include the F/A-22, B-1, B2, F-117, F-16, B-52, Predator B, F/A-18 E/F. Milestone C was achieved June 2015.

The Acquisition Decision Memorandum was signed 4 June 2015. Lots 1 through 3 are Air Force only procurements; Lot 1 awarded 12 June 2015. SDB II will be integrated on F-35B and F-35C using BRU-61 (due to the cancellation of the Joint Miniature Munitions Bomb Rack contract), and on F/A-18 E/F using BRU-55. The F/A-18 E/F Initial Operational Capability (IOC) is planned for FY 2020; F-35 IOC is planned for FY 2022. The total planned SDB II procurement is 17,000 weapons; 12,000 for the AF and 5,000 for the DoN.

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

[P5 / All Up Round (AUR)]: Lots 1-5 (FY 2018 and FY 2019) are competitively priced options to the SDB II EMD contract. Lots 6-11 will be awarded under sole source contract. Lots 6-11 unit costs increased significantly after actual production cost data and additional performance requirements were incorporated in the current program office estimate.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2238 / Small Diameter Bomb II (SDB II)

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0204162N	Other Related Program Elements: 0604329N

Line Item MDAP/MAIS Code: 439

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / Small Diameter Bomb II (SDB II)	P-5a, P-21			90 / 23.466	750 / 88.772	512 / 108.452	357 / 78.867	- / 0.000	357 / 78.867
P-40	**Total Gross/Weapon System Cost**				**90 / 23.466**	**750 / 88.772**	**512 / 108.452**	**357 / 78.867**	**- / 0.000**	**357 / 78.867**

*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:
Decrease from FY 2020 to FY 2021 is due to updated munitions requirements analysis reducing SDB II program in support of higher priority programs. This decreased funding from $108.452 million in FY 2020 to $78.867 million in FY 2021, with a corresponding reduction of quantities from 512 to 357. This reduction is below the Inter-Service agreement and will result in an increase to the unit cost for USN, USMC, and USAF.

FY 2021 provides funding to procure 357 SDB II All Up Rounds (AUR) to support warfighter requirements as well as containers, Government In-house (GIH) production support, software updates, and integrated logistics support.

Current contract for Production Lots/Service includes the following:
FY 2015 Lot 1 - USAF (144)
FY 2016 Lot 2 - USAF (250)
FY 2017 Lot 3 - USAF (312)
FY 2018 Lot 4 - USAF (570) / DoN (90)
FY 2019 Lot 5 - USAF (510) / DoN (750)
FY 2020 Lot 6 - USAF (803) / DoN (512)
FY 2021 Lot 7 - USAF (1109) / DoN (357)

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2238 / Small Diameter Bomb II (SDB II)	**Item Number / Title [DODIC]:** 1 / Small Diameter Bomb II (SDB II)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	90	750	512	357	-	357
Gross/Weapon System Cost *($ in Millions)*	23.466	88.772	108.452	78.867	0.000	78.867
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	23.466	88.772	108.452	78.867	0.000	78.867
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**23.466**	**88.772**	**108.452**	**78.867**	**0.000**	**78.867**
(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 Dollars)*	260,733.33	118,362.67	211,820.31	220,915.97	-	220,915.97

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - SDBII Cost																		
Recurring Cost																		
1.1.1) All Up Round (AUR)(†) (1)	114,455.56	90	10.301	103,038.67	750	77.279	192,000.00	512	98.304	199,000.00	357	71.043	-	-	-	199,000.00	357	71.043
Subtotal: Recurring Cost	-	-	*10.301*	-	-	*77.279*	-	-	*98.304*	-	-	*71.043*	-	-	-	-	-	*71.043*
Subtotal: Hardware - SDBII Cost	**-**	**-**	***10.301***	**-**	**-**	***77.279***	**-**	**-**	***98.304***	**-**	**-**	***71.043***	**-**	**-**	**-**	**-**	**-**	***71.043***
Hardware - Nonrecurring and Ancillary Equip Cost																		
Non Recurring Cost																		
2.1.1) Containers (2)	-	-	0.960	-	-	2.443	-	-	1.845	-	-	1.324	-	-	-	-	-	1.324
Subtotal: Non Recurring Cost	-	-	*0.960*	-	-	*2.443*	-	-	*1.845*	-	-	*1.324*	-	-	-	-	-	*1.324*
Subtotal: Hardware - Nonrecurring and Ancillary Equip Cost	**-**	**-**	***0.960***	**-**	**-**	***2.443***	**-**	**-**	***1.845***	**-**	**-**	***1.324***	**-**	**-**	**-**	**-**	**-**	***1.324***
Support - Procurement Support Cost																		
3.1) GIH Production Support (3)	-	-	-	-	-	2.861	-	-	3.556	-	-	3.472	-	-	-	-	-	3.472
3.2) Software Updates (4)	-	-	0.850	-	-	1.546	-	-	0.848	-	-	1.844	-	-	-	-	-	1.844
Subtotal: Support - Procurement Support Cost	**-**	**-**	***0.850***	**-**	**-**	***4.407***	**-**	**-**	***4.404***	**-**	**-**	***5.316***	**-**	**-**	**-**	**-**	**-**	***5.316***
Support - Fleet Support Cost																		
4.1) Weapon Load Crew Trainers (WLCT)	-	-	2.824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2238 / Small Diameter Bomb II (SDB II)	Item Number / Title [DODIC]: 1 / Small Diameter Bomb II (SDB II)
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
4.2) Practical EOD Systems Trainers (PESTs)	-	-	0.319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.3) Integrated Logistics Support (ILS)	-	-	1.520	-	-	1.771	-	-	1.161	-	-	1.184	-	-	-	-	-	1.184
4.4) Peculiar Support Equipment	-	-	6.692	-	-	2.872	-	-	2.738	-	-	-	-	-	-	-	-	-
Subtotal: Support - Fleet Support Cost	***-***	***-***	***11.355***	***-***	***-***	***4.643***	***-***	***-***	***3.899***	***-***	***-***	***1.184***	***-***	***-***	***-***	***-***	***-***	***1.184***
Gross/Weapon System Cost	**260,733.33**	**90**	**23.466**	**118,362.67**	**750**	**88.772**	**211,820.31**	**512**	**108.452**	**220,915.97**	**357**	**78.867**	**-**	**-**	**0.000**	**220,915.97**	**357**	**78.867**

(†) indicates the presence of a P-5a

Footnotes:

(1) The unit costs shown in FY 2020 and outyears is based on the current Program Office Estimate which accounts for award of a new sole source contract in FY 2020. A proposal for Lot 6 and 7 (FY 2020 and FY 2021) has been received, and negotiations are ongoing.

(2) Cost Element 2.1.1 (Containers) The Department of the Navy is buying two-place containers. One container is required for every two SDB II weapons and every two Weapon Load Crew Trainers.

(3) Cost Element 3.1 Government In-House (GIH) Production support is government labor in support of the production of the All Up Round to include engineering and logistics.

(4) Cost Element 3.2 Software updates will be made one year, with weapon Operational Flight Plan (OFP) updates on the opposite year.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2238 / Small Diameter Bomb II (SDB II)	Item Number / Title [DODIC]: 1 / Small Diameter Bomb II (SDB II)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) All Up Round (AUR)(†)		2018 (5)	Raytheon CO / Tucson AZ	C / FPIF	Eglin AFB, FL	Jan 2018	Jul 2019	90	114,455.56	Y		
1.1.1) All Up Round (AUR)(†)		2019 (6)	Raytheon CO / Tucson AZ	C / FPIF	Eglin AFB, FL	Jan 2019	Jul 2020	750	103,038.67	Y		
1.1.1) All Up Round (AUR)(†)		2020 (7)	Raytheon CO / Tucson AZ	C / TBD	Eglin AFB, FL	Jan 2020	Jul 2021	512	192,000.00	N	Aug 2019	
1.1.1) All Up Round (AUR)(†)		2021 (8)	Raytheon CO / Tucson AZ	C / TBD	Eglin AFB, FL	Jan 2021	Jul 2022	357	199,000.00	N	Aug 2019	

(†) indicates the presence of a P-21

Footnotes:

(5) Raytheon Missile Systems, Tucson, AZ is the prime contractor for this effort. FY 2018 is Lot 4; Lots 1-3 are Air Force only procurements.

(6) Raytheon Missile Systems, Tucson, AZ is the prime contractor for this effort. FY 2019 is Lot 5; Lots 1-3 are Air Force only procurements.

(7) Raytheon Missile Systems, Tucson, AZ is the prime contractor for this effort. FY 2020 is Lot 6; Lots 1-3 are Air Force only procurements.

(8) Raytheon Missile Systems, Tucson, AZ is the prime contractor for this effort. FY 2021 is Lot 7; Lots 1-3 are Air Force only procurements.

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2238 / Small Diameter Bomb II (SDB II)	**Item Number / Title [DODIC]:** 1 / Small Diameter Bomb II (SDB II)

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
										Calendar Year 2018												Calendar Year 2019									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round (AUR) (1)																															
	1	2018	NAVY	90	0	90				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	60
	1	2018	AF (‡)	570	0	570				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	47	47	429
	1	**2018**	**Total**	**660**	**0**	**660**				**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**57**	**57**	**57**	**489**
	1	2019	NAVY	750	0	750																A -	-	-	-	-	-	-	-	-	750
	1	2019	AF (‡)	510	0	510																A -	-	-	-	-	-	-	-	-	510
	1	**2019**	**Total**	**1,260**	**0**	**1,260**																**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1,260**
	1	2020	NAVY	512	0	512																									512
	1	2020	AF (‡)	803	0	803																									803
	1	**2020**	**Total**	**1,315**	**0**	**1,315**																									**1,315**
	1	2021	NAVY	357	0	357																									357
	1	2021	AF (‡)	1,109	0	1,109																									1,109
	1	**2021**	**Total**	**1,466**	**0**	**1,466**																									**1,466**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2238 / Small Diameter Bomb II (SDB II)	**Item Number / Title [DODIC]:** 1 / Small Diameter Bomb II (SDB II)

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
										Calendar Year 2020												Calendar Year 2021									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round (AUR) (1)																															
	1	2018	NAVY	90	30	60	10	10	10	10	10	10	-	-	-																0
	1	2018	AF (‡)	570	141	429	47	47	47	48	48	48	48	48	48																0
	1	**2018**	**Total**	**660**	**171**	**489**	**57**	**57**	**57**	**58**	**58**	**58**	**48**	**48**	**48**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2019	NAVY	750	0	750	-	-	-	-	-	-	-	-	-	62	62	62	62	62	62	63	63	63	63	63	63				0
	1	2019	AF (‡)	510	0	510	-	-	-	-	-	-	-	-	-	42	42	42	42	42	42	43	43	43	43	43	43				0
	1	**2019**	**Total**	**1,260**	**0**	**1,260**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**104**	**104**	**104**	**104**	**104**	**104**	**106**	**106**	**106**	**106**	**106**	**106**	**-**	**-**	**-**	**0**
	1	2020	NAVY	512	0	512				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	43	42	387
	1	2020	AF (‡)	803	0	803				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67	67	67	602
	1	**2020**	**Total**	**1,315**	**0**	**1,315**				**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**107**	**110**	**109**	**989**
	1	2021	NAVY	357	0	357																A -	-	-	-	-	-	-	-	-	357
	1	2021	AF (‡)	1,109	0	1,109																A -	-	-	-	-	-	-	-	-	1,109
	1	**2021**	**Total**	**1,466**	**0**	**1,466**																**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1,466**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2238 / Small Diameter Bomb II (SDB II)	**Item Number / Title [DODIC]:** 1 / Small Diameter Bomb II (SDB II)

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022															Calendar Year 2023									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round (AUR) (1)																															
	1	2018	NAVY	90	90	0																									0
	1	2018	AF (‡)	570	570	0																									0
	1	**2018**	**Total**	**660**	**660**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2019	NAVY	750	750	0																									0
	1	2019	AF (‡)	510	510	0																									0
	1	**2019**	**Total**	**1,260**	**1,260**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2020	NAVY	512	125	387	43	43	43	43	43	43	43	43	43																0
	1	2020	AF (‡)	803	201	602	67	67	67	67	67	67	67	67	66																0
	1	**2020**	**Total**	**1,315**	**326**	**989**	**110**	**110**	**110**	**110**	**110**	**110**	**110**	**110**	**109**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2021	NAVY	357	0	357	-	-	-	-	-	-	-	-	-	30	30	30	30	30	30	30	30	30	29	29	29				0
	1	2021	AF (‡)	1,109	0	1,109	-	-	-	-	-	-	-	-	-	92	92	92	92	92	92	92	92	93	93	93	94				0
	1	**2021**	**Total**	**1,466**	**0**	**1,466**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**122**	**122**	**122**	**122**	**122**	**122**	**122**	**122**	**123**	**122**	**122**	**123**	**-**	**-**	**-**	**0**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2238 / Small Diameter Bomb II (SDB II)	**Item Number / Title [DODIC]:** 1 / Small Diameter Bomb II (SDB II)

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 CO - Tucson AZ	1,346	1,925	2,119	0	4	18	22	0	4	18	22

(±) 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 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	1,805	108	120	100	-	100	100	120	120	120	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	1,334.303	96.221	106.765	90.533	0.000	90.533	94.280	107.616	112.159	114.400	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,334.303	96.221	106.765	90.533	0.000	90.533	94.280	107.616	112.159	114.400	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,334.303**	**96.221**	**106.765**	**90.533**	**0.000**	**90.533**	**94.280**	**107.616**	**112.159**	**114.400**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	739,226.04	890,935.19	889,708.33	905,330.00	-	905,330.00	942,800.00	896,800.00	934,658.33	953,333.33	Continuing	Continuing

Description:

Rolling Airframe Missile (RAM) is a high fire-power missile system used to defeat Anti-Ship Cruise Missiles (ASCMs), as well as other airborne threats. RAM is a surface-to-air missile with passive dual-mode radio frequency/infrared (RF/IR) guidance and an active-optical proximity and contact fuse. RAM has minimal shipboard control systems and is autonomous after launch. Effective against a wide spectrum of existing threats, the RAM Block 1 IR upgrade incorporated IR "all-the-way-homing" to improve performance against evolving passive and active ASCMs. The RAM Block 2 provides increased kinematic capability against highly maneuvering threats and improved RF detection against low probability of intercept threats. The latest variant, RAM Block 2A, provides improved performance in multi-target RAID scenarios. The RAM missile is fired from a RAM Guided Missile Launching System (GMLS) (MK-49), which holds 21 RAM rounds. RAM is also fired from the Close-In Weapon System (CIWS)SeaRAM Anti-Ship Missile Defense System (MK-15 MOD 31-33) which holds 11 rounds.

COOPERATIVE AGREEMENTS:

RAM is a cooperative program with the Federal Republic of Germany. The U.S. and Federal Republic of Germany cooperatively produce Block 2 missiles, launchers, and Ordnance Alterations (ORDALTs). The Block 2 production Memorandum of Understanding (MOU) was signed on 19 March 2013. Amendment 1 to the Block 2 Memorandum of Understanding (MOU) was signed 30 July 2019.

[P5 / EF008 Block 2 Missile]: Warhead is the explosive component that is activated by the target detector upon detection of the incoming anti ship cruise missile.

[P5 / EF008 BLK 2 GMRP ORDALTS]: Block 2 GMRP Ordalts utilize common components from Block 1A returning from the Fleet. Deliveries have the same capabilities as new build Block 2. ORDALTs are bought to budget.

[P5 / EF850 Component Improvement/DMS]: Provides RAM Design Agent engineering and technical support for component replacement and improvement. The RAM Guided Missile Round Pack (GMRP) is a build to print missile that includes commercial-off-the-shelf hardware. Support includes the development/review/approval/verification of production engineering change proposals and obsolescence mitigation efforts. This support is required to ensure that the build to print package continues to support the system performance specs as production matures. Funding also supports replacement of key components due to end of lifetime buy.

[P5 / EF957 Containers]: Procures containers for transporting the GMRP.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	
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		

[P5 / EF830 Production Support]: Provides critical engineering and technical support of the production line and production test equipment. Efforts include the technical investigation and resolution of production issues, control and maintenance of the technical data package, resolution of test equipment issues, configuration management, reliabilty assessments, and safety. Production support is an annual requirement which supports all on-going production and is independent of contract award quantities.

[P5 / EF830 Production Support Contractor Engineering]: Provides critical engineering and technical support of the production line and production test equipment. Efforts include the technical investigation and resolution of production issues, control and maintenance of the technical data package, resolution of test equipment issues, configuration management, reliabilty assessments, and safety. Production support is an annual requirement which supports all on-going production.

[P5 / EF830 Production Support Gov In-House Engineering]: Provides critical engineering and technical support of the production line and production test equipment. Efforts include the technical investigation and resolution of production issues, control and maintenance of the technical data package, resolution of test equipment issues, configuration management, reliabilty assessments, and safety. Production support is an annual requirement which supports all on-going production and is independent of contract award quantities.

[P5 / EF860 Product Acceptance]: Funds field activity product acceptance efforts.

[P5 / EF974 ILS]: Funds Integrated Logistics Support (ILS) efforts in support of production.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Rolling Airframe Missile (RAM)	P-5a, P-21			1,805 / 1,334.303	108 / 96.221	120 / 106.765	100 / 90.533	- / 0.000	100 / 90.533
P-40	**Total Gross/Weapon System Cost**				**1,805 / 1,334.303**	**108 / 96.221**	**120 / 106.765**	**100 / 90.533**	**- / 0.000**	**100 / 90.533**

*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:
In FY 2021, the program plans to procure 100 RAM missiles and seven Block 1 to Block 2 ORDALTs.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	1,805	108	120	100	-	100
Gross/Weapon System Cost *($ in Millions)*	1,334.303	96.221	106.765	90.533	0.000	90.533
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,334.303	96.221	106.765	90.533	0.000	90.533
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,334.303**	**96.221**	**106.765**	**90.533**	**0.000**	**90.533**
(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 Dollars)*	739,226.04	890,935.19	889,708.33	905,330.00	-	905,330.00

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - EF001 Block 1 Missile Cost																		
Recurring Cost																		
1.1.1) EF001 G&C	406,217.21	1,197	486.242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2) EF001 Propulsion	14,114.29	140	1.976	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.3) EF001 Safe and Arm Device	3,407.14	140	0.477	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.4) EF001 Ordance Pack	26,600.00	140	3.724	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.5) EF001 Warhead	11,221.43	140	1.571	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.6) EF001 Canisters	46,371.43	140	6.492	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.7) EF001 Block 1 GMRP ORDALTS	216,706.67	450	97.518	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*598.000*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - EF001 Block 1 Missile Cost	**-**	**-**	***598.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - EF002 Propulsion Cost																		
Recurring Cost																		
2.1.1) EF002 Propulsion	-	-	12.364	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*12.364*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - EF002 Propulsion Cost	**-**	**-**	***12.364***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - EF004 Safe and Arm Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2242 / Rolling Airframe Missile (RAM)	Item Number / Title [DODIC]: 1 / Rolling Airframe Missile (RAM)
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Recurring Cost																		
3.1.1) EF004 Safe & Arm Device	-	-	2.103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*2.103*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - EF004 Safe and Arm Cost	**-**	**-**	***2.103***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - EF005 Ordnance Pack Cost																		
Recurring Cost																		
4.1.1) EF005 Ordnance Pack	-	-	28.251	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*28.251*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - EF005 Ordnance Pack Cost	**-**	**-**	***28.251***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - EF006 Warhead Cost																		
Recurring Cost																		
5.1.1) EF006 Warhead	-	-	7.174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*7.174*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - EF006 Warhead Cost	**-**	**-**	***7.174***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - EF007 Canister Cost																		
Recurring Cost																		
6.1.1) EF007 Canister	-	-	32.031	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*32.031*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - EF007 Canister Cost	**-**	**-**	***32.031***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - EF008 Block 2 Missile Cost																		
Recurring Cost																		
7.1.1) EF008 G&C(†)	531,108.55	608	322.914	556,460.60	108	60.098	536,484.71	120	64.378	547,214.39	100	54.721	-	-	-	547,214.39	100	54.721
7.1.2) EF008 Propulsion(†)	73,705.59	608	44.813	73,556.90	108	7.944	75,444.71	120	9.053	76,953.59	100	7.695	-	-	-	76,953.59	100	7.695
7.1.3) EF008 Safe and Arm Device(†)	9,535.66	603	5.750	6,000.00	108	0.648	6,125.00	120	0.735	6,215.00	100	0.622	-	-	-	6,215.00	100	0.622
7.1.4) EF008 Ordnance Pack(†)	49,734.66	603	29.990	47,008.69	108	5.077	48,031.80	120	5.764	48,992.00	100	4.899	-	-	-	48,992.00	100	4.899
7.1.5) EF008 Warhead(†) (1)	22,429.63	675	15.140	-	-	-	22,727.54	120	2.727	23,182.09	100	2.318	-	-	-	23,182.09	100	2.318

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2242 / Rolling Airframe Missile (RAM)	Item Number / Title [DODIC]: 1 / Rolling Airframe Missile (RAM)
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
7.1.6) EF008 Canister(†)	50,725.33	608	30.841	53,000.00	108	5.724	54,101.85	120	6.492	55,183.88	100	5.518	-	-	-	55,183.88	100	5.518
7.1.7) EF008 BLK 2 GMRP ORDALTS(†)	576,666.67	12	6.920	680,000.00	9	6.120	609,837.00	9	5.489	584,602.71	7	4.092	-	-	-	584,602.71	7	4.092
7.1.8) EF008 Telemeters(†) (2)	32,618.56	97	3.164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.1.9) EF008 Transportation	-	-	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*459.547*	-	-	*85.611*	-	-	*94.638*	-	-	*79.865*	-	-	-	-	-	*79.865*
Non Recurring Cost																		
7.2.1) EF008 BLK 2B HUM(†)	2,258K	1	2.258	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*2.258*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - EF008 Block 2 Missile Cost	**-**	**-**	***461.805***	**-**	**-**	***85.611***	**-**	**-**	***94.638***	**-**	**-**	***79.865***	**-**	**-**	**-**	**-**	**-**	***79.865***
Hardware - EF850 Component Improvement/DMS Cost																		
Recurring Cost																		
8.1.1) EF850 Component Improvement (3)	-	-	71.554	-	-	1.534	-	-	1.853	-	-	1.279	-	-	-	-	-	1.279
8.1.2) EF850 Diminishing Manufacturing Sources (4)	-	-	14.318	-	-	3.452	-	-	2.312	-	-	2.315	-	-	-	-	-	2.315
Subtotal: Recurring Cost	-	-	*85.872*	-	-	*4.986*	-	-	*4.165*	-	-	*3.594*	-	-	-	-	-	*3.594*
Subtotal: Hardware - EF850 Component Improvement/ DMS Cost	**-**	**-**	***85.872***	**-**	**-**	***4.986***	**-**	**-**	***4.165***	**-**	**-**	***3.594***	**-**	**-**	**-**	**-**	**-**	***3.594***
Hardware - EF957 Containers Cost																		
Recurring Cost																		
9.1.1) EF957 Container(†) (5)	8,635.14	370	3.195	10,875.00	48	0.522	12,423.96	40	0.497	12,660.02	34	0.430	-	-	-	12,660.02	34	0.430
Subtotal: Recurring Cost	-	-	*3.195*	-	-	*0.522*	-	-	*0.497*	-	-	*0.430*	-	-	-	-	-	*0.430*
Subtotal: Hardware - EF957 Containers Cost	**-**	**-**	***3.195***	**-**	**-**	***0.522***	**-**	**-**	***0.497***	**-**	**-**	***0.430***	**-**	**-**	**-**	**-**	**-**	***0.430***
Support - EF830 Production Support Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2242 / Rolling Airframe Missile (RAM)	Item Number / Title [DODIC]: 1 / Rolling Airframe Missile (RAM)
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
10.1) EF830 Production Support Contractor Engineering	-	-	44.796	-	-	2.295	-	-	3.843	-	-	3.000	-	-	-	-	-	3.000
10.2) EF830 Production Support Gov In-House Engineering	-	-	43.941	-	-	2.540	-	-	2.591	-	-	2.597	-	-	-	-	-	2.597
Subtotal: Support - EF830 Production Support Cost	**-**	**-**	***88.737***	**-**	**-**	***4.835***	**-**	**-**	***6.434***	**-**	**-**	***5.597***	**-**	**-**	**-**	**-**	**-**	***5.597***
Support - EF860 Product Acceptance Cost																		
11.1) EF860 Product Acceptance	-	-	5.937	-	-	0.142	-	-	0.414	-	-	0.422	-	-	-	-	-	0.422
Subtotal: Support - EF860 Product Acceptance Cost	**-**	**-**	***5.937***	**-**	**-**	***0.142***	**-**	**-**	***0.414***	**-**	**-**	***0.422***	**-**	**-**	**-**	**-**	**-**	***0.422***
Support - EF950 Tool & Test Equipment Cost																		
12.1) EF950 Tool & Test Equipment	-	-	1.205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - EF950 Tool & Test Equipment Cost	**-**	**-**	***1.205***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - EF974 ILS Cost																		
13.1) EF974 ILS	-	-	7.282	-	-	0.125	-	-	0.617	-	-	0.625	-	-	-	-	-	0.625
13.2) WAXXX Acquisition Workforce Fund 2009	-	-	0.347	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - EF974 ILS Cost	**-**	**-**	***7.629***	**-**	**-**	***0.125***	**-**	**-**	***0.617***	**-**	**-**	***0.625***	**-**	**-**	**-**	**-**	**-**	***0.625***
Gross/Weapon System Cost	**739,226.04**	**1,805**	**1,334.303**	**890,935.19**	**108**	**96.221**	**889,708.33**	**120**	**106.765**	**905,330.00**	**100**	**90.533**	**-**	**-**	**0.000**	**905,330.00**	**100**	**90.533**

Remarks:
[Support Cost] Additional efforts required to support DMS is driving the increase in production support for updating the technical data package (TDP). Production support is an annual requirement which supports all on-going production and is independent of contract award quantities.

(†) indicates the presence of a P-5a

Footnotes:
(1) FY21 Warheads will need to be procured.
(2) Unit Cost has been zeroed due to the budget reduction.
(3) FY19 Component Improvement funds partially utilized to support a quantity of 108. FY20 Funding supports final implementation of the ERF Tech Refresh Project.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(4) DMS reflects normal levels of manufacturing obsolescence associated with Field-Programmable Gate Arrays (FPGA), flash drives, capacitors, resistors, inductors, diodes, adhesives, chemicals (rocket motor), materials (potting, fiberglass, printed circuit cards, alloys), etc. RAM also has a requirement for long term storage making it susceptible to tin whiskers. Therefore, many components require unique tin-lead alloy or lead coating to prevent this phenomenon. These components historically have recurring short time frame obsolescence issues.

(5) A container is required for every three Missiles. FY21 includes 34 containers to support new production deliveries.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2242 / Rolling Airframe Missile (RAM)	Item Number / Title [DODIC]: 1 / Rolling Airframe Missile (RAM)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
7.1.1) EF008 G&C(†)		2012	Raytheon CO / Tucson AZ	SS / FFP	NAVSEA	Jul 2012	Jun 2014	61	737,000.00	Y		Feb 2011
7.1.1) EF008 G&C(†)		2013	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2012	Dec 2014	61	556,409.84	Y		Feb 2011
7.1.1) EF008 G&C(†)		2014	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Jun 2014	Jun 2016	66	497,909.09	Y		Jun 2012
7.1.1) EF008 G&C(†)		2015	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Feb 2015	Feb 2017	90	460,181.24	Y		Jun 2012
7.1.1) EF008 G&C(†)		2016	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2015	Dec 2017	90	526,233.33	Y		Feb 2014
7.1.1) EF008 G&C(†)		2017	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2016	Dec 2018	120	493,831.03	Y		Feb 2014
7.1.1) EF008 G&C(†)		2018	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	May 2018	May 2020	120	525,973.57	Y		Feb 2016
7.1.1) EF008 G&C(†)		2019	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Mar 2019	Mar 2021	108	556,460.60	Y		Feb 2016
7.1.1) EF008 G&C(†)		2020	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Feb 2020	Feb 2022	120	536,484.71	Y		Feb 2018
7.1.1) EF008 G&C(†)		2021	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2020	Dec 2022	100	547,214.39	Y		Feb 2018
7.1.2) EF008 Propulsion(†)		2012	Raytheon CO / Tuscon, AZ	SS / FFP	NAVSEA	Jul 2012	Jul 2014	61	75,000.00	Y		Feb 2011
7.1.2) EF008 Propulsion(†)		2013	Raytheon CO / Tuscon, AZ	SS / FFP	NAVSEA	Dec 2012	Dec 2014	61	76,278.69	Y		Feb 2011
7.1.2) EF008 Propulsion(†)		2014	Raytheon CO / Tuscon, AZ	SS / FFP	NAVSEA	Jun 2014	Jun 2016	66	83,151.52	Y		Feb 2013
7.1.2) EF008 Propulsion(†)		2015	Raytheon CO / Tuscon, AZ	SS / FFP	NAVSEA	Feb 2015	Feb 2017	90	68,606.49	Y		Feb 2013
7.1.2) EF008 Propulsion(†)		2016	Raytheon CO / Tuscon, AZ	SS / FFP	NAVSEA	Dec 2015	Dec 2017	90	78,723.03	Y		Feb 2015
7.1.2) EF008 Propulsion(†)		2017	Raytheon CO / Tuscon, AZ	SS / FFP	NAVSEA	Dec 2016	Dec 2018	120	66,332.00	Y		Feb 2015
7.1.2) EF008 Propulsion(†)		2018	Raytheon CO / Tuscon, AZ	SS / FFP	NAVSEA	May 2018	May 2020	120	73,973.57	Y		Feb 2016
7.1.2) EF008 Propulsion(†)		2019	Raytheon CO / Tuscon, AZ	SS / FFP	NAVSEA	Mar 2019	Mar 2021	108	73,556.90	Y		Feb 2016
7.1.2) EF008 Propulsion(†)		2020	Raytheon CO / Tuscon, AZ	SS / FFP	NAVSEA	Feb 2020	Feb 2022	120	75,444.71	Y		Feb 2018
7.1.2) EF008 Propulsion(†)		2021	Raytheon CO / Tuscon, AZ	SS / FFP	NAVSEA	Dec 2020	Dec 2022	100	76,953.59	Y		Feb 2018
7.1.3) EF008 Safe and Arm Device		2012	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Jul 2012	Jul 2014	61	15,000.00	Y		Feb 2011
7.1.3) EF008 Safe and Arm Device		2013	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2012	Dec 2014	61	15,262.30	Y		Feb 2011
7.1.3) EF008 Safe and Arm Device		2014	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Jun 2014	Jun 2016	66	16,621.21	Y		Feb 2013
7.1.3) EF008 Safe and Arm Device		2015	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Feb 2015	Feb 2017	90	6,472.31	Y		Feb 2013
7.1.3) EF008 Safe and Arm Device		2016	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2015	Dec 2017	90	7,307.52	Y		Feb 2015
7.1.3) EF008 Safe and Arm Device		2017	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2016	Dec 2018	120	7,299.69	Y		Feb 2015
7.1.3) EF008 Safe and Arm Device		2018	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	May 2018	May 2020	115	6,000.00	Y		Feb 2016
7.1.3) EF008 Safe and Arm Device		2019	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2018	Dec 2020	108	6,000.00	Y		Feb 2016
7.1.3) EF008 Safe and Arm Device		2020	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Feb 2020	Feb 2022	120	6,125.00	Y		Feb 2018

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2242 / Rolling Airframe Missile (RAM)	Item Number / Title [DODIC]: 1 / Rolling Airframe Missile (RAM)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
7.1.3) EF008 Safe and Arm Device		2021	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2020	Dec 2022	100	6,215.00	Y		Feb 2018
7.1.4) EF008 Ordnance Pack(†)		2012	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Jul 2012	Jul 2014	61	48,000.00	Y		Feb 2011
7.1.4) EF008 Ordnance Pack(†)		2013	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2012	Dec 2014	61	48,819.67	Y		Feb 2011
7.1.4) EF008 Ordnance Pack(†)		2014	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Jun 2014	Jun 2016	66	53,212.12	Y		Feb 2013
7.1.4) EF008 Ordnance Pack(†)		2015	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Feb 2015	Feb 2017	90	47,247.87	Y		Feb 2013
7.1.4) EF008 Ordnance Pack(†)		2016	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2015	Dec 2017	90	54,022.22	Y		Feb 2015
7.1.4) EF008 Ordnance Pack(†)		2017	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2016	Dec 2018	120	50,433.07	Y		Feb 2015
7.1.4) EF008 Ordnance Pack(†)		2018	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	May 2018	May 2020	115	47,008.69	Y		Feb 2016
7.1.4) EF008 Ordnance Pack(†)		2019	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Mar 2019	Mar 2021	108	47,008.69	Y		Feb 2016
7.1.4) EF008 Ordnance Pack(†)		2020	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Feb 2020	Feb 2022	120	48,031.80	Y		Feb 2018
7.1.4) EF008 Ordnance Pack(†)		2021	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2020	Dec 2022	100	48,992.00	Y		Feb 2018
7.1.5) EF008 Warhead		2012	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Jul 2012	Jul 2014	61	14,508.20	Y		Feb 2011
7.1.5) EF008 Warhead		2013	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2012	Dec 2014	61	14,754.10	Y		Feb 2011
7.1.5) EF008 Warhead		2014	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Jun 2014	Jun 2016	66	16,075.76	Y		Feb 2013
7.1.5) EF008 Warhead		2015	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Feb 2015	Feb 2017	90	25,242.00	Y		Feb 2013
7.1.5) EF008 Warhead		2016	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2015	Dec 2017	90	28,765.76	Y		Feb 2015
7.1.5) EF008 Warhead		2017	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2016	Dec 2018	120	28,734.91	Y		Feb 2015
7.1.5) EF008 Warhead		2018	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	May 2018	May 2020	187	21,310.16	Y		Feb 2016
7.1.5) EF008 Warhead		2020	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Feb 2020	Feb 2022	120	22,727.54	Y		Feb 2018
7.1.5) EF008 Warhead		2021	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2020	Dec 2022	100	23,182.09	Y		Feb 2018
7.1.6) EF008 Canister(†)		2012	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Jul 2012	Jul 2014	61	60,000.00	Y		Feb 2011
7.1.6) EF008 Canister(†)		2013	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2012	Dec 2014	61	57,786.89	Y		Feb 2011
7.1.6) EF008 Canister(†)		2014	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Jun 2014	Jun 2016	66	66,515.15	Y		Feb 2013
7.1.6) EF008 Canister(†)		2015	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Feb 2015	Feb 2017	90	39,481.09	Y		Feb 2013
7.1.6) EF008 Canister(†)		2016	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2015	Dec 2017	90	44,887.43	Y		Feb 2015
7.1.6) EF008 Canister(†)		2017	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2016	Dec 2018	120	44,233.30	Y		Feb 2015
7.1.6) EF008 Canister(†)		2018	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	May 2018	May 2020	120	53,042.00	Y		Feb 2016
7.1.6) EF008 Canister(†)		2019	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Mar 2019	Mar 2021	108	53,000.00	Y		Feb 2016
7.1.6) EF008 Canister(†)		2020	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Feb 2020	Feb 2022	120	54,101.85	Y		Feb 2018

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2242 / Rolling Airframe Missile (RAM)	Item Number / Title [DODIC]: 1 / Rolling Airframe Missile (RAM)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
7.1.6) EF008 Canister(†)		2021	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2020	Dec 2022	100	55,183.88	Y		Feb 2018
7.1.7) EF008 BLK 2 GMRP ORDALTS(†)		2018	Raytheon CO (6) / Tucson AZ	SS / FFP	NAVSEA	May 2018	May 2020	12	576,665.00	Y		Feb 2016
7.1.7) EF008 BLK 2 GMRP ORDALTS(†)		2019	Raytheon CO (6) / Tucson AZ	SS / FFP	NAVSEA	Jun 2019	Jun 2021	9	680,000.00	Y		Feb 2017
7.1.7) EF008 BLK 2 GMRP ORDALTS(†)		2020	Raytheon CO (6) / Tucson AZ	SS / FFP	NAVSEA	Feb 2020	Feb 2022	9	609,837.00	Y		Feb 2018
7.1.7) EF008 BLK 2 GMRP ORDALTS(†)		2021	Raytheon CO (6) / Tucson AZ	SS / FFP	NAVSEA	Dec 2020	Dec 2022	7	584,602.71	Y		Feb 2018
7.1.8) EF008 Telemeters		2015	NAWC China Lake / China Lake, CA	WR	CA	Feb 2015	May 2016	35	25,992.00	Y		
7.1.8) EF008 Telemeters		2016	NAWC China Lake / China Lake, CA	WR	CA	Oct 2015	Jan 2017	24	31,250.00	Y		
7.1.8) EF008 Telemeters		2017	NAWC China Lake / China Lake, CA	WR	CA	Oct 2016	Jan 2018	33	41,000.00	Y		
7.2.1) EF008 BLK 2B HUM		2018	Raytheon CO / Tucson AZ	SS / FFP	NAVSEA	May 2018	May 2020	1	2,258K	Y		Feb 2016
9.1.1) EF957 Container		2014	NSWC Indian Head / Picatinny, NJ	C / FFP	NJ	Feb 2015	Aug 2015	108	6,815.00	Y		Nov 2014
9.1.1) EF957 Container		2015	NSWC Indian Head / Picatinny, NJ	C / FFP	NJ	Jul 2015	Jan 2016	93	6,967.74	Y		Nov 2014
9.1.1) EF957 Container		2018	NSWC Indian Head / Picatinny, NJ	C / FFP	NJ	Jan 2018	Jul 2018	20	15,525.00	Y		Jun 2017
9.1.1) EF957 Container		2019	NSWC Indian Head / Picatinny, NJ	C / FFP	NJ	Jul 2019	Jan 2020	48	10,875.00	Y		Jun 2017
9.1.1) EF957 Container		2020	NSWC Indian Head / Picatinny, NJ	C / FFP	NJ	Oct 2019	Apr 2020	40	12,423.96	Y		Sep 2019
9.1.1) EF957 Container		2021	NSWC Indian Head / Picatinny, NJ	C / FFP	NJ	Oct 2020	Apr 2021	34	12,660.02	Y		Jun 2020

(†) indicates the presence of a P-21

Footnotes:

(6) MSR assumes ORDALT procurement is in conjunction with procurement of 120 GMRP's.

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2

P-1 Line Item Number / Title: 2242 / Rolling Airframe Missile (RAM)

Item Number / Title [DODIC]: 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2012												Fiscal Year 2013												BALANCE
							Calendar Year 2012												Calendar Year 2013												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2011	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.1) EF008 G&C																															
	2	2012	NAVY	61	0	61										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61
	1	2013	NAVY	61	0	61															A -	-	-	-	-	-	-	-	-	-	61
	1	2014	NAVY	66	0	66																									66
	1	2015	NAVY	90	0	90																									90
	1	2016	NAVY	90	0	90																									90
	1	2017	NAVY	120	0	120																									120
	1	2018	NAVY	120	0	120																									120
	1	2019	NAVY	108	0	108																									108
	1	2020	NAVY	120	0	120																									120
	1	2021	NAVY	100	0	100																									100
7.1.2) EF008 Propulsion																															
	3	2012	NAVY	61	0	61										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61
	3	2013	NAVY	61	0	61															A -	-	-	-	-	-	-	-	-	-	61
	3	2014	NAVY	66	0	66																									66
	3	2015	NAVY	90	0	90																									90
	3	2016	NAVY	90	0	90																									90
	3	2017	NAVY	120	0	120																									120
	3	2018	NAVY	120	0	120																									120
	3	2019	NAVY	108	0	108																									108
	3	2020	NAVY	120	0	120																									120
	3	2021	NAVY	100	0	100																									100
7.1.4) EF008 Ordnance Pack																															
	4	2012	NAVY	61	0	61										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61
	4	2013	NAVY	61	0	61															A -	-	-	-	-	-	-	-	-	-	61
	4	2014	NAVY	66	0	66																									66
	4	2015	NAVY	90	0	90																									90
	4	2016	NAVY	90	0	90																									90
	4	2017	NAVY	120	0	120																									120
	4	2018	NAVY	115	0	115																									115
	4	2019	NAVY	108	0	108																									108
	4	2020	NAVY	120	0	120																									120
	4	2021	NAVY	100	0	100																									100
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2012												Fiscal Year 2013												BALANCE
										Calendar Year 2012												Calendar Year 2013									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2011	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.6) EF008 Canister																															
	5	2012	NAVY	61	0	61										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61
	5	2013	NAVY	61	0	61															A -	-	-	-	-	-	-	-	-	-	61
	5	2014	NAVY	66	0	66																									66
	5	2015	NAVY	90	0	90																									90
	5	2016	NAVY	90	0	90																									90
	5	2017	NAVY	120	0	120																									120
	5	2018	NAVY	120	0	120																									120
	5	2019	NAVY	108	0	108																									108
	5	2020	NAVY	120	0	120																									120
	5	2021	NAVY	100	0	100																									100
7.1.7) EF008 BLK 2 GMRP ORDALTS																															
	6	2018	NAVY	12	0	12																									12
	6	2019	NAVY	9	0	9																									9
	6	2020	NAVY	9	0	9																									9
	6	2021	NAVY	7	0	7																									7
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2

P-1 Line Item Number / Title: 2242 / Rolling Airframe Missile (RAM)

Item Number / Title [DODIC]: 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2014												Fiscal Year 2015												BALANCE
							Calendar Year 2014												Calendar Year 2015												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.1) EF008 G&C																															
	2	2012	NAVY	61	0	61	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	5	6					0
	1	2013	NAVY	61	0	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	11
	1	2014	NAVY	66	0	66									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66
	1	2015	NAVY	90	0	90																	A -	-	-	-	-	-	-	-	90
	1	2016	NAVY	90	0	90																									90
	1	2017	NAVY	120	0	120																									120
	1	2018	NAVY	120	0	120																									120
	1	2019	NAVY	108	0	108																									108
	1	2020	NAVY	120	0	120																									120
	1	2021	NAVY	100	0	100																									100
7.1.2) EF008 Propulsion																															
	3	2012	NAVY	61	0	61	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	6					0
	3	2013	NAVY	61	0	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	11
	3	2014	NAVY	66	0	66									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66
	3	2015	NAVY	90	0	90																	A -	-	-	-	-	-	-	-	90
	3	2016	NAVY	90	0	90																									90
	3	2017	NAVY	120	0	120																									120
	3	2018	NAVY	120	0	120																									120
	3	2019	NAVY	108	0	108																									108
	3	2020	NAVY	120	0	120																									120
	3	2021	NAVY	100	0	100																									100
7.1.4) EF008 Ordnance Pack																															
	4	2012	NAVY	61	0	61	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	6					0
	4	2013	NAVY	61	0	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	11
	4	2014	NAVY	66	0	66									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66
	4	2015	NAVY	90	0	90																	A -	-	-	-	-	-	-	-	90
	4	2016	NAVY	90	0	90																									90
	4	2017	NAVY	120	0	120																									120
	4	2018	NAVY	115	0	115																									115
	4	2019	NAVY	108	0	108																									108
	4	2020	NAVY	120	0	120																									120
	4	2021	NAVY	100	0	100																									100
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2014												Fiscal Year 2015												BALANCE
							Calendar Year 2014												Calendar Year 2015												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.6) EF008 Canister																															
	5	2012	NAVY	61	0	61	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	5	6				0
	5	2013	NAVY	61	0	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	11
	5	2014	NAVY	66	0	66									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66
	5	2015	NAVY	90	0	90																	A -	-	-	-	-	-	-	-	90
	5	2016	NAVY	90	0	90																									90
	5	2017	NAVY	120	0	120																									120
	5	2018	NAVY	120	0	120																									120
	5	2019	NAVY	108	0	108																									108
	5	2020	NAVY	120	0	120																									120
	5	2021	NAVY	100	0	100																									100
7.1.7) EF008 BLK 2 GMRP ORDALTS																															
	6	2018	NAVY	12	0	12																									12
	6	2019	NAVY	9	0	9																									9
	6	2020	NAVY	9	0	9																									9
	6	2021	NAVY	7	0	7																									7
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2

P-1 Line Item Number / Title: 2242 / Rolling Airframe Missile (RAM)

Item Number / Title [DODIC]: 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
							Calendar Year 2016												Calendar Year 2017												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.1) EF008 G&C																															
	2	2012	NAVY	61	61	0																									0
	1	2013	NAVY	61	50	11	5	6																							0
	1	2014	NAVY	66	0	66	-	-	-	-	-	-	-	-	5	5	5	5	5	5	6	6	6	6	6	6					0
	1	2015	NAVY	90	0	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	7	8	7	8	7	8	30
	1	2016	NAVY	90	0	90			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90
	1	2017	NAVY	120	0	120															A -	-	-	-	-	-	-	-	-	-	120
	1	2018	NAVY	120	0	120																									120
	1	2019	NAVY	108	0	108																									108
	1	2020	NAVY	120	0	120																									120
	1	2021	NAVY	100	0	100																									100
7.1.2) EF008 Propulsion																															
	3	2012	NAVY	61	61	0																									0
	3	2013	NAVY	61	50	11	5	6																							0
	3	2014	NAVY	66	0	66	-	-	-	-	-	-	-	-	5	5	5	5	5	5	6	6	6	6	6	6					0
	3	2015	NAVY	90	0	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	7	8	7	8	7	8	30
	3	2016	NAVY	90	0	90			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90
	3	2017	NAVY	120	0	120															A -	-	-	-	-	-	-	-	-	-	120
	3	2018	NAVY	120	0	120																									120
	3	2019	NAVY	108	0	108																									108
	3	2020	NAVY	120	0	120																									120
	3	2021	NAVY	100	0	100																									100
7.1.4) EF008 Ordnance Pack																															
	4	2012	NAVY	61	61	0																									0
	4	2013	NAVY	61	50	11	5	6																							0
	4	2014	NAVY	66	0	66	-	-	-	-	-	-	-	-	5	5	5	5	5	5	6	6	6	6	6	6					0
	4	2015	NAVY	90	0	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	7	8	7	8	7	8	30
	4	2016	NAVY	90	0	90			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90
	4	2017	NAVY	120	0	120															A -	-	-	-	-	-	-	-	-	-	120
	4	2018	NAVY	115	0	115																									115
	4	2019	NAVY	108	0	108																									108
	4	2020	NAVY	120	0	120																									120
	4	2021	NAVY	100	0	100																									100
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
							Calendar Year 2016												Calendar Year 2017												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.6) EF008 Canister																															
	5	2012	NAVY	61	61	0																									0
	5	2013	NAVY	61	50	11	5	6																							0
	5	2014	NAVY	66	0	66	-	-	-	-	-	-	-	-	5	5	5	5	5	5	6	6	6	6	6	6					0
	5	2015	NAVY	90	0	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	7	8	7	8	7	8	30
	5	2016	NAVY	90	0	90			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90
	5	2017	NAVY	120	0	120															A -	-	-	-	-	-	-	-	-	-	120
	5	2018	NAVY	120	0	120																									120
	5	2019	NAVY	108	0	108																									108
	5	2020	NAVY	120	0	120																									120
	5	2021	NAVY	100	0	100																									100
7.1.7) EF008 BLK 2 GMRP ORDALTS																															
	6	2018	NAVY	12	0	12																									12
	6	2019	NAVY	9	0	9																									9
	6	2020	NAVY	9	0	9																									9
	6	2021	NAVY	7	0	7																									7
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM) | **Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.1) EF008 G&C																															
	2	2012	NAVY	61	61	0																									0
	1	2013	NAVY	61	61	0																									0
	1	2014	NAVY	66	66	0																									0
	1	2015	NAVY	90	60	30	7	8	7	8																					0
	1	2016	NAVY	90	0	90	-	-	7	8	7	8	7	8	7	8	7	8	7	8											0
	1	2017	NAVY	120	0	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	10	10	10	10	10	20
	1	2018	NAVY	120	0	120								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120
	1	2019	NAVY	108	0	108																		A -	-	-	-	-	-	-	108
	1	2020	NAVY	120	0	120																									120
	1	2021	NAVY	100	0	100																									100
7.1.2) EF008 Propulsion																															
	3	2012	NAVY	61	61	0																									0
	3	2013	NAVY	61	61	0																									0
	3	2014	NAVY	66	66	0																									0
	3	2015	NAVY	90	60	30	7	8	7	8																					0
	3	2016	NAVY	90	0	90	-	-	7	8	7	8	7	8	7	8	7	8	7	8											0
	3	2017	NAVY	120	0	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	10	10	10	10	10	20
	3	2018	NAVY	120	0	120								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120
	3	2019	NAVY	108	0	108																		A -	-	-	-	-	-	-	108
	3	2020	NAVY	120	0	120																									120
	3	2021	NAVY	100	0	100																									100
7.1.4) EF008 Ordnance Pack																															
	4	2012	NAVY	61	61	0																									0
	4	2013	NAVY	61	61	0																									0
	4	2014	NAVY	66	66	0																									0
	4	2015	NAVY	90	60	30	7	8	7	8																					0
	4	2016	NAVY	90	0	90	-	-	7	8	7	8	7	8	7	8	7	8	7	8											0
	4	2017	NAVY	120	0	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	10	10	10	10	10	20
	4	2018	NAVY	115	0	115								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115
	4	2019	NAVY	108	0	108																		A -	-	-	-	-	-	-	108
	4	2020	NAVY	120	0	120																									120
	4	2021	NAVY	100	0	100																									100
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM) | **Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.6) EF008 Canister																															
	5	2012	NAVY	61	61	0																									0
	5	2013	NAVY	61	61	0																									0
	5	2014	NAVY	66	66	0																									0
	5	2015	NAVY	90	60	30	7	8	7	8																					0
	5	2016	NAVY	90	0	90	-	-	7	8	7	8	7	8	7	8	7	8	7	8											0
	5	2017	NAVY	120	0	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	10	10	10	10	10	20
	5	2018	NAVY	120	0	120								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120
	5	2019	NAVY	108	0	108																		A -	-	-	-	-	-	-	108
	5	2020	NAVY	120	0	120																									120
	5	2021	NAVY	100	0	100																									100
7.1.7) EF008 BLK 2 GMRP ORDALTS																															
	6	2018	NAVY	12	0	12								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	6	2019	NAVY	9	0	9																					A -	-	-	-	9
	6	2020	NAVY	9	0	9																									9
	6	2021	NAVY	7	0	7																									7
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021													BALANCE
							Calendar Year 2020												Calendar Year 2021													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.1) EF008 G&C																																
	2	2012	NAVY	61	61	0																										0
	1	2013	NAVY	61	61	0																										0
	1	2014	NAVY	66	66	0																										0
	1	2015	NAVY	90	90	0																										0
	1	2016	NAVY	90	90	0																										0
	1	2017	NAVY	120	100	20	10	10																								0
	1	2018	NAVY	120	0	120	-	-	-	-	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10							0
	1	2019	NAVY	108	0	108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	9	9	9	9	9	9		45
	1	2020	NAVY	120	0	120					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		120
	1	2021	NAVY	100	0	100															A -	-	-	-	-	-	-	-	-	-		100
7.1.2) EF008 Propulsion																																
	3	2012	NAVY	61	61	0																										0
	3	2013	NAVY	61	61	0																										0
	3	2014	NAVY	66	66	0																										0
	3	2015	NAVY	90	90	0																										0
	3	2016	NAVY	90	90	0																										0
	3	2017	NAVY	120	100	20	10	10																								0
	3	2018	NAVY	120	0	120	-	-	-	-	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10							0
	3	2019	NAVY	108	0	108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	9	9	9	9	9	9		45
	3	2020	NAVY	120	0	120					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		120
	3	2021	NAVY	100	0	100															A -	-	-	-	-	-	-	-	-	-		100
7.1.4) EF008 Ordnance Pack																																
	4	2012	NAVY	61	61	0																										0
	4	2013	NAVY	61	61	0																										0
	4	2014	NAVY	66	66	0																										0
	4	2015	NAVY	90	90	0																										0
	4	2016	NAVY	90	90	0																										0
	4	2017	NAVY	120	100	20	10	10																								0
	4	2018	NAVY	115	0	115	-	-	-	-	-	-	-	10	10	10	10	10	10	10	9	9	9	9	9							0
	4	2019	NAVY	108	0	108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	9	9	9	9	9	9		45
	4	2020	NAVY	120	0	120					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		120
	4	2021	NAVY	100	0	100															A -	-	-	-	-	-	-	-	-	-		100
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
										Calendar Year 2020												Calendar Year 2021									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.6) EF008 Canister																															
	5	2012	NAVY	61	61	0																									0
	5	2013	NAVY	61	61	0																									0
	5	2014	NAVY	66	66	0																									0
	5	2015	NAVY	90	90	0																									0
	5	2016	NAVY	90	90	0																									0
	5	2017	NAVY	120	100	20	10	10																							0
	5	2018	NAVY	120	0	120	-	-	-	-	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10						0
	5	2019	NAVY	108	0	108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	9	9	9	9	9	9	45
	5	2020	NAVY	120	0	120					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120
	5	2021	NAVY	100	0	100															A -	-	-	-	-	-	-	-	-	-	100
7.1.7) EF008 BLK 2 GMRP ORDALTS																															
	6	2018	NAVY	12	0	12	-	-	-	-	-	-	-	2	2	2	2	2	2												0
	6	2019	NAVY	9	0	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	1
	6	2020	NAVY	9	0	9					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
	6	2021	NAVY	7	0	7															A -	-	-	-	-	-	-	-	-	-	7
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM) | **Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.1) EF008 G&C																															
	2	2012	NAVY	61	61	0																									0
	1	2013	NAVY	61	61	0																									0
	1	2014	NAVY	66	66	0																									0
	1	2015	NAVY	90	90	0																									0
	1	2016	NAVY	90	90	0																									0
	1	2017	NAVY	120	120	0																									0
	1	2018	NAVY	120	120	0																									0
	1	2019	NAVY	108	63	45	9	9	9	9	9																				0
	1	2020	NAVY	120	0	120	-	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10									0
	1	2021	NAVY	100	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	10	8	10	8	8	8	8	8	16
7.1.2) EF008 Propulsion																															
	3	2012	NAVY	61	61	0																									0
	3	2013	NAVY	61	61	0																									0
	3	2014	NAVY	66	66	0																									0
	3	2015	NAVY	90	90	0																									0
	3	2016	NAVY	90	90	0																									0
	3	2017	NAVY	120	120	0																									0
	3	2018	NAVY	120	120	0																									0
	3	2019	NAVY	108	63	45	9	9	9	9	9																				0
	3	2020	NAVY	120	0	120	-	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10									0
	3	2021	NAVY	100	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	10	8	10	8	8	8	8	8	16
7.1.4) EF008 Ordnance Pack																															
	4	2012	NAVY	61	61	0																									0
	4	2013	NAVY	61	61	0																									0
	4	2014	NAVY	66	66	0																									0
	4	2015	NAVY	90	90	0																									0
	4	2016	NAVY	90	90	0																									0
	4	2017	NAVY	120	120	0																									0
	4	2018	NAVY	115	115	0																									0
	4	2019	NAVY	108	63	45	9	9	9	9	9																				0
	4	2020	NAVY	120	0	120	-	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10									0
	4	2021	NAVY	100	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	10	8	10	8	8	8	8	8	16
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
										Calendar Year 2022												Calendar Year 2023									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.6) EF008 Canister																															
	5	2012	NAVY	61	61	0																									0
	5	2013	NAVY	61	61	0																									0
	5	2014	NAVY	66	66	0																									0
	5	2015	NAVY	90	90	0																									0
	5	2016	NAVY	90	90	0																									0
	5	2017	NAVY	120	120	0																									0
	5	2018	NAVY	120	120	0																									0
	5	2019	NAVY	108	63	45	9	9	9	9	9																				0
	5	2020	NAVY	120	0	120	-	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10									0
	5	2021	NAVY	100	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	8	10	8	10	8	8	8	8	16
7.1.7) EF008 BLK 2 GMRP ORDALTS																															
	6	2018	NAVY	12	12	0																									0
	6	2019	NAVY	9	8	1	1																								0
	6	2020	NAVY	9	0	9	-	-	-	-	2	2	2	2	1																0
	6	2021	NAVY	7	0	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	1							0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
										Calendar Year 2024												Calendar Year 2025									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.1) EF008 G&C																															
	2	2012	NAVY	61	61	0																									0
	1	2013	NAVY	61	61	0																									0
	1	2014	NAVY	66	66	0																									0
	1	2015	NAVY	90	90	0																									0
	1	2016	NAVY	90	90	0																									0
	1	2017	NAVY	120	120	0																									0
	1	2018	NAVY	120	120	0																									0
	1	2019	NAVY	108	108	0																									0
	1	2020	NAVY	120	120	0																									0
	1	2021	NAVY	100	84	16	8	8																							0
7.1.2) EF008 Propulsion																															
	3	2012	NAVY	61	61	0																									0
	3	2013	NAVY	61	61	0																									0
	3	2014	NAVY	66	66	0																									0
	3	2015	NAVY	90	90	0																									0
	3	2016	NAVY	90	90	0																									0
	3	2017	NAVY	120	120	0																									0
	3	2018	NAVY	120	120	0																									0
	3	2019	NAVY	108	108	0																									0
	3	2020	NAVY	120	120	0																									0
	3	2021	NAVY	100	84	16	8	8																							0
7.1.4) EF008 Ordnance Pack																															
	4	2012	NAVY	61	61	0																									0
	4	2013	NAVY	61	61	0																									0
	4	2014	NAVY	66	66	0																									0
	4	2015	NAVY	90	90	0																									0
	4	2016	NAVY	90	90	0																									0
	4	2017	NAVY	120	120	0																									0
	4	2018	NAVY	115	115	0																									0
	4	2019	NAVY	108	108	0																									0
	4	2020	NAVY	120	120	0																									0
	4	2021	NAVY	100	84	16	8	8																							0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
										Calendar Year 2024												Calendar Year 2025									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
7.1.6) EF008 Canister																															
	5	2012	NAVY	61	61	0																									0
	5	2013	NAVY	61	61	0																									0
	5	2014	NAVY	66	66	0																									0
	5	2015	NAVY	90	90	0																									0
	5	2016	NAVY	90	90	0																									0
	5	2017	NAVY	120	120	0																									0
	5	2018	NAVY	120	120	0																									0
	5	2019	NAVY	108	108	0																									0
	5	2020	NAVY	120	120	0																									0
	5	2021	NAVY	100	84	16	8	8																							0
7.1.7) EF008 BLK 2 GMRP ORDALTS																															
	6	2018	NAVY	12	12	0																									0
	6	2019	NAVY	9	9	0																									0
	6	2020	NAVY	9	9	0																									0
	6	2021	NAVY	7	7	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2242 / Rolling Airframe Missile (RAM)	**Item Number / Title [DODIC]:** 1 / Rolling Airframe Missile (RAM)

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 CO - Tucson, AZ	120	240	480	0	3	24	27	0	3	24	27
2	Raytheon CO - Tucson AZ	120	240	480	0	3	23	26	0	3	26	29
3	Raytheon CO - Tuscon, AZ	120	240	480	0	3	24	27	0	3	24	27
4	Raytheon CO - Tucson, AZ	120	240	480	0	3	24	27	0	3	24	27
5	Raytheon CO - Tucson, AZ	120	240	480	0	3	24	27	0	2	24	26
6	Raytheon CO (6) - Tucson AZ	1	240	439	0	0	24	24	0	0	0	0

"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:
(6) MSR assumes ORDALT procurement is in conjunction with procurement of 120 GMRP's.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2248 / Joint Air Ground Missile (JAGM)

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	104	75	320	203	-	203	173	311	294	290	4,246	6,016
Gross/Weapon System Cost *($ in Millions)*	26.164	24.109	75.729	49.386	0.000	49.386	50.371	76.194	77.711	79.264	1,081.371	1,540.299
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	26.164	24.109	75.729	49.386	0.000	49.386	50.371	76.194	77.711	79.264	1,081.371	1,540.299
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**26.164**	**24.109**	**75.729**	**49.386**	**0.000**	**49.386**	**50.371**	**76.194**	**77.711**	**79.264**	**1,081.371**	**1,540.299**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	251,576.92	321,453.33	236,653.13	243,280.79	-	243,280.79	291,161.85	244,996.78	264,323.13	273,324.14	254,679.93	256,033.74

Description:

The Joint Air-to-Ground Missile (JAGM) is an air-launched missile system that will incorporate multi-mode seeker technology thus providing advanced Line-of-Sight and Beyond-Line-of-Sight precision fire and-forget seeker targeting capabilities resulting in increased lethality against soft, hardened, moving, stationary, land and maritime threats. JAGM improves the warfighter's capability in adverse weather, day or night, and in obscured/countermeasure environments. The JAGM Increment 1 system will replace aviation-launched, Tube-launched, Optically-tracked, Wire-guided (TOW) missile, and Helicopter Launched Fire-&-Forget (HELLFIRE) Missile Systems. JAGM is an Army-led joint program that addresses rotary wing and unmanned aerial vehicle requirements. The Department of The Navy threshold platform is the AH-1Z. The JAGM system includes missile, trainers, containers, support equipment, and software modifications to the M-299 launcher. Missile configurations include the JAGM Tactical Missile, Captive Air Training Missile and Air Training Missile. JAGM procurement funding supports the entire JAGM system to include resolution of obsolescence, safety, reliability, weapon integration activities, test sets, engineering services, facilitization, production ramp-up activities and production issues.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2248 / Joint Air Ground Missile (JAGM)

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Joint Air Ground Missile (JAGM)	P-5a, P-21			104 / 26.164	75 / 24.109	320 / 75.729	203 / 49.386	- / 0.000	203 / 49.386
P-40	**Total Gross/Weapon System Cost**				**104 / 26.164**	**75 / 24.109**	**320 / 75.729**	**203 / 49.386**	**- / 0.000**	**203 / 49.386**

*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:
FY2021 funding supports the procurement of 203 JAGM All Up Rounds (AURs), 4 Captive Air Training Missiles (CATMs), Other Production Support (OPS), and production related engineering and logistics support.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2248 / Joint Air Ground Missile (JAGM)	**Item Number / Title [DODIC]:** 1 / Joint Air Ground Missile (JAGM)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	104	75	320	203	-	203
Gross/Weapon System Cost *($ in Millions)*	26.164	24.109	75.729	49.386	0.000	49.386
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	26.164	24.109	75.729	49.386	0.000	49.386
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**26.164**	**24.109**	**75.729**	**49.386**	**0.000**	**49.386**
(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 Dollars)*	251,576.92	321,453.33	236,653.13	243,280.79	-	243,280.79

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) (JG010) JAGM All-Up-Round (AUR)(†) (1)	173,384.62	104	18.032	223,569.00	75	16.768	201,368.00	320	64.438	203,965.00	203	41.405	-	-	-	203,965.00	203	41.405
1.1.3) (JG301) Captive Air Training Missile(†) (2)	-	-	-	-	-	-	188,042.00	4	0.752	191,750.00	4	0.767	-	-	-	191,750.00	4	0.767
Subtotal: Recurring Cost	-	-	*18.032*	-	-	*16.768*	-	-	*65.190*	-	-	*42.172*	-	-	-	-	-	*42.172*
Subtotal: Hardware Cost	**-**	**-**	***18.032***	**-**	**-**	***16.768***	**-**	**-**	***65.190***	**-**	**-**	***42.172***	**-**	**-**	**-**	**-**	**-**	***42.172***
Support - JAGM Support Costs Cost																		
2.1) (JG860) Integrated Logistics Support	-	-	0.524	-	-	0.575	-	-	0.586	-	-	0.597	-	-	-	-	-	0.597
2.2) (JG850) Production Engineering Support	-	-	2.634	-	-	2.906	-	-	2.965	-	-	3.023	-	-	-	-	-	3.023
2.4) (JG851) Other Production Support, Army (3)	-	-	4.974	-	-	2.417	-	-	4.406	-	-	2.374	-	-	-	-	-	2.374
2.5) (JG852) Other Production Support, Contractor (4)	-	-	-	-	-	1.443	-	-	2.582	-	-	1.220	-	-	-	-	-	1.220
Subtotal: Support - JAGM Support Costs Cost	**-**	**-**	***8.132***	**-**	**-**	***7.341***	**-**	**-**	***10.539***	**-**	**-**	***7.214***	**-**	**-**	**-**	**-**	**-**	***7.214***
Gross/Weapon System Cost	**251,576.92**	**104**	**26.164**	**321,453.33**	**75**	**24.109**	**236,653.13**	**320**	**75.729**	**243,280.79**	**203**	**49.386**	**-**	**-**	**0.000**	**243,280.79**	**203**	**49.386**

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2248 / Joint Air Ground Missile (JAGM)	**Item Number / Title [DODIC]:** 1 / Joint Air Ground Missile (JAGM)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(†) indicates the presence of a P-5a

Footnotes:

(1) (JG010) All Up Round (AUR) unit costs will fluctuate according to total procurement between all services.

(2) (JG301) Captive Air Training Missiles unit cost will fluctuate according to total procurement between all services.

(3) (JG851) "Other Production Support, Army" is for a program management administrative fee for execution of JAGM production and deliveries. These costs include program office management costs, support of program reviews, travel, system safety and hazard analysis, public release and security activities, and configuration management. Funding fluctuates based on Army requirements and the total procurement buy per year.

(4) (JG852) "Other Production Support, Contractor" provides funding for the support fee for execution of JAGM production and deliveries. These costs may include resolution of obsolescence, end of-life buys, safety, insensitive munitions, reliability, weapon integration activities, test sets, engineering changes, modifications, facilitation, logistics support and analysis, production ramp-up activities, and other production issues.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2248 / Joint Air Ground Missile (JAGM)	Item Number / Title [DODIC]: 1 / Joint Air Ground Missile (JAGM)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) (JG010) JAGM All-Up-Round (AUR)(†)		2017	Lockheed Martin / Orlando, FL	C / FPIF	Huntsville	Sep 2018	Dec 2018	104	165,980.00	Y		Feb 2015
1.1.1) (JG010) JAGM All-Up-Round (AUR)(†)		2019	Lockheed Martin / Orlando, FL	C / FPIF	Huntsville	Nov 2019	Dec 2021	75	223,569.00	Y		Aug 2018
1.1.1) (JG010) JAGM All-Up-Round (AUR)(†)		2020 (5)	Lockheed Martin / Orlando, FL	C / FPIF	Huntsville	Nov 2020	Oct 2022	320	201,368.00	Y		Jan 2019
1.1.1) (JG010) JAGM All-Up-Round (AUR)(†)		2021 (6)	Lockheed Martin / Orlando, FL	SS / FPIF	Huntsville	May 2021	Oct 2023	203	203,965.00	Y		Jun 2019
1.1.3) (JG301) Captive Air Training Missile		2020	Lockheed Martin / Orlando, FL	C / FPIF	Huntsville	Nov 2020	Dec 2022	4	188,042.00	Y		Jan 2019
1.1.3) (JG301) Captive Air Training Missile		2021	Lockheed Martin / Orlando, FL	SS / FPIF	Huntsville	May 2021	Sep 2023	4	191,750.00	Y		Jun 2019

(†) indicates the presence of a P-21

Footnotes:

(5) FY2020 Contract award date is November 2020 to align with the Army led contracting timeline.

(6) FY2021 Contract award date is May 2021 to align with the Army led contracting timeline.

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2248 / Joint Air Ground Missile (JAGM)	**Item Number / Title [DODIC]:** 1 / Joint Air Ground Missile (JAGM)

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
										Calendar Year 2018												Calendar Year 2019									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) (JG010) JAGM All-Up-Round (AUR) (1)																															
	1	2017	NAVY	104 (7)	0	104												A -	-	-	1	-	-	-	-	-	-	-	-	-	103
	1	2017	ARMY (‡)	373	0	373												A -	-	-	13	19	-	96	32	30	30	30	30	31	62
	1	**2017**	**Total**	**477**	**0**	**477**												**-**	**-**	**-**	**14**	**19**	**-**	**96**	**32**	**30**	**30**	**30**	**30**	**31**	**165**
	1	2019	NAVY	75	0	75																									75
	1	2019	ARMY (‡)	721	0	721																									721
	1	**2019**	**Total**	**796**	**0**	**796**																									**796**
	1	2020	NAVY	320	0	320																									320
	1	2020	ARMY (‡)	545	0	545																									545
	1	**2020**	**Total**	**865**	**0**	**865**																									**865**
	1	2021	NAVY	203	0	203																									203
	1	2021	ARMY (‡)	711	0	711																									711
	1	**2021**	**Total**	**914**	**0**	**914**																									**914**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2248 / Joint Air Ground Missile (JAGM)	**Item Number / Title [DODIC]:** 1 / Joint Air Ground Missile (JAGM)

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
										Calendar Year 2020												Calendar Year 2021									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) (JG010) JAGM All-Up-Round (AUR) (1)																															
	1	2017	NAVY	104 (7)	1	103	-	-	-	50	47	-	-	-	-	-	-	-	-	6											0
	1	2017	ARMY (‡)	373	311	62	31	31	-	-	-	-	-	-	-	-	-	-	-	-											0
	1	**2017**	**Total**	**477**	**312**	**165**	**31**	**31**	**-**	**50**	**47**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**6**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2019	NAVY	75	0	75		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75
	1	2019	ARMY (‡)	721	0	721		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	721
	1	**2019**	**Total**	**796**	**0**	**796**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**796**
	1	2020	NAVY	320	0	320														A -	-	-	-	-	-	-	-	-	-	-	320
	1	2020	ARMY (‡)	545	0	545														A -	-	-	-	-	-	-	-	-	-	-	545
	1	**2020**	**Total**	**865**	**0**	**865**														**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**865**
	1	2021	NAVY	203	0	203																				A -	-	-	-	-	203
	1	2021	ARMY (‡)	711	0	711																				A -	-	-	-	-	711
	1	**2021**	**Total**	**914**	**0**	**914**																				**-**	**-**	**-**	**-**	**-**	**914**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2248 / Joint Air Ground Missile (JAGM)	**Item Number / Title [DODIC]:** 1 / Joint Air Ground Missile (JAGM)

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022															Calendar Year 2023									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) (JG010) JAGM All-Up-Round (AUR) (1)																															
	1	2017	NAVY	104 (7)	104	0																									0
	1	2017	ARMY (‡)	373	373	0																									0
	1	**2017**	**Total**	**477**	**477**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2019	NAVY	75	0	75	-	-	8	7	8	7	8	7	8	7	8	7	-	-											0
	1	2019	ARMY (‡)	721	0	721	-	-	60	60	60	60	60	60	60	60	60	60	60	61											0
	1	**2019**	**Total**	**796**	**0**	**796**	**-**	**-**	**68**	**67**	**68**	**67**	**68**	**67**	**68**	**67**	**68**	**67**	**60**	**61**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2020	NAVY	320	0	320	-	-	-	-	-	-	-	-	-	-	-	-	27	27	27	26	26	26	26	26	26	26	26	31	0
	1	2020	ARMY (‡)	545	0	545	-	-	-	-	-	-	-	-	-	-	-	-	7	8	53	53	53	53	53	53	53	53	53	53	0
	1	**2020**	**Total**	**865**	**0**	**865**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**34**	**35**	**80**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**84**	**0**
	1	2021	NAVY	203	0	203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	203
	1	2021	ARMY (‡)	711	0	711	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	711
	1	**2021**	**Total**	**914**	**0**	**914**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**914**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2248 / Joint Air Ground Missile (JAGM)	**Item Number / Title [DODIC]:** 1 / Joint Air Ground Missile (JAGM)

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
							Calendar Year 2024												Calendar Year 2025												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) (JG010) JAGM All-Up-Round (AUR) (1)																															
	1	2017	NAVY	104 (7)	104	0																									0
	1	2017	ARMY (‡)	373	373	0																									0
	1	**2017**	**Total**	**477**	**477**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2019	NAVY	75	75	0																									0
	1	2019	ARMY (‡)	721	721	0																									0
	1	**2019**	**Total**	**796**	**796**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2020	NAVY	320	320	0																									0
	1	2020	ARMY (‡)	545	545	0																									0
	1	**2020**	**Total**	**865**	**865**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2021	NAVY	203	0	203	16	17	17	17	17	17	17	17	17	17	17	17													0
	1	2021	ARMY (‡)	711	0	711	59	59	59	59	59	59	59	59	59	60	60	60													0
	1	**2021**	**Total**	**914**	**0**	**914**	**75**	**76**	**76**	**76**	**76**	**76**	**76**	**76**	**76**	**77**	**77**	**77**	-	-	-	-	-	-	-	-	-	-	-	-	**0**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2248 / Joint Air Ground Missile (JAGM)	**Item Number / Title [DODIC]:** 1 / Joint Air Ground Missile (JAGM)

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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, FL	600	1,200	2,400	5	12	24	36	8	12	29	41

(‡) 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:
(7) Navy will deliver the 6 weapons showing in November 2020 in the following quantities and months (2- Dec 2020, 2- Jan 2021, 2- Feb 2021).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2254 / Hellfire

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	6,771	23	29	-	115	115	-	-	-	-	-	6,938
Gross/Weapon System Cost *($ in Millions)*	1,053.326	1.530	1.525	0.000	5.572	5.572	0.000	0.000	0.000	0.000	-	1,061.953
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,053.326	1.530	1.525	0.000	5.572	5.572	0.000	0.000	0.000	0.000	-	1,061.953
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,053.326**	**1.530**	**1.525**	**0.000**	**5.572**	**5.572**	**0.000**	**0.000**	**0.000**	**0.000**	**-**	**1,061.953**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	132,563.88	49,782.61	44,517.24	-	45,408.70	45,408.70	-	-	-	-	-	130,476.79
Gross/Weapon System Unit Cost *($ in Dollars)*	155,564.32	66,521.74	52,586.21	-	48,452.17	48,452.17	-	-	-	-	-	153,063.27

Description:

AGM-114 Hellfire is a family of laser guided missiles employed against point and moving targets by both rotary and fixed wing aircraft. The family of Hellfire missiles includes, but is not limited to, AGM-114B/K/K2/K2A/M/N/N-5/P/P+/Q/Q6 variants. These variants include shaped charge warheads for use against armored targets and blast fragmentation warheads for use against urban structures. The AGM-114N is a thermobaric blast fragmentation warhead that maintains the capability provided by the AGM-114M while adding a unique capability against confined compartmented spaces, a typical target type observed in current combat operations. Other variants include the K2A, which has a blast frag sleeve for use against soft-skinned tactical vehicles, the N5, which provides a trajectory shaping capability to increase endgame lethality against vertical structures, and the P/P+ variants, which include high altitude launch trajectories for use from fixed-wing aircraft. Additionally, the Q and Q6 variants have inert warheads, which are used for training on ranges that do not allow live warheads, and to preserve tactical missiles for use in combat. Conversions from one variant to another are done on an as needed basis.

Prior year funding includes Hellfire, Viper Strike, and Griffin.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2254 / Hellfire

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Hellfire Missile	P-5a, P-21			6,771 / 1,053.326	23 / 1.530	29 / 1.525	- / 0.000	115 / 5.572	115 / 5.572
P-40	**Total Gross/Weapon System Cost**				**6,771 / 1,053.326**	**23 / 1.530**	**29 / 1.525**	**- / 0.000**	**115 / 5.572**	**115 / 5.572**

*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:
OCO:
FY 2021 Hellfire OCO funding is to procure 115 ATM-114Q6 missiles to replace inventory that have been expended in support of pre-deployment training for Operation Freedom's Sentinel (OFS).

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2254 / Hellfire	Item Number / Title [DODIC]: 1 / Hellfire Missile
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	6,771	23	29	-	115	115
Gross/Weapon System Cost *($ in Millions)*	1,053.326	1.530	1.525	0.000	5.572	5.572
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,053.326	1.530	1.525	0.000	5.572	5.572
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,053.326**	**1.530**	**1.525**	**0.000**	**5.572**	**5.572**
(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 Dollars)*	155,564.32	66,521.74	52,586.21	-	48,452.17	48,452.17

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) F6010 Hellfire All-Up-Rounds (AURs)	135,013.35	5,992	809.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2) F6300 Air Training Missiles(†)	58,689.35	779	45.719	49,782.61	23	1.145	44,517.24	29	1.291	-	-	0.000	45,407.00	115	5.222	45,407.00	115	5.222
1.1.3) F6420 Containers	-	-	2.264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*856.983*	-	-	*1.145*	-	-	*1.291*	-	-	*0.000*	-	-	*5.222*	-	-	*5.222*
Subtotal: Flyaway Cost	**-**	**-**	***856.983***	**-**	**-**	***1.145***	**-**	**-**	***1.291***	**-**	**-**	***0.000***	**-**	**-**	***5.222***	**-**	**-**	***5.222***
Flyaway - Prior Year Flyaway Cost																		
Recurring Cost																		
2.1.1) Prior Year Flyaway (1)	-	-	40.607	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*40.607*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway - Prior Year Flyaway Cost	**-**	**-**	***40.607***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - Procurement Support Cost																		
3.1) F6240 Government Test Program	-	-	5.579	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Procurement Support Cost	**-**	**-**	***5.579***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - Product Improvement Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2254 / Hellfire	Item Number / Title [DODIC]: 1 / Hellfire Missile
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
4.1) F6310 Product Improvement Program	-	-	1.443	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.2) F6340 Hellfire Conversions	-	-	3.421	-	-	0.155	-	-	-	-	-	-	-	-	-	-	-	-
4.3) F6820 Training Equipment/Test Equipment	-	-	30.009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	**-**	**-**	***34.873***	**-**	**-**	***0.155***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - Production Engineering Cost																		
5.1) F6850 Production Engineering Support (2)	-	-	104.196	-	-	0.129	-	-	0.130	-	-	0.000	-	-	0.200	-	-	0.200
Subtotal: Support - Production Engineering Cost	**-**	**-**	***104.196***	**-**	**-**	***0.129***	**-**	**-**	***0.130***	**-**	**-**	***0.000***	**-**	**-**	***0.200***	**-**	**-**	***0.200***
Support - Integrated Logistics Cost																		
6.1) F6860 Integrated Logistics Support (3)	-	-	11.088	-	-	0.101	-	-	0.104	-	-	0.000	-	-	0.150	-	-	0.150
Subtotal: Support - Integrated Logistics Cost	**-**	**-**	***11.088***	**-**	**-**	***0.101***	**-**	**-**	***0.104***	**-**	**-**	***0.000***	**-**	**-**	***0.150***	**-**	**-**	***0.150***
Gross/Weapon System Cost	**155,564.32**	**6,771**	**1,053.326**	**66,521.74**	**23**	**1.530**	**52,586.21**	**29**	**1.525**	**-**	**-**	**0.000**	**48,452.17**	**115**	**5.572**	**48,452.17**	**115**	**5.572**

(†) indicates the presence of a P-5a

Footnotes:

(1) Prior year costs include funding for Viper Strike and Griffin. Funding procured 140 Viper Strike and 130 Griffin missiles.

(2) Production Engineering Support (PES) is proportional to weapon procurement quantities. Increase in FY 2021 is a result of an increase in planned procured missile quantity.

(3) Integrated Logistics Support (ILS) is proportional to weapon procurement quantities. Increase in FY 2021 is a result of an increase in planned procured missile quantity.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2254 / Hellfire	Item Number / Title [DODIC]: 1 / Hellfire Missile

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.2) F6300 Air Training Missiles(†)	✓	2017 (4)	Lockheed Martin (5) / Orlando, FL	C / FPIF	Huntsville	Aug 2017	Aug 2019	144	52,222.89	Y		Feb 2015
1.1.2) F6300 Air Training Missiles(†)	✓	2018 (6)	Lockheed Martin (5) / Orlando, FL	C / FPIF	Huntsville	Sep 2018	Sep 2020	153	50,130.72	Y		Feb 2015
1.1.2) F6300 Air Training Missiles(†)	✓	2019	Lockheed Martin (5) / Orlando, FL	C / FPIF	Huntsville	Sep 2019	Sep 2021	23	49,782.61	Y		May 2017
1.1.2) F6300 Air Training Missiles(†)	✓	2020	Lockheed Martin (5) / Orlando, FL	C / FPIF	Hunstville	Sep 2020	Sep 2022	29	44,517.24	Y		Jan 2019
1.1.2) F6300 Air Training Missiles(†)	✓	2021 (7)	Lockheed Martin (5) / Orlando, FL	C / FPIF	Hunstville	Sep 2021	Sep 2023	115	45,407.00	Y		Jan 2019

(†) indicates the presence of a P-21

Footnotes:

(4) Original contract awarded in August 2017. Additional QTY's were procured through buy to budget approval and awarded in May 2019. The additional QTY's are reflected on the delivery schedule.

(5) MSR is for Tri-Service Procurement of the Army, Navy and Air Force.

(6) Original contract awarded in September 2018. Additional QTY's were procured through buy to budget approval and awarded in May 2019. The additional QTY's are reflected on the delivery schedule.

(7) F6300 FY 2021 Air Training Missile contract is an Army led contract that awards in September each fiscal year in order to combine all services and FMS procurements to achieve an economical unit cost.

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2254 / Hellfire	**Item Number / Title [DODIC]:** 1 / Hellfire Missile

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
							Calendar Year 2017												Calendar Year 2018												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) F6300 Air Training Missiles																															
Prior Years Deliveries: 482																															
✓	1	2017	NAVY	144	0	144											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	144
✓	1	2018	NAVY	153	0	153																								A -	153
✓	1	2019	NAVY	23	0	23																									23
✓	1	2020	NAVY	29	0	29																									29
✓	1	2021	NAVY	115	0	115																									115
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2254 / Hellfire | **Item Number / Title [DODIC]:** 1 / Hellfire Missile

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
										Calendar Year 2019												Calendar Year 2020									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) F6300 Air Training Missiles																															
Prior Years Deliveries: 482																															
✓	1	2017	NAVY	144	0	144	-	-	-	-	-	-	-	-	-	-	8	8	8	8	8	8	8	8	9	9	9	9	-	-	44
✓	1	2018	NAVY	153	0	153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	145
✓	1	2019	NAVY	23	0	23												A -	-	-	-	-	-	-	-	-	-	-	-	-	23
✓	1	2020	NAVY	29	0	29																								A -	29
✓	1	2021	NAVY	115	0	115																									115
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2254 / Hellfire | **Item Number / Title [DODIC]:** 1 / Hellfire Missile

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
										Calendar Year 2021												Calendar Year 2022									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) F6300 Air Training Missiles																															
Prior Years Deliveries: 482																															
✓	1	2017	NAVY	144	100	44	-	-	-	-	-	-	-	-	-	44															0
✓	1	2018	NAVY	153	8	145	8	8	8	8	8	8	8	9	9	9	9	-	-	-	-	-	-	-	-	-	-	53			0
✓	1	2019	NAVY	23	0	23	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	3									0
✓	1	2020	NAVY	29	0	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	24
✓	1	2021	NAVY	115	0	115												A -	-	-	-	-	-	-	-	-	-	-	-	-	115
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2254 / Hellfire	**Item Number / Title [DODIC]:** 1 / Hellfire Missile

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
							Calendar Year 2023												Calendar Year 2024												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) F6300 Air Training Missiles																															
Prior Years Deliveries: 482																															
✓	1	2017	NAVY	144	144	0																									0
✓	1	2018	NAVY	153	153	0																									0
✓	1	2019	NAVY	23	23	0																									0
✓	1	2020	NAVY	29	5	24	5	5	5	5	4																				0
✓	1	2021	NAVY	115	0	115	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	10	9	9	9	9	9	10		0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2254 / Hellfire	**Item Number / Title [DODIC]:** 1 / Hellfire Missile

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 (5) - Orlando, FL	3,600	6,000	11,000	0	0	0	0	0	6	24	30

"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:
(5) MSR is for Tri-Service Procurement of the Army, Navy and Air Force.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2264 / Stand Off Precision Guided Munitions (SOPGM)

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	451	76	-	-	-	-	-	-	-	-	-	527
Gross/Weapon System Cost *($ in Millions)*	56.839	11.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	67.875
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	56.839	11.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	67.875
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**56.839**	**11.036**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**-**	**67.875**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	111,547.67	101,973.68	-	-	-	-	-	-	-	-	-	110,166.98
Gross/Weapon System Unit Cost *($ in Dollars)*	126,028.82	145,210.53	-	-	-	-	-	-	-	-	-	128,795.07

Description:

Stand Off Precision Guided Munition (SOPGM) weapon, Griffin Missile, is the threshold weapon for the KC-130J Intelligence, Surveillance and Reconnaissance (ISR) Weapon Mission Kit USMC requirement. This weapon satisfies a portion of the required roll-on/roll-off capability inherent in the ISR Weapon Mission Kit.

Griffin is a rocket propelled missile and uses the Global Positioning System/Inertial Navigation System (GPS/INS) to navigate to the target vicinity and a semi-active laser (SAL) seeker for terminal guidance to target impact.
The Griffin will be used on KC130J (Alpha variant) and Cyclone class Patrol Coastal (PC) ships (Bravo variant). The Griffin Alpha variant is an air launched missile and the Bravo variant is a ship launched missile.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2264 / Stand Off Precision Guided Munitions (SOPGM)

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Stand Off Precision Guided Munitions (SOPGM)	P-5a			451 / 56.839	76 / 11.036	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**451 / 56.839**	**76 / 11.036**	**- / 0.000**	**- / 0.000**	**- / 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:
FY19 was the last year of procurement for Griffin Missile.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2264 / Stand Off Precision Guided Munitions (SOPGM)	**Item Number / Title [DODIC]:** 1 / Stand Off Precision Guided Munitions (SOPGM)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	451	76	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	56.839	11.036	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	56.839	11.036	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**56.839**	**11.036**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	126,028.82	145,210.53	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Griffin All-Up-Rounds (AURs) - Bravo Variant(†) (1)	112,914.14	198	22.357	127,333.33	15	1.910	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2) SM012 Griffin All-Up-Rounds (AURs) - Alpha Variant	110,478.26	253	27.951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.3) SM012 Griffin All-Up-Rounds (AUR) - Alpha Variant(†) (2)	-	-	-	95,734.00	61	5.840	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*50.308*	-	-	*7.750*	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway Cost	**-**	**-**	***50.308***	**-**	**-**	***7.750***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - GRIFFIN Cost																		
2.1) SM820 Training Equipment	-	-	0.155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) Production Engineering Support - Griffin Bravo Variant (3)	-	-	2.508	-	-	1.126	-	-	-	-	-	-	-	-	-	-	-	-
2.3) SM860 Integrated Logistics Support (4)	-	-	0.150	-	-	0.300	-	-	-	-	-	-	-	-	-	-	-	-
2.4) SM850 Production Engineering Support (5)	-	-	3.718	-	-	1.860	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2264 / Stand Off Precision Guided Munitions (SOPGM)	**Item Number / Title [DODIC]:** 1 / Stand Off Precision Guided Munitions (SOPGM)
ID Code (A=Service Ready, B=Not Service Ready) :	**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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Subtotal: Support - GRIFFIN Cost	-	-	***6.531***	-	-	***3.286***	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	**126,028.82**	**451**	**56.839**	**145,210.53**	**76**	**11.036**	-	-	**0.000**	-	-	**0.000**	-	-	**0.000**	-	-	**0.000**

(†) indicates the presence of a P-5a

Footnotes:

(1) US SOCOM awarded a sole source 5 years IDIQ in FY 2017 to cover purchases in FY 2017 through end of contract period of performance. Awarded 18 August 2017.

(2) SM012 Griffin All-Up-Rounds (AUR) FY19 QTY updated to reflect the additional units approved through the Buy-to-Budget process.

(3) Production engineering support line includes Griffin Missile engineering services efforts related to field and operations services; Anti-jam Protection Technology Receiver Global Positioning System (GPS); program management office technical support; and US SOCOM contract processing fee. Funding will be required to continue Griffin Missile Ordnance Assessment surveillance program which began in FY 2016 and will be on-going through FY 2019 to extend the Griffin Missile Service Life from 5 years to 11 years to support Fleet loadout requirements.

(4) SM860 Integrated Logistics Support funds support a one-time requirement to certify and qualify the AGM-176A Block III on the Harvest HAWK platform. These funds will provided destructive testing, fund testing costs including flight hours, range space, telemetry, and other required support costs.

(5) SM850 Production Engineering Support funds support a one-time requirement to certify and qualify the AGM-176A Block III on the Harvest HAWK platform. Includes flight clearance support, flight hours, range space, telemetry, and production engineering support.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2264 / Stand Off Precision Guided Munitions (SOPGM)	Item Number / Title [DODIC]: 1 / Stand Off Precision Guided Munitions (SOPGM)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Griffin All-Up-Rounds (AURs) - Bravo Variant		2017 (6)	Raytheon Missile System (7) / Tucson, AZ	SS / IDIQ	Tampa	Oct 2017	Jan 2019	24	122,408.00	Y		Dec 2016
1.1.1) Griffin All-Up-Rounds (AURs) - Bravo Variant		2018	Raytheon Missile System (7) / Tucson, AZ	SS / IDIQ	Tampa	Dec 2017	Mar 2019	19	124,842.11	Y		Dec 2016
1.1.1) Griffin All-Up-Rounds (AURs) - Bravo Variant		2019	Raytheon Missile System (7) / Tucson, AZ	SS / IDIQ	Tampa	Dec 2018	Mar 2020	15	127,333.33	Y		Dec 2016
1.1.3) SM012 Griffin All-Up-Rounds (AUR) - Alpha Variant		2019 (8)	Raytheon Missile System / Tucson, AZ	SS / IDIQ	Tampa	Jun 2019	Jun 2020	61	95,734.00	Y		Dec 2016

Footnotes:

(6) US SOCOM awarded a sole source 5 years IDIQ in August, 2017 to cover purchases in FY 2017 through contract period of performance.

(7) Beginning with FY 2016 contracts, Raytheon is no longer procuring Long Lead Items ahead of award - this changes extends delivery from 12 months to 15 months after award.

(8) FY19 Contract award changed from Jan 2019 to June 2019 as a result of a change in the Acquisition strategy for the Block III Griffin procurement.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2280 / Aerial Targets

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	3,927.996	133.937	150.561	174.336	0.000	174.336	170.948	177.239	178.608	180.466	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	3,927.996	133.937	150.561	174.336	0.000	174.336	170.948	177.239	178.608	180.466	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**3,927.996**	**133.937**	**150.561**	**174.336**	**0.000**	**174.336**	**170.948**	**177.239**	**178.608**	**180.466**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	1.551	2.518	2.407	-	2.407	2.175	2.853	4.137	4.220	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Aerial Targets program provides threat representative aerial targets for test and evaluation (T&E) and fleet training events. Assets procured under this line item are used to simulate and replicate currently fielded subsonic and supersonic Anti-Ship Cruise Missile (ASCM) threats. The threat representative targets are used to test and evaluate Navy ship self-defense systems currently in development, and are required for the successful completion of independent operational test and evaluation prior to fielding the systems to the fleet. Some variants are also used as fleet training assets to support fleet readiness. All assets procured by the Aerial Targets program are critical elements in improving the warfighters ability to counter threats and improve threat readiness capability. This program is composed of four primary components: (1) Subsonic Aerial targets, (2) Supersonic Targets, (3) Full Scale Aerial Target (FSAT), and (4) Auxiliary/Augmenting Systems.

(1) Subsonic Aerial Targets
The subsonic aerial targets portfolio is composed of production and sustainment programs that consist of the BQM-177A, BQM-34, BQM-74E and other various aerial target programs. The BQM-177A SSAT provides dynamic, high subsonic, sea-skimming, Anti -Ship Cruise Missile threat emulation for fleet training and for the testing of USN ship self-defensive weapon systems and other surface-to-air systems. The BQM-177A is the replacement subsonic target for the BQM-74, which is scheduled for sundown in FY 2021. Funding is used for the procurement of the BQM-177A and to procure associated hardware and mission kits, avionics upgrade kits, modifications, Engineering Change Proposals (ECPs) and software upgrades as required. The BQM-34 is a jet powered, high subsonic speed aerial target that provides a multitude of payloads for threat emulation. Funding efforts for the BQM-34 are for modifications to allow for continued utilization of current inventories as required to mitigate critical subsonic inventory shortfalls of the BQM-74 and to support Fleet Live-Fire training until the BQM-177A is fully fielded. These SSAT assets are recoverable and reused dependent on the objectives of each event. Funding may also be used to procure other subsonic targets in support of unique and emerging threat simulations.

(2) Supersonic Targets
The Supersonic targets program consists of the GQM-163A Supersonic Sea Skimming Target (SSST). The SSST is a non-recoverable target capable of speeds in excess of Mach 2.5 and cruise altitudes from 15 to 66ft. Additionally, SSST has successfully demonstrated a high dive threat profile capability. SSST replicates a family of supersonic sea-skimming targets and Anti-Ship Cruise Missile (ASCM) threats to meet critical T&E requirements of USN ship self-defense systems along with providing fleet training Live Fire with a Purpose (LFWAP) events. Funding is also used for Engineering Change Proposals, production modifications and software upgrades to help the supersonic Targets keep pace with emerging threats.

(3) Full Scale Aerial Target (FSAT)

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	
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		

The QF-16 FSAT is an Air Force led program providing 4th Generation full-scale threat representative targets. The QF-16 FSAT is a converted F-16 aircraft that provides programs with a supersonic, high altitude and remote controlled aerial target. This target has full command and control capability through normal flight envelopes. The QF-16 target presentations support aircraft and weapons system program testing and development to include the Joint Strike Fighter, AIM-9X Sidewinder Missile, AIM-120 Advanced Medium Range Air-to-Air Missile (AMRAAM) and Standard Missile-6.

(4) Auxiliary/Augmenting System Targets
The Auxiliary/Augmenting Systems includes various procurements of target ground control systems required to safely operate all aerial targets and threat simulator(s) payloads that replicate electronic attack and active emitters found on current threat missiles. The Target Mission Support Systems program provides target control and scoring, location, and navigation of targets for Fleet training and weapons systems test and evaluation. The Target Threat Simulation Program systems, installed on subsonic or supersonic targets as required, replicate various threats dependent upon the objectives of the test and evaluation event(s). When the target is destroyed, these assets are consumed and require replacement. As requirements to establish readiness capability increase, it is critical to maintain sufficient inventory of the Auxiliary/Augmenting Systems & Target Threat Simulation devices. Avionics equipment, common to all aerial targets, are also procured under Aux/Aug System Targets.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2280 / Aerial Targets

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / Subsonic Aerial Targets	P-5a, P-21			- / 784.385	- / 45.531	- / 47.563	- / 63.459	- / 0.000	- / 63.459
P-5	3 / Supersonic Targets	P-5a, P-21			- / 687.713	- / 64.352	- / 67.602	- / 74.331	- / 0.000	- / 74.331
P-5	4 / Full Scale Aerial Target	P-5a			- / 0.000	- / 1.781	- / 15.492	- / 13.959	- / 0.000	- / 13.959
P-5	5 / Aux / Aug System Targets				- / 2,455.898	- / 22.273	- / 19.904	- / 22.587	- / 0.000	- / 22.587
P-40	**Total Gross/Weapon System Cost**				**- / 3,927.996**	**- / 133.937**	**- / 150.561**	**- / 174.336**	**- / 0.000**	**- / 174.336**

*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:

Subsonic Aerial Targets

FY 2021 funding supports the procurement of 55 BQM-177A Subsonic Aerial Targets (SSATs) as well as associated kits and equipment. Funds also support continued procurement/installation of avionics upgrade kits for modification to the BQM-34S targets, ECPs for the BQM-74E and other subsonic target hardware. Funds increase from FY 2020 to FY 2021 due to increase of production quantities in order to meet DDG 1000/ Advanced Missile Defense Radar Testing requirements and support Fleet Live fire with a purpose training events. All cost codes were affected and increased with the increased production quantity.

Supersonic Targets

FY 2021 funding supports the procurement, production, and modification of 16 GQM-163A Supersonic Sea Skimming Targets (SSST), focusing on target capability enhancement. FY 2021 funding also supports the Formidable Shield Exercise.

Full Scale Aerial Targets

FY 2021 funding is required for procurements, production, and modification of the QF-16 Full Scale Aerial Target (FSAT). Funds will support procurement of two QF-16 targets and associated support.

Auxiliary/Augmenting System Targets

FY 2021 funding is required for Auxiliary/Augmenting Systems to continue production of various target command and control systems, scoring equipment, location, identification, and navigation equipment required to safely operate all aerial targets. The targets require production of various threat simulator(s) payloads that provide affordable high fidelity simulation environments of foreign threat electronic attack and threat radar emissions. Target threat simulation requires various electronic countermeasures equipment and active emitter augmentation equipment.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 1 / Subsonic Aerial Targets
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	784.385	45.531	47.563	63.459	0.000	63.459
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	784.385	45.531	47.563	63.459	0.000	63.459
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**784.385**	**45.531**	**47.563**	**63.459**	**0.000**	**63.459**
(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 Thousands)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - Subsonic Target Hardware Cost																		
Recurring Cost																		
1.1.1) EM031 BQM-177A(†) (1)	754.049	61	45.997	747.469	34	25.414	762.418	38	28.972	767.665	55	42.222	-	-	0.000	767.665	55	42.222
1.1.2) EM441 Install/ Mission Kits (2)	-	-	23.121	-	-	3.762	-	-	5.815	-	-	6.420	-	-	0.000	-	-	6.420
1.1.3) EM442 BQM-177A Other HW / Modifications (3)	-	-	6.515	-	-	1.870	-	-	2.545	-	-	4.470	-	-	0.000	-	-	4.470
1.1.4) EM452 BQM 34/74 Target Modification	-	-	6.613	-	-	6.243	-	-	1.000	-	-	1.020	-	-	0.000	-	-	1.020
Subtotal: Recurring Cost	-	-	*82.246*	-	-	*37.289*	-	-	*38.332*	-	-	*54.132*	-	-	*0.000*	-	-	*54.132*
Subtotal: Flyaway - Subsonic Target Hardware Cost	**-**	**-**	***82.246***	**-**	**-**	***37.289***	**-**	**-**	***38.332***	**-**	**-**	***54.132***	**-**	**-**	***0.000***	**-**	**-**	***54.132***
Flyaway - Subsonic Targets Nonrecurring & Ancillary Equipment Cost																		
Non Recurring Cost																		
2.1.1) EM540 Technical Support	-	-	1.427	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*1.427*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - Subsonic Targets Nonrecurring & Ancillary Equipment Cost	**-**	**-**	***1.427***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 1 / Subsonic Aerial Targets
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - Subsonic Target Launch Hardware Cost																		
Recurring Cost																		
3.1.1) EM701 Subsonic Ground Equipment (4)	-	-	16.725	-	-	2.996	-	-	3.880	-	-	3.870	-	-	0.000	-	-	3.870
Subtotal: Recurring Cost	-	-	*16.725*	-	-	*2.996*	-	-	*3.880*	-	-	*3.870*	-	-	*0.000*	-	-	*3.870*
Subtotal: Flyaway - Subsonic Target Launch Hardware Cost	**-**	**-**	***16.725***	**-**	**-**	***2.996***	**-**	**-**	***3.880***	**-**	**-**	***3.870***	**-**	**-**	***0.000***	**-**	**-**	***3.870***
Flyaway - Subsonic Prior Year/Not In Production Cost																		
Non Recurring Cost																		
4.1.1) Prior Year/Not In Production Cost Subsonic	-	-	668.340	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*668.340*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - Subsonic Prior Year/Not In Production Cost	**-**	**-**	***668.340***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - Subsonic Production Support Cost																		
5.1) EM851 Subsonic Production Engineering Support	-	-	11.370	-	-	4.165	-	-	4.248	-	-	4.332	-	-	0.000	-	-	4.332
5.2) EM861 Subsonic Integrated Logistic Support	-	-	3.310	-	-	1.081	-	-	1.103	-	-	1.125	-	-	0.000	-	-	1.125
5.3) EM871 Publications, Training Materials and Equipment (5)	-	-	0.967	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - Subsonic Production Support Cost	**-**	**-**	***15.647***	**-**	**-**	***5.246***	**-**	**-**	***5.351***	**-**	**-**	***5.457***	**-**	**-**	***0.000***	**-**	**-**	***5.457***
Gross/Weapon System Cost	**-**	**-**	**784.385**	**-**	**-**	**45.531**	**-**	**-**	**47.563**	**-**	**-**	**63.459**	**-**	**-**	**0.000**	**-**	**-**	**63.459**

(†) indicates the presence of a P-5a

Footnotes:

(1) EM031 BQM-177A - FY 2019 was the last LRIP contract as the program will award the first Full Rate Production (FRP) contract in FY 2020. FRP 1 contract will award with a base plus two options. Unit cost savings associated with additional quantities will be realized as the production line matures. Production quantities increase beginning in FY 2021 in order to meet DDG 1000/ Advanced Missile Defense Radar Testing requirements and support Fleet Live fire with a purpose training events.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 1 / Subsonic Aerial Targets
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(2) EM441 Install/Mission Kits: BQM-177A Mission Kits are required to support fleet operations and are used to replicate various threats. Mission kit quantities vary depending on fleet test & evaluation training requirements and are not procured on a one for one basis with air vehicle quantities. The kit procurements are based on a projection of the user demand which is based on the mission profiles required for specific test objectives. Each type of kit is priced differently so the total costs of the kits is not a direct reflection on the quantity of kits being procured.

(3) EM442 BQM-177A Other Hardware and Modifications: Funding supports hardware procurements, modifications and other production improvements and Engineering Change Proposals (ECPs) to help subsonic targets keep pace with emerging threats. The total cost may vary from year to year as it depends on the Warfighter and Training demands and costs of the modifications and ECPs. Product improvements include decreasing turnaround time (TAT) which include redesigning wiring harnesses, engine run stands, and encased fuel motor pumps. Other improvements include redesigning radomes, increased maneuverability, and software changes.

(4) EM701 Subsonic ground equipment includes peculiar support equipment and flight presentation consumables. Subsonic ground equipment procured per fiscal year vary and are not procured on a one for one basis with air vehicle quantities; dependent upon site stand-up requirements, fielding, initial operational requirements etc.

(5) Publication, Training Materials and Equipment are being procured via the OEM Support Contract. All government Tech Pub updates, material or equipment support will be funded via the appropriate cost element and appropriation as required.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 1 / Subsonic Aerial Targets

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) EM031 BQM-177A(†)		2018 (6)	Kratos / Sacramento, CA / Kratos	SS / FFP	NAVAIR	Feb 2018	Jun 2019	30	711.350	Y		Nov 2017
1.1.1) EM031 BQM-177A(†)		2019 (7)	Kratos / Sacramento, CA / Kratos	SS / FFP	NAVAIR	May 2019	May 2020	34	747.469	Y		Aug 2018
1.1.1) EM031 BQM-177A(†)		2020 (8)	Kratos / Sacramento, CA / Kratos	SS / FFP	NAVAIR	May 2020	May 2021	38	762.418	Y		Oct 2019
1.1.1) EM031 BQM-177A(†)		2021 (9)	Kratos / Sacramento, CA / Kratos	SS / FFP	NAVAIR	Dec 2020	Dec 2021	55	767.665	Y		Oct 2019

(†) indicates the presence of a P-21

Footnotes:

(6) The FY 2017 & FY 2018 procurement contracts are pre-negotiated options on the current Engineering and Manufacturing Development (EMD) contract. The RFP Issue date refers to release of a Letter of Intent to exercise these options.

(7) The FY 2019 procurement contract will be LRIP 3.

(8) The FY 2020 procurement contract will be the first Full Rate Production (FRP) contract.

(9) The FY 2021 procurement contract will be the second FRP contract.

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 1 / Subsonic Aerial Targets

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) EM031 BQM-177A (1)																															
Prior Years Deliveries: 31																															
	1	2018	NAVY	30	0	30					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	22
	1	2019	NAVY	34	0	34																				A -	-	-	-	-	34
	1	2020	NAVY	38	0	38																									38
	1	2021	NAVY	55	0	55																									55
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 1 / Subsonic Aerial Targets

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) EM031 BQM-177A (1)																															
Prior Years Deliveries: 31																															
	1	2018	NAVY	30	8	22	2	2	3	3	3	3	3	3																	0
	1	2019	NAVY	34	0	34	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	1						0
	1	2020	NAVY	38	0	38								A -	-	-	-	-	-	-	-	-	-	-	-	4	3	3	4	3	21
	1	2021	NAVY	55	0	55															A -	-	-	-	-	-	-	-	-	-	55
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 1 / Subsonic Aerial Targets

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) EM031 BQM-177A (1)																															
Prior Years Deliveries: 31																															
	1	2018	NAVY	30	30	0																									0
	1	2019	NAVY	34	34	0																									0
	1	2020	NAVY	38	17	21	3	3	3	3	3	3	3																		0
	1	2021	NAVY	55	0	55	-	-	4	5	4	5	4	5	4	5	4	5	5	5											0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 1 / Subsonic Aerial Targets

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	Kratos / Sacramento, CA - Kratos	30	45	70	0	6	12	18	0	6	12	18

"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).

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 3 / Supersonic Targets
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	687.713	64.352	67.602	74.331	0.000	74.331
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	687.713	64.352	67.602	74.331	0.000	74.331
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**687.713**	**64.352**	**67.602**	**74.331**	**0.000**	**74.331**
(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 Thousands)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - Other Targets Hardware Cost																		
Recurring Cost																		
1.1.1) EM203 GQM-163A (SSST)(†)	2,891.333	126	364.308	3,045.286	14	42.634	3,106.190	14	43.487	3,090.659	16	49.451	-	-	0.000	3,090.659	16	49.451
1.1.2) EM204 GQM-163A Boosters (10)	-	-	3.929	-	-	4.373	-	-	4.460	-	-	5.184	-	-	0.000	-	-	5.184
Subtotal: Recurring Cost	-	-	*368.237*	-	-	*47.007*	-	-	*47.947*	-	-	*54.635*	-	-	*0.000*	-	-	*54.635*
Subtotal: Flyaway - Other Targets Hardware Cost	**-**	**-**	***368.237***	**-**	**-**	***47.007***	**-**	**-**	***47.947***	**-**	**-**	***54.635***	**-**	**-**	***0.000***	**-**	**-**	***54.635***
Flyaway - Hardware-Other Targets Cost																		
Non Recurring Cost																		
2.1.1) EM443 Hardware Procurements / Modifications (11)	-	-	3.049	-	-	4.607	-	-	6.780	-	-	11.328	-	-	0.000	-	-	11.328
2.1.2) EM442 Install/ Mission Kits (12)	-	-	23.494	-	-	2.432	-	-	2.580	-	-	2.970	-	-	0.000	-	-	2.970
Subtotal: Non Recurring Cost	-	-	*26.543*	-	-	*7.039*	-	-	*9.360*	-	-	*14.298*	-	-	*0.000*	-	-	*14.298*
Subtotal: Flyaway - Hardware-Other Targets Cost	**-**	**-**	***26.543***	**-**	**-**	***7.039***	**-**	**-**	***9.360***	**-**	**-**	***14.298***	**-**	**-**	***0.000***	**-**	**-**	***14.298***
Flyaway - Other Targets Launch Hardware Cost																		
Non Recurring Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 3 / Supersonic Targets
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
3.1.1) EM702 Ground Equipment (13)	-	-	6.168	-	-	1.236	-	-	1.917	-	-	2.807	-	-	0.000	-	-	2.807
Subtotal: Non Recurring Cost	-	-	*6.168*	-	-	*1.236*	-	-	*1.917*	-	-	*2.807*	-	-	*0.000*	-	-	*2.807*
Subtotal: Flyaway - Other Targets Launch Hardware Cost	**-**	**-**	***6.168***	**-**	**-**	***1.236***	**-**	**-**	***1.917***	**-**	**-**	***2.807***	**-**	**-**	***0.000***	**-**	**-**	***2.807***
Flyaway - GQM-163A Long Lead Item Cost																		
Recurring Cost																		
4.1.1) Long Lead Credit (14)	-	-	-4.760	-	-	-0.585	-	-	-0.663	-	-	0.000	-	-	0.000	-	-	0.000
4.1.2) Long Lead Components (15)	-	-	5.082	-	-	0.663	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*0.322*	-	-	*0.078*	-	-	*-0.663*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - GQM-163A Long Lead Item Cost	**-**	**-**	***0.322***	**-**	**-**	***0.078***	**-**	**-**	***-0.663***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Flyaway - Other Targets FY06 and PRIOR Cost																		
Non Recurring Cost																		
5.1.1) Non Recurring Cost	-	-	250.054	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*250.054*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - Other Targets FY06 and PRIOR Cost	**-**	**-**	***250.054***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support Cost																		
6.1) EM852 Production Engineering Support	-	-	36.389	-	-	2.492	-	-	2.541	-	-	2.591	-	-	0.000	-	-	2.591
6.2) EM853 NSWC WSMR ARAV Target Support (OCO Funds) (16)	-	-	0.000	-	-	6.500	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
6.3) EM854 Hebrides Site Activation (17)	-	-	0.000	-	-	0.000	-	-	6.500	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support Cost	**-**	**-**	***36.389***	**-**	**-**	***8.992***	**-**	**-**	***9.041***	**-**	**-**	***2.591***	**-**	**-**	***0.000***	**-**	**-**	***2.591***
Gross/Weapon System Cost	**-**	**-**	**687.713**	**-**	**-**	**64.352**	**-**	**-**	**67.602**	**-**	**-**	**74.331**	**-**	**-**	**0.000**	**-**	**-**	**74.331**

Remarks:

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 3 / Supersonic Targets
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Supersonic Targets Set was previously identified as "other Targets". Name has been updated to more accurately reflect the target portfolio that this P-5 Set represents.

(†) indicates the presence of a P-5a

Footnotes:

(10) EM204 GQM-163A Boosters were broken out separately as they are not produced by the OEM and are contracted via different activities.

(11) EM443 Hardware Procurements / Modifications support engineering change proposals and other modifications necessary to ensure supersonic targets keep pace with emerging threats. The cost and type of hardware modifications vary from each FY depending upon current threats, and fleet test and training requirements. The focus throughout the FYDP for the Supersonic targets is Target Capability Enhancement. Current modification efforts to the current GQM-163A target include but are not limited to changes to the outer mold lines in order to carry multiple payloads are needed to meet DDG FLT-III T&E requirements.

(12) EM442 Install/Mission Kits: Mission kit quantities vary depending on fleet test & evaluation training requirements and are not procured on a one for one basis with air vehicle quantities. The kit procurements are based on a projection of the user demand which is based on the mission profiles required for specific test objectives. Each type of kit is priced differently so the total costs of the kits is not a direct reflection on the quantity of kits being procured. The varying demand and cost of the mission kits accounts for the increases and decreases of this cost element from year to year.

(13) EM702 Ground Equipment includes peculiar support equipment and flight presentation consumables. Costs increase commencing in FY 2020 and FY 2021 with GMQ-163A quantity increase.

(14) Long Lead Credit was for Steel procurements that will now be procured annually with the FRP production lots, commencing in FY 2020.

(15) Long lead component funds are required for the procurement of D6AC steel for production of GQM-163A ducted rocket housings. The FY 2019 long lead procurement is for the FY 2020 target buy. Commencing in FY20, Steel procurements will now be procured annually with the FRP production lots.

(16) Cost Code EM853 were FY 2019 OCO funds sent to the Aerial Targets Line Item to be executed in support of 6th Fleet Formidable shield exercise for procurement of one Aegis Readiness Assessment Vehicle (ARAV) target, not a GQM-163A target.

(17) Cost Code EM854 will fund GQM-163A target launch site for Fleet training in Hebrides, Scotland in support of Formidable Shield Exercise

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 3 / Supersonic Targets

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) EM203 GQM-163A (SSST)(†)		2016 (18)	NORTHROP GRUMMAN INNOVATION SYSTEMS (19) / CHANDLER AZ	SS / FFP	NAVAIR	Jul 2016	Mar 2019	5	4,410.000	Y		Feb 2016
1.1.1) EM203 GQM-163A (SSST)(†)		2017 (20)	NORTHROP GRUMMAN INNOVATION SYSTEMS (19) / CHANDLER AZ	SS / FFP	NAVAIR	Mar 2018	Jul 2020	24	2,645.333	Y		Dec 2016
1.1.1) EM203 GQM-163A (SSST)(†)		2018 (21)	NORTHROP GRUMMAN INNOVATION SYSTEMS (19) / CHANDLER AZ	SS / FFP	NAVAIR	Jul 2018	Jul 2021	17	2,897.299	Y		Dec 2016
1.1.1) EM203 GQM-163A (SSST)(†)		2019 (22)	NORTHROP GRUMMAN INNOVATION SYSTEMS (19) / CHANDLER AZ	SS / FFP	NAVAIR	Dec 2018	Apr 2022	14	3,045.286	Y		Dec 2016
1.1.1) EM203 GQM-163A (SSST)(†)		2020 (23)	NORTHROP GRUMMAN INNOVATION SYSTEMS (19) / CHANDLER AZ	SS / FFP	NAVAIR	May 2020	Jan 2023	14	3,106.190	Y		Aug 2019
1.1.1) EM203 GQM-163A (SSST)(†)		2021 (24)	NORTHROP GRUMMAN INNOVATION SYSTEMS (19) / CHANDLER AZ	SS / FFP	NAVAIR	Dec 2020	Nov 2023	16	3,090.659	Y		Aug 2019

(†) indicates the presence of a P-21

Footnotes:

(18) FRP 10

(19) The maximum production rate is currently limited to 24 units due to the availability of Government Furnished Property (GFP) and OEM limitations. The program is exploring GFP alternatives in order to increase the maximum procurement rate to 32 units per year.

(20) FRP 11 includes a base plus pre-negotiated options for the following two production lots (FRP12 and FRP13).

(21) FRP 12 was a pre-negotiated option that is negotiated in conjunction with the FRP11 contract.

(22) FRP 13 was a pre-negotiated option that is negotiated in conjunction with the FRP11 contract.

(23) FRP 14 (new contract; base plus options).

(24) FRP 15 pre-negotiated option in conjunction with the FRP 14 contract.

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 3 / Supersonic Targets

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
							Calendar Year 2016												Calendar Year 2017												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) EM203 GQM-163A (SSST)																															
Prior Years Deliveries: 80																															
	1	2016	NAVY	5	0	5										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	1	2016	FMS (‡)	6	0	6										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
	1	**2016**	**Total**	**11**	**0**	**11**										**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**11**
	1	2017	NAVY	24	0	24																									24
	1	2018	NAVY	17	0	17																									17
	1	2018	FMS (‡)	6	0	6																									6
	1	**2018**	**Total**	**23**	**0**	**23**																									**23**
	1	2019	NAVY	14	0	14																									14
	1	2019	FMS (‡)	1	0	1																									1
	1	**2019**	**Total**	**15**	**0**	**15**																									**15**
	1	2020	NAVY	14	0	14																									14
	1	2021	NAVY	16	0	16																									16
	1	2021	FMS (‡)	2	0	2																									2
	1	**2021**	**Total**	**18**	**0**	**18**																									**18**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 3 / Supersonic Targets

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) EM203 GQM-163A (SSST)																															
Prior Years Deliveries: 80																															
	1	2016	NAVY	5	0	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	-	-	2
	1	2016	FMS (‡)	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	1	1	1
	1	**2016**	**Total**	**11**	**0**	**11**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**4**	**-**	**1**	**-**	**1**	**1**	**1**	**3**
	1	2017	NAVY	24	0	24						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
	1	2018	NAVY	17	0	17										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
	1	2018	FMS (‡)	6	0	6										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
	1	**2018**	**Total**	**23**	**0**	**23**										**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**23**
	1	2019	NAVY	14	0	14															A -	-	-	-	-	-	-	-	-	-	14
	1	2019	FMS (‡)	1	0	1															A -	-	-	-	-	-	-	-	-	-	1
	1	**2019**	**Total**	**15**	**0**	**15**															**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**15**
	1	2020	NAVY	14	0	14																									14
	1	2021	NAVY	16	0	16																									16
	1	2021	FMS (‡)	2	0	2																									2
	1	**2021**	**Total**	**18**	**0**	**18**																									**18**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 3 / Supersonic Targets

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) EM203 GQM-163A (SSST)																															
Prior Years Deliveries: 80																															
	1	2016	NAVY	5	3	2	-	-	-	1	1																				0
	1	2016	FMS (‡)	6	5	1	1	-	-	-	-																				0
	1	**2016**	**Total**	**11**	**8**	**3**	**1**	**-**	**-**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2017	NAVY	24	0	24	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2				0
	1	2018	NAVY	17	0	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	11
	1	2018	FMS (‡)	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	3
	1	**2018**	**Total**	**23**	**0**	**23**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**5**	**2**	**2**	**14**
	1	2019	NAVY	14	0	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
	1	2019	FMS (‡)	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	1	**2019**	**Total**	**15**	**0**	**15**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**15**
	1	2020	NAVY	14	0	14								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
	1	2021	NAVY	16	0	16															A -	-	-	-	-	-	-	-	-	-	16
	1	2021	FMS (‡)	2	0	2															A -	-	-	-	-	-	-	-	-	-	2
	1	**2021**	**Total**	**18**	**0**	**18**															**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**18**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 3 / Supersonic Targets

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) EM203 GQM-163A (SSST)																															
Prior Years Deliveries: 80																															
	1	2016	NAVY	5	5	0																									0
	1	2016	FMS (‡)	6	6	0																									0
	1	**2016**	**Total**	**11**	**11**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2017	NAVY	24	24	0																									0
	1	2018	NAVY	17	6	11	2	2	2	2	1	1	1																		0
	1	2018	FMS (‡)	6	3	3	-	-	-	-	1	1	1																		0
	1	**2018**	**Total**	**23**	**9**	**14**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2019	NAVY	14	0	14	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	2	2							0
	1	2019	FMS (‡)	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-							0
	1	**2019**	**Total**	**15**	**0**	**15**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**1**	**1**	**1**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2020	NAVY	14	0	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	5
	1	2021	NAVY	16	0	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
	1	2021	FMS (‡)	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	1	**2021**	**Total**	**18**	**0**	**18**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**18**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 3 / Supersonic Targets

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
							Calendar Year 2024												Calendar Year 2025												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) EM203 GQM-163A (SSST)																															
Prior Years Deliveries: 80																															
	1	2016	NAVY	5	5	0																									0
	1	2016	FMS (‡)	6	6	0																									0
	1	**2016**	**Total**	**11**	**11**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2017	NAVY	24	24	0																									0
	1	2018	NAVY	17	17	0																									0
	1	2018	FMS (‡)	6	6	0																									0
	1	**2018**	**Total**	**23**	**23**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2019	NAVY	14	14	0																									0
	1	2019	FMS (‡)	1	1	0																									0
	1	**2019**	**Total**	**15**	**15**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2020	NAVY	14	9	5	1	2	2																						0
	1	2021	NAVY	16	0	16	-	1	1	1	1	1	1	1	1	2	2	2	2												0
	1	2021	FMS (‡)	2	0	2	-	1	-	-	-	-	1	-	-	-	-	-	-												0
	1	**2021**	**Total**	**18**	**0**	**18**	-	**2**	**1**	**1**	**1**	**1**	**2**	**1**	**1**	**2**	**2**	**2**	**2**	-	-	-	-	-	-	-	-	-	-	-	**0**
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 3 / Supersonic Targets

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	NORTHROP GRUMMAN INNOVATION SYSTEMS (19) - CHANDLER AZ	6	21	24	10	3	24	27	0	3	35	38

(‡) 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:
(19) The maximum production rate is currently limited to 24 units due to the availability of Government Furnished Property (GFP) and OEM limitations. The program is exploring GFP alternatives in order to increase the maximum procurement rate to 32 units per year.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 4 / Full Scale Aerial Target
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	1.781	15.492	13.959	0.000	13.959
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	1.781	15.492	13.959	0.000	13.959
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**1.781**	**15.492**	**13.959**	**0.000**	**13.959**
(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 Thousands)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - Hardware Cost																		
Recurring Cost																		
1.1.1) EMA11 QF-16 FSAT Production(†) (25)	-	-	0.000	-	-	0.000	1,426.261	2	2.853	1,454.787	2	2.910	-	-	0.000	1,454.787	2	2.910
1.1.2) EMA12 QF-16 FSAT Hardware (26)	-	-	0.000	-	-	1.141	-	-	11.987	-	-	10.397	-	-	0.000	-	-	10.397
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*1.141*	-	-	*14.840*	-	-	*13.307*	-	-	*0.000*	-	-	*13.307*
Subtotal: Flyaway - Hardware Cost	**-**	**-**	***0.000***	**-**	**-**	***1.141***	**-**	**-**	***14.840***	**-**	**-**	***13.307***	**-**	**-**	***0.000***	**-**	**-**	***13.307***
Support - Production Support Cost																		
2.1) EM890 Production Management	-	-	0.000	-	-	0.150	-	-	0.153	-	-	0.156	-	-	0.000	-	-	0.156
2.2) EM855 Production Engineering	-	-	0.000	-	-	0.490	-	-	0.499	-	-	0.496	-	-	0.000	-	-	0.496
Subtotal: Support - Production Support Cost	**-**	**-**	***0.000***	**-**	**-**	***0.640***	**-**	**-**	***0.652***	**-**	**-**	***0.652***	**-**	**-**	***0.000***	**-**	**-**	***0.652***
Gross/Weapon System Cost	**-**	**-**	**0.000**	**-**	**-**	**1.781**	**-**	**-**	**15.492**	**-**	**-**	**13.959**	**-**	**-**	**0.000**	**-**	**-**	**13.959**

(†) indicates the presence of a P-5a

Footnotes:

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2280 / Aerial Targets	**Item Number / Title [DODIC]:** 4 / Full Scale Aerial Target
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(25) EMA11 QF-16 FSAT Production funds the Boeing F-16 contract at Eglin AFB and is not indicative of true unit costs of one QF-16 target. The quantities and price purchased via contract varies per year and is based on the procurement agreement between the United States(US) Navy and the US Air Force (USAF). The total cost of the QF-16 target includes EMA12 QF-16 Hardware/ regeneration efforts as well. No FY19 procurements due to USAF technical contract delays.

(26) EMA12 QF-16 Hardware funds the regeneration of drones and engines; including the parts and associated support. The regeneration costs can vary per year based on the amount of needed modernization, however, it is proportional to the number of units procured. This includes the costs of regeneration efforts at US Air Force AMARG and Edwards AFBs and is included in the total flyaway cost of the QF-16 targets. Hardware also includes the procurement of equipment for range operations at Pt Mugu. FY 2020 hardware costs increase slightly more than inflation due to increased projected Pt Mugu operations, costs of equipment needed, and other associated hardware.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 4 / Full Scale Aerial Target

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) EMA11 QF-16 FSAT Production		2020	BOEING INC [27] / ST LOUIS, MO	C / TBD	** NO PCO **	Oct 2019	Oct 2021	2	1,426.261	Y		

Footnotes:

[27] Production rates are based on joint procurements between the United States Air Force and the United States Navy.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 5 / Aux / Aug System Targets
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	2,455.898	22.273	19.904	22.587	0.000	22.587
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	2,455.898	22.273	19.904	22.587	0.000	22.587
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**2,455.898**	**22.273**	**19.904**	**22.587**	**0.000**	**22.587**
(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 Thousands)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - Aux/Aug Sys Targets Hardware Cost																		
Recurring Cost																		
1.1.1) EM304 ECM/ Emitter Equipment [28]	-	-	59.883	-	-	12.265	-	-	7.824	-	-	9.799	-	-	0.000	-	-	9.799
1.1.2) EM307 Target Common Avionics Equipment [29]	-	-	20.296	-	-	5.109	-	-	7.085	-	-	7.694	-	-	0.000	-	-	7.694
Subtotal: Recurring Cost	-	-	*80.179*	-	-	*17.374*	-	-	*14.909*	-	-	*17.493*	-	-	*0.000*	-	-	*17.493*
Non Recurring Cost																		
1.2.1) Prior Year No Longer Procured	-	-	334.305	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*334.305*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - Aux/Aug Sys Targets Hardware Cost	**-**	**-**	***414.484***	**-**	**-**	***17.374***	**-**	**-**	***14.909***	**-**	**-**	***17.493***	**-**	**-**	***0.000***	**-**	**-**	***17.493***
Flyaway - Aux/Aug Sys Targets FY06 and PRIOR Cost																		
Non Recurring Cost																		
2.1.1) Prior year costs no longer financed beyond 1995	-	-	1,992.884	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*1,992.884*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - Aux/ Aug Sys Targets FY06 and PRIOR Cost	**-**	**-**	***1,992.884***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2280 / Aerial Targets	Item Number / Title [DODIC]: 5 / Aux / Aug System Targets
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Support - Aux/Aug Sys Targets Support Cost																		
3.1) EM823 Training Equipment	-	-	2.123	-	-	0.197	-	-	0.200	-	-	0.204	-	-	0.000	-	-	0.204
3.2) EM853 Production Engineering Support	-	-	37.351	-	-	3.789	-	-	3.864	-	-	3.941	-	-	0.000	-	-	3.941
3.3) EM863 Integrated Logistics Support (ILS)	-	-	7.689	-	-	0.832	-	-	0.848	-	-	0.864	-	-	0.000	-	-	0.864
3.4) EM873 Documentation	-	-	1.367	-	-	0.081	-	-	0.083	-	-	0.085	-	-	0.000	-	-	0.085
Subtotal: Support - Aux/Aug Sys Targets Support Cost	***-***	***-***	***48.530***	***-***	***-***	***4.899***	***-***	***-***	***4.995***	***-***	***-***	***5.094***	***-***	***-***	***0.000***	***-***	***-***	***5.094***
Gross/Weapon System Cost	**-**	**-**	**2,455.898**	**-**	**-**	**22.273**	**-**	**-**	**19.904**	**-**	**-**	**22.587**	**-**	**-**	**0.000**	**-**	**-**	**22.587**

Footnotes:

(28) EM304 ECM/Emitter Equipment increases throughout the FYDP to support Operational requirements of Target Threat Simulation Payloads to ensure Fleet readiness in keeping pace with emerging threats. FY 2020 to 2021 increases to focus on procurements of aerial targets payloads and threat emitters to enable the War fighter to keep pace with emerging threats and meet Fleet operational requirements to support Fleet training events.

(29) EM307 Target Common Avionics Equipment increased from FY 2019 to FY 2020 and FY 2021 to FY 2022 to support procurements of Aerial Target Mission Support System to deliver high interest Fleet training.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2285 / Drones and Decoys

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0204162N	Other Related Program Elements: 0604659N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	68	-	68	150	250	250	141	-	859
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	41.256	0.000	41.256	84.129	133.686	136.356	79.082	-	474.509
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	41.256	0.000	41.256	84.129	133.686	136.356	79.082	-	474.509
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**41.256**	**0.000**	**41.256**	**84.129**	**133.686**	**136.356**	**79.082**	**-**	**474.509**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	606,705.88	-	606,705.88	560,860.00	534,744.00	545,424.00	560,865.25	-	552,396.97

Description:

The Drones and Decoys Line Item (LI) supports the air-launched electronic warfare (EW) systems capability; through the integration of a Navy variant of the Miniature Air Launched Decoy (MALD). EW is an integral war-fighting effect supporting combatant commander integrated priorities, as well as Joint or Coalition operations. EW systems influence, deceive, disrupt, degrade, deny and destroy threats throughout the electromagnetic spectrum to airborne and air-launched systems and their operations. EW includes air-launched electronic attack (EA) as well as elements of electronic support (ES) and electronic protection (EP). EA provides self-protection capabilities to other weapon systems through active and passive measures that deceive threats to airborne and air-launched systems and their operations by using kinetic and non-kinetic means to defeat threats that rely on the electromagnetic spectrum (Radio Frequency (RF), Electro-Optical (EO), Infrared (IR). The ES capabilities support the collection, analysis, and dissemination of information related to the detection, geo-location, characterization, and identification of threats to airborne and air-launched systems and their operations. An air-launched EW system with stand-in capability increases the range and duration of EW systems while providing flexibility to commanders for employment.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2285 / Drones and Decoys	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** 0204162N	**Other Related Program Elements:** 0604659N
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Drones and Decoys	P-5a, P-21			- / 0.000	- / 0.000	- / 0.000	68 / 41.256	- / 0.000	68 / 41.256
P-40	**Total Gross/Weapon System Cost**				**- / 0.000**	**- / 0.000**	**- / 0.000**	**68 / 41.256**	**- / 0.000**	**68 / 41.256**

*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 BLI supports the Navy variant of the Miniature Air Launched Decoy (MALD). FY 2021 funding is for the procurement of 68 MALD-N's, containers, cables and associated support. The FY 2021 assets will provide an Initial Operational Capability (IOC) delivery in FY 2022.

MALD is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. The development and acquisition of MALD has been structured to be fielded at a pace relevant to maintain overmatch against long-term strategic competition. Specifically MALD directly contributes to building a more lethal force and is a critical enabler for joint lethality in contested environments; deterring adversaries from aggression and evolves innovative operational concepts.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2285 / Drones and Decoys	Item Number / Title [DODIC]: 1 / Drones and Decoys
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	68	-	68
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	41.256	0.000	41.256
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	41.256	0.000	41.256
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**41.256**	**0.000**	**41.256**
(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 Dollars)*	-	-	-	606,705.88	-	606,705.88

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) MALD Minature Air Launched Decoy(†) (1)	-	-	-	-	-	-	-	-	-	591,338.00	68	40.211	-	-	-	591,338.00	68	40.211
1.1.2) Containers(†) (2)	-	-	-	-	-	-	-	-	-	10,072.00	68	0.685	-	-	-	10,072.00	68	0.685
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	*40.896*	-	-	-	-	-	*40.896*
Subtotal: Hardware Cost	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***40.896***	**-**	**-**	**-**	**-**	**-**	***40.896***
Support Cost																		
2.1) GIH Production Support	-	-	-	-	-	-	-	-	-	-	-	0.360	-	-	-	-	-	0.360
Subtotal: Support Cost	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***0.360***	**-**	**-**	**-**	**-**	**-**	***0.360***
Gross/Weapon System Cost	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**606,705.88**	**68**	**41.256**	**-**	**-**	**0.000**	**606,705.88**	**68**	**41.256**

(†) indicates the presence of a P-5a

Footnotes:

(1) Unit Cost based on NAVAIR 4.2 Cost Estimate.

(2) Ratio of containers to MALD is 1:1

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2285 / Drones and Decoys	**Item Number / Title [DODIC]:** 1 / Drones and Decoys

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) MALD Minature Air Launched Decoy(†)		2021	Raytheon CO / Tucson AZ	SS / FPIF	NAVAIR	Nov 2020	Jun 2022	68	591,338.00	N	Jan 2020	Feb 2019
1.1.2) Containers		2021 (3)	TBD / TBD	TBD	NSWC,IHD	Jan 2021	Jan 2022	68	10,072.00	N	Jan 2020	Feb 2020

(†) indicates the presence of a P-21

Footnotes:

(3) Containers to be competed - Will be awarded to Lowest Price Technically Acceptable (LPTA) via competitively awarded IDIQs

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2285 / Drones and Decoys	**Item Number / Title [DODIC]:** 1 / Drones and Decoys

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MALD Minature Air Launched Decoy (1)																															
	1	2021	NAVY	68 (4)	0	68		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	20	20	8	0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2285 / Drones and Decoys	**Item Number / Title [DODIC]:** 1 / Drones and Decoys

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 CO - Tucson AZ	50	480	480	0	2	19	21	0	2	19	21

"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:
(4) Contractor previously agreed to deliveries to meeting IOC with no impact to suppliers.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2290 / Other Missile Support

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	57.252	3.318	3.388	3.501	0.000	3.501	3.525	3.594	3.662	3.732	-	81.972
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	57.252	3.318	3.388	3.501	0.000	3.501	3.525	3.594	3.662	3.732	-	81.972
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**57.252**	**3.318**	**3.388**	**3.501**	**0.000**	**3.501**	**3.525**	**3.594**	**3.662**	**3.732**	**-**	**81.972**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.407	0.475	-	-	-	-	-	-	-	-	0.882
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The MK-41 Vertical Launching System (VLS) is a surface combatant missile launching system designed to store, select, and launch various Standard Missile configurations, Tomahawk, Tactical Tomahawk, Evolved Seasparrow (ESSM) and Vertical Launch Anti-Submarine Rocket (ASROC) (VLA) missiles. The MK-41 VLS significantly improves missile capacity, flexibility, multi-mission capability, reaction time, rate of fire, and is designed to be adaptable to present and future weapon systems. Current configurations are: two 61 cell launchers (forward and aft) for 22 TICONDEROGA (CG 47) Class Cruisers beginning with CG-52, one 61 cell aft and one 29 cell launcher forward for 28 ARLEIGH BURKE (DDG 51) Class Destroyers, one 64 cell launcher aft and one 32 cell launcher forward for 34 DDG 51 FLT IIA ships.

[P5 / CANISTER EQUIPMENT]: Funds procurement and installation of canister and gas management hardware Engineering Change Proposals (ECPs) and Ordnance Alterations (ORDALTs).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2290 / Other Missile Support

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Other Missile Support				- / 57.252	- / 3.318	- / 3.388	- / 3.501	- / 0.000	- / 3.501
P-40	**Total Gross/Weapon System Cost**				**- / 57.252**	**- / 3.318**	**- / 3.388**	**- / 3.501**	**- / 0.000**	**- / 3.501**

*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:
FY21 funds are required for production support and Integrated Logistics Support (ILS) including: supply support, provisioning and technical documentation in support of weapon stations, All Up Round (AUR) facilities, and the fleet. Funds also provide for development and procurement of critical Engineering Change Proposals (ECP) and Ordnance Alterations (ORDALT) that improve reliability and implement safety upgrades for MK-41 VLS canisters and gas management hardware. Availability of upgraded canisters, canister hardware, and gas management hardware directly impacts fleet loadouts, operational availability, and safety.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2290 / Other Missile Support	**Item Number / Title [DODIC]:** 1 / Other Missile Support
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	57.252	3.318	3.388	3.501	0.000	3.501
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	57.252	3.318	3.388	3.501	0.000	3.501
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**57.252**	**3.318**	**3.388**	**3.501**	**0.000**	**3.501**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	0.407	0.475	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) CANISTER EQUIPMENT [1]	-	-	47.900	-	-	1.304	-	-	1.368	-	-	1.404	-	-	-	-	-	1.404
Subtotal: Recurring Cost	-	-	*47.900*	-	-	*1.304*	-	-	*1.368*	-	-	*1.404*	-	-	-	-	-	*1.404*
Subtotal: Flyaway Cost	**-**	**-**	***47.900***	**-**	**-**	***1.304***	**-**	**-**	***1.368***	**-**	**-**	***1.404***	**-**	**-**	**-**	**-**	**-**	***1.404***
Support Cost																		
2.1) ILS SUPPORT	-	-	9.352	-	-	2.014	-	-	2.020	-	-	2.097	-	-	-	-	-	2.097
Subtotal: Support Cost	**-**	**-**	***9.352***	**-**	**-**	***2.014***	**-**	**-**	***2.020***	**-**	**-**	***2.097***	**-**	**-**	**-**	**-**	**-**	***2.097***
Gross/Weapon System Cost	**-**	**-**	**57.252**	**-**	**-**	**3.318**	**-**	**-**	**3.388**	**-**	**-**	**3.501**	**-**	**-**	**0.000**	**-**	**-**	**3.501**

Footnotes:

[1] Funds increased from FY 2020 to FY 2021 to support NSWC DD, PHD & IHD with the procurement, logistics, and management issues for the MK10 explosive bolts related to canister issues. NSWC DD: Naval Surface Warfare Center-Dahlgren Division; NSWC PHD: Naval Surface Warfare Center-Port Hueneme Division; NSWC IHD: Naval Surface Warfare Center-Indian Head Division

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2291 / LRASM

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0204167N	Other Related Program Elements: 0604786N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	49	33	17	48	-	48	48	48	48	18	-	309
Gross/Weapon System Cost *($ in Millions)*	179.176	119.790	72.544	168.845	0.000	168.845	164.846	164.669	160.646	60.512	-	1,091.028
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	179.176	119.790	72.544	168.845	0.000	168.845	164.846	164.669	160.646	60.512	-	1,091.028
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**179.176**	**119.790**	**72.544**	**168.845**	**0.000**	**168.845**	**164.846**	**164.669**	**160.646**	**60.512**	**-**	**1,091.028**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	3,657K	3,630K	4,267K	3,518K	-	3,518K	3,434K	3,431K	3,347K	3,362K	-	3,531K

Description:

Long Range Anti-Ship Missile (LRASM) is Increment 1 of the Offensive Anti-Surface Warfare (OASuW) weapon development program. LRASM is a key air launched component of the Navy's overall Cruise Missile Strategy. The Department has transitioned 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 an Early Operational Capability (EOC) for U.S. Air Force B-1 and U.S. Navy F/A-18E/F. In response to U.S. Pacific Command Urgent Operation Need (UON) statement, LRASM is intended to provide the first increment of the next generation ASuW capabilities addressing the most urgent air-launched requirement, significantly reducing joint force warfighting risks, and positioning the Department to address evolving surface warfare threats. LRASM is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. The development and acquisition of LRASM has been structured to be fielded at a pace relevant to maintain overmatch against long-term strategic competition. Specifically, LRASM directly contributes to building a more lethal force and is a critical enabler for joint lethality in contested environments; deterring adversaries from aggression; ensuring common domains remain open and maintaining favorable regional balances of power. LRASM shares a production line with the USAF JASSM. The Navy and Air Force jointly procure LRASMs via an Air Force contract that benefits from cost savings when aligned with Air Force JASSM procurements.

The U.S. Air Force procurement for LRASMs in FY 2017 through FY 2021 at the following quantities:
FY 2017 - 19 (Lot 1)
FY 2018 - 16 (1 unit was priced at and part of FY 2017 Lot 1 to achieve 20 total Air Force units in Lot 1; 15 units are with FY 2018 Lot 2 procurement)
FY 2019 - 15 (Lot 3)
FY 2021 - 5 (Lot 5)

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2291 / LRASM	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** 0204167N	**Other Related Program Elements:** 0604786N
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / LRASM	P-5a, P-21			49 / 179.176	33 / 119.790	17 / 72.544	48 / 168.845	- / 0.000	48 / 168.845
P-40	**Total Gross/Weapon System Cost**				**49 / 179.176**	**33 / 119.790**	**17 / 72.544**	**48 / 168.845**	**- / 0.000**	**48 / 168.845**

*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 2021 funding procures a total of 48 Long Range Anti-Ship Missiles (LRASM).
LRASM development/fielding is funded to focus on meeting the time-critical requirements, while accepting manageable levels of technical risk, and is utilizing the DoD Instruction 5000.02 Model 4 Accelerated Acquisition process to achieve speed to the fleet. The program's funding profile was developed to enable fielding at the time required by the warfighter.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2291 / LRASM	Item Number / Title [DODIC]: 1 / LRASM
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	49	33	17	48	-	48
Gross/Weapon System Cost *($ in Millions)*	179.176	119.790	72.544	168.845	0.000	168.845
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	179.176	119.790	72.544	168.845	0.000	168.845
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**179.176**	**119.790**	**72.544**	**168.845**	**0.000**	**168.845**
(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 Dollars)*	3,657K	3,630K	4,267K	3,518K	-	3,518K

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - LRASM Cost																		
Recurring Cost																		
1.1.1) All Up Round (AUR)(†) (1)	3,626K	48	174.050	3,590K	33	118.455	3,478K	17	59.118	3,478K	48	166.920	-	-	-	3,478K	48	166.920
1.1.2) All Up Round (AUR) Lot 2 35th Missile(†) (2)	3,602K	1	3.602	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.3) Containers (3)	-	-	0.718	-	-	0.495	-	-	0.255	-	-	0.720	-	-	-	-	-	0.720
1.1.4) Contractor ECO	-	-	-	-	-	-	-	-	2.155	-	-	0.272	-	-	-	-	-	0.272
Subtotal: Recurring Cost	-	-	*178.370*	-	-	*118.950*	-	-	*61.528*	-	-	*167.912*	-	-	-	-	-	*167.912*
Subtotal: Hardware - LRASM Cost	**-**	**-**	***178.370***	**-**	**-**	***118.950***	**-**	**-**	***61.528***	**-**	**-**	***167.912***	**-**	**-**	**-**	**-**	**-**	***167.912***
Hardware - Nonrecurring and Ancillary Equip Cost																		
Non Recurring Cost																		
2.1.1) Tooling	-	-	0.268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.2) Telemetry Kits (4)	-	-	-	-	-	-	-	-	10.100	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*0.268*	-	-	-	-	-	*10.100*	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - Nonrecurring and Ancillary Equip Cost	**-**	**-**	***0.268***	**-**	**-**	**-**	**-**	**-**	***10.100***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2291 / LRASM	Item Number / Title [DODIC]: 1 / LRASM
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
3.1) Production Support (5)	-	-	0.538	-	-	0.840	-	-	0.916	-	-	0.933	-	-	-	-	-	0.933
Subtotal: Support Cost	***-***	***-***	***0.538***	***-***	***-***	***0.840***	***-***	***-***	***0.916***	***-***	***-***	***0.933***	***-***	***-***	***-***	***-***	***-***	***0.933***
Gross/Weapon System Cost	**3,657K**	**49**	**179.176**	**3,630K**	**33**	**119.790**	**4,267K**	**17**	**72.544**	**3,518K**	**48**	**168.845**	**-**	**-**	**0.000**	**3,518K**	**48**	**168.845**

(†) indicates the presence of a P-5a

Footnotes:

(1) Cost Code 1.1.1: Unit prices are inclusive of contingent liability. USN Lot 1 procured 14 units, all with FY 2017 dollars. USN Lot 2 procured 35 units, 1 unit with FY 2017 dollars and 34 units with FY 2018 dollars. FY 2020 is the first year of production for the LRASM v1.1 configuration. Unit prices in FY 2020 (Lot 4) and FY 2021 (Lot 5) are reflected the same due to a planned combined procurement award in Q1 FY 2021 to maximize economic order of quantity.

(2) Lot 2 has 35 total USN units, 1 procured with FY 2017 funding and 34 procured with FY 2018. Unit price is inclusive of contingent liability.

(3) Cost Code 2.1.1 (Containers) Ratio of containers to AURs is 1:1.

(4) Based on lead time for incorporation into AURs, FY 2020 procured Telemetry kits (iTiks) to support congressionally mandated post development operational test and evaluation.

(5) Cost Code 3.1 (Production Support) includes government and contractor production related support. Production support increases from FY 2020 to FY 2021 due to increased total units on order and deliveries occurring.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2291 / LRASM	Item Number / Title [DODIC]: 1 / LRASM

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) All Up Round (AUR)(†)		2017 (6)	Lockheed Martin Missiles and Fire Control (7) / Orlando, FL	SS / FPIF	Eglin AFB	Jul 2017	Sep 2018	14	3,747K	Y		Oct 2015
1.1.1) All Up Round (AUR)(†)		2018 (8)	Lockheed Martin Missiles and Fire Control (7) / Orlando, FL	SS / FPIF	Eglin AFB	Nov 2018	Sep 2020	34	3,576K	Y		Jun 2017
1.1.1) All Up Round (AUR)(†)		2019 (9)	Lockheed Martin Missiles and Fire Control (7) / Orlando, FL	SS / FPIF	Eglin AFB	Mar 2020	Sep 2021	33	3,590K	Y		Jan 2019
1.1.1) All Up Round (AUR)(†)		2020 (10)	Lockheed Martin Missiles and Fire Control (7) / Orlando, FL	SS / FPIF	Eglin AFB	Dec 2020	Oct 2022	17	3,478K	N	Jan 2019	Feb 2020
1.1.1) All Up Round (AUR)(†)		2021 (11)	Lockheed Martin Missiles and Fire Control (7) / Orlando, FL	SS / FPIF	Eglin AFB	Dec 2020	Oct 2022	48	3,478K	N	Jan 2020	Feb 2020
1.1.2) All Up Round (AUR) Lot 2 35th Missile(†)		2017 (12)	Lockheed Martin Missiles and Fire Control / Orlando, FL	SS / FPIF	Eglin AFB	Nov 2018	Sep 2020	1	3,602K	Y		Jun 2017

(†) indicates the presence of a P-21

Footnotes:

(6) Award date represents the initial U.S. Air Force and U.S. Navy procurements. The LRASM program received approval in February 2017 to proceed to production.

(7) FY 2017 Initial Procurement Lead Time represents time from award to delivery of first Air Force AUR to meet B-1B EOC (achieved Q12019); followed by delivery of Navy AURs to meet F/A-18 EOC (achieved Q12020).

(8) Award date represents actual for both U.S. Air Force and U.S. Navy procurements.

(9) Award date represents both U.S. Air Force and U.S. Navy procurements.

(10) Award date represents U.S. Navy procurement. FY 2020 (Lot 4) AUR will combine with FY 2021 (Lot 5) AUR award

(11) Award date represents U.S. Navy procurement. FY 2020 (Lot 4) AUR will combine with FY 2021 (Lot 5) AUR award

(12) 1 unit procured with FY 2017 dollars to total 35 Lot 2 USN units

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2291 / LRASM | **Item Number / Title [DODIC]:** 1 / LRASM

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
							Calendar Year 2017												Calendar Year 2018												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round (AUR) (1)																															
	1	2017	NAVY	14 (13)	0	14										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
	1	2017	AF (‡)	20	0	20										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	9	11
	1	**2017**	**Total**	**34**	**0**	**34**										**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**9**	**25**
	1	2018	NAVY	34 (14)	0	34																									34
	1	2018	AF (‡)	16	0	16																									16
	1	**2018**	**Total**	**50**	**0**	**50**																									**50**
	1	2019	NAVY	33	0	33																									33
	1	2019	AF (‡)	15	0	15																									15
	1	**2019**	**Total**	**48**	**0**	**48**																									**48**
	1	2020	NAVY	17	0	17																									17
	1	2021	NAVY	48	0	48																									48
1.1.2) All Up Round (AUR) Lot 2 35th Missile (2)																															
	2	2017	NAVY	1 (15)	0	1																									1
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2291 / LRASM | **Item Number / Title [DODIC]:** 1 / LRASM

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round (AUR) (1)																															
	1	2017	NAVY	14 (13)	0	14	-	-	-	-	-	-	1	-	1	-	5	1	2	-	-	-	2	2	-	-	-	-			0
	1	2017	AF (‡)	20	9	11	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	-	4			0
	1	**2017**	**Total**	**34**	**9**	**25**	**-**	**1**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**-**	**5**	**1**	**2**	**-**	**-**	**-**	**2**	**3**	**2**	**3**	**-**	**4**	**-**	**-**	**0**
	1	2018	NAVY	34 (14)	0	34		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	31
	1	2018	AF (‡)	16	0	16		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
	1	**2018**	**Total**	**50**	**0**	**50**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**47**
	1	2019	NAVY	33	0	33																		A -	-	-	-	-	-	-	33
	1	2019	AF (‡)	15	0	15																		A -	-	-	-	-	-	-	15
	1	**2019**	**Total**	**48**	**0**	**48**																		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**48**
	1	2020	NAVY	17	0	17																									17
	1	2021	NAVY	48	0	48																									48
1.1.2) All Up Round (AUR) Lot 2 35th Missile (2)																															
	2	2017	NAVY	1 (15)	0	1		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2291 / LRASM | **Item Number / Title [DODIC]:** 1 / LRASM

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round (AUR) (1)																															
	1	2017	NAVY	14 (13)	14	0																									0
	1	2017	AF (‡)	20	20	0																									0
	1	**2017**	**Total**	**34**	**34**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2018	NAVY	34 (14)	3	31	4	4	4	4	4	4	4	3	-	-	-														0
	1	2018	AF (‡)	16	0	16	-	-	-	-	-	-	-	1	5	5	5														0
	1	**2018**	**Total**	**50**	**3**	**47**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**5**	**5**	**5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**
	1	2019	NAVY	33	0	33	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	3	3	3	-	-	-		0
	1	2019	AF (‡)	15	0	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	5	5		0
	1	**2019**	**Total**	**48**	**0**	**48**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**4**	**4**	**4**	**4**	**4**	**4**	**3**	**3**	**4**	**4**	**5**	**5**	**-**	**0**
	1	2020	NAVY	17	0	17			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
	1	2021	NAVY	48	0	48			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48
1.1.2) All Up Round (AUR) Lot 2 35th Missile (2)																															
	2	2017	NAVY	1 (15)	1	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2 | **P-1 Line Item Number / Title:** 2291 / LRASM | **Item Number / Title [DODIC]:** 1 / LRASM

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
										Calendar Year 2023												Calendar Year 2024									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) All Up Round (AUR) (1)																															
	1	2017	NAVY	14 (13)	14	0																									0
	1	2017	AF (‡)	20	20	0																									0
	1	**2017**	**Total**	**34**	**34**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2018	NAVY	34 (14)	34	0																									0
	1	2018	AF (‡)	16	16	0																									0
	1	**2018**	**Total**	**50**	**50**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2019	NAVY	33	33	0																									0
	1	2019	AF (‡)	15	15	0																									0
	1	**2019**	**Total**	**48**	**48**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	1	2020	NAVY	17	0	17	1	1	1	1	1	1	1	2	2	2	2	2													0
	1	2021	NAVY	48	0	48	4	4	4	4	4	4	4	4	4	4	4	4													0
1.1.2) All Up Round (AUR) Lot 2 35th Missile (2)																															
	2	2017	NAVY	1 (15)	1	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2291 / LRASM	**Item Number / Title [DODIC]:** 1 / LRASM

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 Missiles and Fire Control (7) - Orlando, FL	12	72	72	0	10	14	24	0	3	22	25
2	Lockheed Martin Missiles and Fire Control - Orlando, FL	12	72	72	0	10	14	24	0	3	22	25

(±) 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:

(7) FY 2017 Initial Procurement Lead Time represents time from award to delivery of first Air Force AUR to meet B-1B EOC (achieved Q12019); followed by delivery of Navy AURs to meet F/A-18 EOC (achieved Q12020).

(13) Air Force Lot 1 procurement is 20 units - FY 2017 dollars procured 19 units, FY 2018 dollars procured 1 unit. Navy Lot 1 procurement is 14 units; Lot 2 procured 1 unit with FY17 dollars. Lot 1 procurement consisted of three separate awards, extending the funded delivery until February 2020. USAF units delivered first to achieve B-1 EOC.

(14) Air Force Lot 2 procurement is 15 units. Navy Lot 2 procurement is 35 units - 1 unit procured with FY 2017 dollars, 34 units procured with FY 2018 dollars.

(15) USN Lot 2 1st unit

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2292 / LCS OTH 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: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	8	18	15	-	15	34	44	48	48	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	0.000	19.698	38.137	32.910	0.000	32.910	60.120	74.299	80.770	79.777	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	19.698	38.137	32.910	0.000	32.910	60.120	74.299	80.770	79.777	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**19.698**	**38.137**	**32.910**	**0.000**	**32.910**	**60.120**	**74.299**	**80.770**	**79.777**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	2,462K	2,119K	2,194K	-	2,194K	1,768K	1,689K	1,683K	1,662K	Continuing	Continuing

Description:

The Over The Horizon (OTH) missile provides the Littoral Combat Ship/Frigate (LCS/FFG(X)) with long range anti-surface offensive capability against surface combatants.
The OTH Weapon Systems (WS) consists of a Missile Launch System and a complement of missiles.
- Missile Launch System components include: a Launch Mechanism, Operator Interface, and Fire Control System which are procured with Other Procurement, Navy Funds.
- Missile components include a missile encased in a firing canister (encanistered missile). An encanistered missile consists of a flight vehicle that is mechanically and electrically connected within a weapon canister. The flight vehicle's major components are operationally joined, consisting of a warhead (explosive), propulsion system, guidance system, initiation system, and other components. The weapon canister is a mechanical structure with electrical interconnections that is used to support and restrain the flight vehicle during loading and unloading operations. The weapon canister allows the flight vehicle to mechanically and electrically connect to the Missile Launch System without being exposed to the environment.

Other Related Budgets: OPN LI 5231, RDTEN PE 0604756N Proj 2070

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 2: Tactical Missiles	**P-1 Line Item Number / Title:** 2292 / LCS OTH 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: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / LCS OTH Missile	P-5a, P-21			- / 0.000	8 / 19.698	18 / 38.137	15 / 32.910	- / 0.000	15 / 32.910
P-40	**Total Gross/Weapon System Cost**				**- / 0.000**	**8 / 19.698**	**18 / 38.137**	**15 / 32.910**	**- / 0.000**	**15 / 32.910**

*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:
Over The Horizon Missile base funding is required to support Over The Horizon Weapon System program for the Littoral Combat Ships. The program provides a long range anti-surface offensive capability to improve the ship's ability to defend against enemy surface ships.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2292 / LCS OTH Missile	**Item Number / Title [DODIC]:** 1 / LCS OTH Missile
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	8	18	15	-	15
Gross/Weapon System Cost *($ in Millions)*	0.000	19.698	38.137	32.910	0.000	32.910
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	19.698	38.137	32.910	0.000	32.910
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**19.698**	**38.137**	**32.910**	**0.000**	**32.910**
(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 Dollars)*	-	2,462K	2,119K	2,194K	-	2,194K

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) LCS OTH Missile(†) (1)	-	-	-	2,462K	8	19.698	1,909K	18	34.369	1,854K	15	27.816	-	-	-	1,854K	15	27.816
Subtotal: Recurring Cost	-	-	-	-	-	*19.698*	-	-	*34.369*	-	-	*27.816*	-	-	-	-	-	*27.816*
Subtotal: Hardware Cost	**-**	**-**	**-**	**-**	**-**	***19.698***	**-**	**-**	***34.369***	**-**	**-**	***27.816***	**-**	**-**	**-**	**-**	**-**	***27.816***
Support Cost																		
2.1) Production Engineering Support - OEM (2)	-	-	-	-	-	-	-	-	2.150	-	-	2.866	-	-	-	-	-	2.866
2.2) Engineering Support Government and Contractor (3)	-	-	-	-	-	-	-	-	1.618	-	-	2.228	-	-	-	-	-	2.228
Subtotal: Support Cost	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***3.768***	**-**	**-**	***5.094***	**-**	**-**	**-**	**-**	**-**	***5.094***
Gross/Weapon System Cost	**-**	**-**	**0.000**	**2,462K**	**8**	**19.698**	**2,119K**	**18**	**38.137**	**2,194K**	**15**	**32.910**	**-**	**-**	**0.000**	**2,194K**	**15**	**32.910**

(†) indicates the presence of a P-5a

Footnotes:

(1) FY 2019 unit cost increase accounts for CNO-directed acceleration effort. FY2020-FY2025 unit costs based on step ladder pricing.

(2) Funding provides for ongoing Design Agent Services support to the US Navy in support of production line start up, missile test, missile qualification, issue resolution and in an advisory capacity. Production engineering increased from FY 2021 through FY 2025 due to missile assembly and test activities ramp up.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2292 / LCS OTH Missile	**Item Number / Title [DODIC]:** 1 / LCS OTH Missile
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(3) Provides program management support, engineering and technical government and contractor support, studies, analysis and evaluation on OTH missile system. Engineering support increase due to ramp up in production and LCS OTH Missile deliveries beginning in FY 2021.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	P-1 Line Item Number / Title: 2292 / LCS OTH Missile	Item Number / Title [DODIC]: 1 / LCS OTH Missile

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) LCS OTH Missile(†)		2019	Raytheon CO / Tucson AZ	C / FFP	NAVSEA	Dec 2018	Dec 2020	8	2,462K	Y		Feb 2017
1.1.1) LCS OTH Missile(†)		2020	Raytheon CO / Tucson AZ	C / FFP	NAVSEA	Feb 2020	Feb 2022	18	1,909K	Y		Feb 2017
1.1.1) LCS OTH Missile(†)		2021	Raytheon CO / Tucson AZ	C / FFP	NAVSEA	Dec 2020	Dec 2022	15	1,854K	Y		Feb 2017

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2

P-1 Line Item Number / Title: 2292 / LCS OTH Missile

Item Number / Title [DODIC]: 1 / LCS OTH Missile

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) LCS OTH Missile [1]																															
	1	2019	NAVY	8	0	8			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
	1	2020	NAVY	18	0	18																	A -	-	-	-	-	-	-	-	18
	1	2021	NAVY	15	0	15																									15
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2

P-1 Line Item Number / Title: 2292 / LCS OTH Missile

Item Number / Title [DODIC]: 1 / LCS OTH Missile

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021															Calendar Year 2022									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) LCS OTH Missile [1]																															
	1	2019	NAVY	8	0	8	-	-	2	-	-	2	-	-	2	-	-	2													0
	1	2020	NAVY	18	0	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	4	-	-	4	-	6
	1	2021	NAVY	15	0	15			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2292 / LCS OTH Missile	**Item Number / Title [DODIC]:** 1 / LCS OTH Missile

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
							Calendar Year 2023												Calendar Year 2024												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) LCS OTH Missile [1]																															
	1	2019	NAVY	8	8	0																									0
	1	2020	NAVY	18	12	6	-	6																							0
	1	2021	NAVY	15	0	15	-	-	9	-	-	6																			0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 2	**P-1 Line Item Number / Title:** 2292 / LCS OTH Missile	**Item Number / Title [DODIC]:** 1 / LCS OTH Missile

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 CO - Tucson AZ			TBD	0	0	24	24	0	0	24	24

"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 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	164.915	0.000	164.915	206.075	314.823	281.247	297.004	3,056.602	4,320.666
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	164.915	0.000	164.915	206.075	314.823	281.247	297.004	3,056.602	4,320.666
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**164.915**	**0.000**	**164.915**	**206.075**	**314.823**	**281.247**	**297.004**	**3,056.602**	**4,320.666**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Existing/Established Modification Program budget transition from BLI 2101 to BLI 2301 beginning in FY 2021. Reference prior BLI 2101 for FY 2020 and prior. Initial procurement of TACTOM, as well as modification funds executed in FY 2020 and prior, are budgeted under BLI 2101.

The Tactical Tomahawk (TACTOM) provides an attack capability against fixed and mobile/moving targets, and can be launched from both surface ships (RGM) and submarines (UGM). The TACTOM Modernization profile includes Recertification, Navigation Communication Modernization upgrades (NAVCOMMs), Maritime Strike Tomahawk (MST), Military Code (M-CODE) and Joint Multiple Effects Warhead System (JMEWS). Initial procurement of TACTOM, as well as modification funds executed in FY 2020 and prior, are budgeted under BLI 2101.

The TACTOM NAVCOMMs upgrades consist of the Integrated Single Box Solution (ISBS) radio, two new antennas and associated cabling, a new mid-body cover, and changes to the aft-body structure and aft-body cover. The ISBS radio is replacing the existing Satellite Data Link Terminal (SDLT); and the new Ultra High Frequency (UHF) antenna is replacing the existing UHF antenna. A second antenna is being added to the missile to accommodate a second frequency band. The changes to the missile are driven by the obsolescence of the SDLT hardware and the obsolescence of the UHF Demand Assigned Multiple Access (DAMA) communications infrastructure that is being phased out of service. Tomahawk Weapon System Baseline IV, Operational Requirements Document (SN 641-76-04), Revision 3, 11 August 2004.

As part of the Recertification (ACAT II) program, all Block IV TACTOMs will be updated to the modernized Block V configuration with the incorporation of NAVCOMMs kits continuing in FY 2021. Recertification inventory objective is 3992.

The TACTOM service life for RGM109E and UGM109E Block IV/V Tomahawk cruise missiles is 30 years with a 15 year deployment and recertification cycle. The TACTOM Recertification program includes FY 2021 funding associated with the recertification of BLK IV TACTOM Missiles. The yearly recertification profile will limit the missile backlog within the Fleet due to the expiration of life limiting components. The recertification contract will have three months of production lead-time prior to missile induction. Recertification activity includes the costs associated with the Raytheon labor, vendor recertification of specific components (i.e. mechanical and electrical components), recertification of the MK 45 submarine capsule, missile consumables, fuze recertification and fuel. Recertification is planned to occur concurrently with installation of NAVCOMMs Modernization Kits, which will replace the existing SDLT radio and antenna.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	
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		

The yearly recertification profile will limit missile backlog within the Fleet due to the expiration of life limiting components. This activity includes the costs associated with the Raytheon labor, vendor recertification of specific components (i.e. mechanical and electrical components), recertification of the MK 45 submarine capsule, missile consumables, fuze recertification and fuel. Recertification is planned to occur concurrently with installation of NAVCOMMs Modernization Kits, which will replace the existing SDLT radio and antenna.

MST is a Rapid Deployment Capability which includes seeker kit hardware,assemblies/subassemblies, packaging and storage. Seeker kit hardware procurement includes the sensors, nosecone, ULTRA processor, cooling pump and plumbing, bulkhead, power and signal harnesses, power supply, plumbing and electrical chase insulators, telemetry unit, wiring, magnet generator, and alternator voltage control converter. Includes modifying existing missile infrastructure to accept/install seeker kit components and assemblies into a modernized Block V missile.

M-CODE is an ACAT IV, next generation, modernized Global Positioning System (GPS) capability. TACTOM M-CODE kits consist of new Anti-Jam GPS Receiver (AGR) hardware/software and installation of the upgrade kit into TACTOM Block V AURs. Fielding of M-Code equipped AURs, enable TACTOM to be compliant with Public Law 111-38, sec 913.

JMEWS is an ACAT III, new warhead for the Block V Tomahawk Cruise Missile. JMEWS will greatly expand the land target set that the Tomahawk missile is capable of defeating, by combining the blast and fragmentation capabilities of the current warhead with a new penetration capability and improved mission planning. JMEWS will also be compliant with Insensitive Munitions requirements which improve safety during transportation and storage on land and aboard ships and submarines. JMEWS program includes upgrades to the AUR missile, and requires upgrades to the Tactical Tomahawk Weapons Control System, and Theatre Mission Planning Center programs.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)
P-3a	1 / TACTOM NAVCOMMs Modernization and Recertification Kits (Increase Capability and Maintain Reliability)				- / 0.000	- / 0.000	- / 0.000	- / 164.915	- / 0.000	- / 164.915
P-40	**Total Gross/Weapon System Cost**				**- / 0.000**	**- / 0.000**	**- / 0.000**	**- / 164.915**	**- / 0.000**	**- / 164.915**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)
P-3a	1 / TACTOM NAVCOMMs Modernization and Recertification Kits (Increase Capability and Maintain Reliability)				- / 206.075	- / 314.823	- / 281.247	- / 297.004	- / 3,056.602	- / 4,320.666
P-40	**Total Gross/Weapon System Cost**				**- / 206.075**	**- / 314.823**	**- / 281.247**	**- / 297.004**	**- / 3,056.602**	**- / 4,320.666**

*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 2021 funding supports the Recertification phase of the program with the induction of Block IV assets for modification into the Block V configuration with the installation of 156 NAVIGATION/ COMMUNICATIONS (NAVCOMMs) Kits. Funding also supports the procurement of 156 TACTOM NAVCOMMs modernization kits in FY 2021, support equipment and associated support.

FY 2021 funding includes the procurement of 44 Maritime Strike Tomahawk (MST) as a Rapid Deployment Capability which includes seeker kit hardware, assemblies/subassemblies, packaging and storage, and to establish the industrial base.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	164.915	0.000	164.915	206.075	314.823	281.247	297.004	3,056.602	4,320.666
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	164.915	0.000	164.915	206.075	314.823	281.247	297.004	3,056.602	4,320.666
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**164.915**	**0.000**	**164.915**	**206.075**	**314.823**	**281.247**	**297.004**	**3,056.602**	**4,320.666**
(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 Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Tactical Tomahawk (TACTOM) Navigation Communication Modernization kits (NAVCOMMs) consist of the Integrated Single Box Solution (ISBS) radio, two new antennas and associated cabling, a new mid-body cover, and changes to the aft-body structure and aft-body cover. The ISBS radio is replacing the existing Satellite Data Link Terminal (SDLT); and the new Ultra High Frequency (UHF) antenna is replacing the existing UHF antenna. A second antenna is being added to the missile to accommodate a second frequency band. The changes to the missile are driven by the obsolescence of the SDLT hardware and the obsolescence of the UHF Demand Assigned Multiple Access (DAMA) communications infrastructure that is being phased out of service. Tomahawk Weapon System Baseline IV, Operational Requirements Document (SN 641-76-04), Revision 3, 11 August 2004.

As part of the Recertification (ACAT II) program, all Block IV TACTOMs will be updated to the modernized Block V configuration with the incorporation of NAVCOMMs kits continuing in FY 2021. Recertification inventory objective is 3992.

The TACTOM service life for RGM109E and UGM109E Block IV/V Tomahawk cruise missiles is 30 years with a 15 year deployment and recertification cycle. The TACTOM Recertification program includes FY 2021 funding associated with the recertification of BLK IV TACTOM Missiles. The yearly recertification profile will limit the missile backlog within the Fleet due to the expiration of life limiting components. The recertification contract will have three months of production lead-time prior to missile induction. Recertification activity includes the costs associated with the Raytheon labor, vendor recertification of specific components (i.e. mechanical and electrical components), recertification of the MK 45 submarine capsule, missile consumables, fuze recertification and fuel. Recertification is planned to occur concurrently with installation of NAVCOMMs Modernization Kits, which will replace the existing SDLT radio and antenna.

The yearly recertification profile will limit missile backlog within the Fleet due to the expiration of life limiting components. This activity includes the costs associated with the Raytheon labor, vendor recertification of specific components (i.e. mechanical and electrical components), recertification of the MK 45 submarine capsule, missile consumables, fuze recertification and fuel. Recertification is planned to occur concurrently with installation of NAVCOMMs Modernization Kits, which will replace the existing SDLT radio and antenna.

Maritime Strike Tomahawk (MST) is a Rapid Deployment Capability which includes seeker kit hardware,assemblies/subassemblies, packaging and storage. Seeker kit hardware procurement includes the sensors, nosecone, ULTRA processor, cooling pump and plumbing, bulkhead, power and signal harnesses, power supply, plumbing and electrical chase insulators, telemetry unit, wiring, magnet generator, and alternator voltage control converter. Includes modifying existing missile infrastructure to accept/install seeker kit components and assemblies into a modernized Block V missile.

Military Code (M-CODE) is an ACAT IV, next generation, modernized Global Positioning System (GPS) capability. TACTOM M-CODE kits consist of new Anti-Jam GPS Receiver (AGR) hardware/software and installation of the upgrade kit into TACTOM Block V AURs. Fielding of M-Code equipped AURs, enable TACTOM to be compliant with Public Law 111-38, sec 913.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Joint Multiple Effects Warhead System (JMEWS) is an ACAT III, new warhead for the Block V Tomahawk Cruise Missile. JMEWS will greatly expand the land target set that the Tomahawk missile is capable of defeating, by combining the blast and fragmentation capabilities of the current warhead with a new penetration capability and improved mission planning. JMEWS will also be compliant with Insensitive Munitions requirements which improve safety during transportation and storage on land and aboard ships and submarines. JMEWS program includes upgrades to the AUR missile, and requires upgrades to the Tactical Tomahawk Weapons Control System, and Theatre Mission Planning Center programs.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TACTOM	**Modification Type:** Increase Capability and Maintain Reliability	**Related RDT&E PEs:** 0204229N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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												
Modification Item 1 of 5: Recertification												
A Kits												
Recurring												
1.1.1) Recertification kits - NonOrganic (1)	- / -	- / -	- / -	156 / 35.710	- / -	156 / 35.710	156 / 37.210	324 / 59.826	274 / 43.052	260 / 50.095	2,705 / 495.377	3,875 / 721.270
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / 35.710*	*- / -*	*- / 35.710*	*- / 37.210*	*- / 59.826*	*- / 43.052*	*- / 50.095*	*- / 495.377*	*- / 721.270*
Subtotal: Recertification	*- / -*	*- / -*	*- / -*	*156 / 35.710*	*- / -*	*156 / 35.710*	*156 / 37.210*	*324 / 59.826*	*274 / 43.052*	*260 / 50.095*	*2,705 / 495.377*	*3,875 / 721.270*
Modification Item 2 of 5: NAVCOMMs												
A Kits												
Recurring												
2.1.1) NAVCOMMs - NonOrganic (2)	- / -	- / -	156 / 0.000	156 / 36.908	- / -	156 / 36.908	324 / 65.144	274 / 58.757	260 / 57.063	260 / 57.311	2,445 / 555.173	3,875 / 830.356
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / 36.908*	*- / -*	*- / 36.908*	*- / 65.144*	*- / 58.757*	*- / 57.063*	*- / 57.311*	*- / 555.173*	*- / 830.356*
Subtotal: NAVCOMMs	*- / -*	*- / -*	*156 / 0.000*	*156 / 36.908*	*- / -*	*156 / 36.908*	*324 / 65.144*	*274 / 58.757*	*260 / 57.063*	*260 / 57.311*	*2,445 / 555.173*	*3,875 / 830.356*
Modification Item 3 of 5: MST												
A Kits												
Recurring												
3.1.1) MST - NonOrganic (3)	- / -	- / -	- / -	44 / 39.146	- / -	44 / 39.146	65 / 42.295	142 / 90.071	104 / 54.220	96 / 54.924	851 / 340.202	1,302 / 620.858
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / 39.146*	*- / -*	*- / 39.146*	*- / 42.295*	*- / 90.071*	*- / 54.220*	*- / 54.924*	*- / 340.202*	*- / 620.858*
Subtotal: MST	*- / -*	*- / -*	*- / -*	*44 / 39.146*	*- / -*	*44 / 39.146*	*65 / 42.295*	*142 / 90.071*	*104 / 54.220*	*96 / 54.924*	*851 / 340.202*	*1,302 / 620.858*
Modification Item 4 of 5: M-CODE-CAPABLE GPS USER EQUIPMENT (MGUE)												
A Kits												
Recurring												
4.1.1) M-CODE - NonOrganic (4)	- / -	- / -	- / -	- / -	- / -	- / -	- / -	132 / 10.240	242 / 13.484	260 / 13.109	2,421 / 140.656	3,055 / 177.489
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 10.240*	*- / 13.484*	*- / 13.109*	*- / 140.656*	*- / 177.489*
Subtotal: M-CODE-CAPABLE GPS USER EQUIPMENT (MGUE)	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*132 / 10.240*	*242 / 13.484*	*260 / 13.109*	*2,421 / 140.656*	*3,055 / 177.489*
Modification Item 5 of 5: JMEWS												
A Kits												

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TACTOM	**Modification Type:** Increase Capability and Maintain Reliability	**Related RDT&E PEs:** 0204229N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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)*
Recurring												
5.1.1) JMEWS - NonOrganic (5)	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.367	12 / 11.145	40 / 22.698	1,278 / 480.111	1,330 / 515.321
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 1.367*	*- / 11.145*	*- / 22.698*	*- / 480.111*	*- / 515.321*
Subtotal: JMEWS	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 1.367*	*12 / 11.145*	*40 / 22.698*	*1,278 / 480.111*	*1,330 / 515.321*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / 111.764*	*- / -*	*- / 111.764*	*- / 144.649*	*- / 220.261*	*- / 178.964*	*- / 198.137*	*- / 2,011.519*	*- / 2,865.294*
Support *(All Modification Items)*												
6.1) Other Production Support- NAVCOMMs Modifications (6)	- / -	- / -	- / -	- / 0.143	- / -	- / 0.143	- / 0.132	- / 0.137	- / 0.137	- / 0.117	- / 1.830	- / 2.496
6.2) Support Equipment- NAVCOMMs Modification (7)	- / -	- / -	- / -	- / 0.035	- / -	- / 0.035	- / 0.035	- / 0.035	- / 0.035	- / 0.035	- / 0.350	- / 0.525
6.3) Integrated Logistics Support- NAVCOMMs Modification (8)	- / -	- / -	- / -	- / 0.024	- / -	- / 0.024	- / 0.024	- / 0.024	- / 0.024	- / 0.024	- / 0.240	- / 0.360
6.4) Other Production Support- Recertification (9)	- / -	- / -	- / -	- / 1.187	- / -	- / 1.187	- / 1.199	- / 1.157	- / 1.175	- / 1.174	- / 15.356	- / 21.248
6.5) Support Equipment- Recertification (10)	- / -	- / -	- / -	- / 0.229	- / -	- / 0.229	- / 0.224	- / 0.234	- / 0.238	- / 0.224	- / 3.565	- / 4.714
6.6) Integrated Logistics Support- Recertification (11)	- / -	- / -	- / -	- / 0.157	- / -	- / 0.157	- / 0.152	- / 0.141	- / 0.146	- / 0.130	- / 2.414	- / 3.140
6.7) MK-45 Support- Recertification (12)	- / -	- / -	- / -	- / 3.877	- / -	- / 3.877	- / 3.424	- / 2.247	- / 2.139	- / 2.160	- / 27.464	- / 41.311
6.8) Other Production Support- MST	- / -	- / -	- / -	- / 0.735	- / -	- / 0.735	- / 0.770	- / 0.790	- / 0.810	- / 0.815	- / 3.687	- / 7.607
6.9) Support Equipment- MST (13)	- / -	- / -	- / -	- / 0.505	- / -	- / 0.505	- / 0.845	- / 1.757	- / 1.635	- / 1.279	- / 4.080	- / 10.101
6.10) Integrated Logistics Support-MST	- / -	- / -	- / -	- / 0.561	- / -	- / 0.561	- / 0.594	- / 0.636	- / 0.730	- / 0.711	- / 3.110	- / 6.342
6.11) Other Production Support-M-Code	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.025	- / 0.035	- / 0.040	- / 0.400	- / 0.500
6.12) Other Production Support-JMEWS	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.594	- / 0.680	- / 8.182	- / 9.456
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / 7.453*	*- / -*	*- / 7.453*	*- / 7.399*	*- / 7.183*	*- / 7.698*	*- / 7.389*	*- / 70.678*	*- / 107.800*
Installation												
Modification Item 1 of 5: Recertification	- / 0.000	- / 0.000	- / 0.000	- / 40.246	- / 0.000	- / 40.246	- / 41.050	- / 65.967	- / 59.458	- / 62.027	- / 631.814	- / 900.562
Modification Item 2 of 5: NAVCOMMs	- / 0.000	- / 0.000	- / 0.000	- / 5.452	- / 0.000	- / 5.452	- / 5.331	- / 10.224	- / 8.876	- / 8.511	- / 86.203	- / 124.597
Modification Item 3 of 5: MST	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 7.646	- / 11.188	- / 26.046	- / 20.038	- / 182.737	- / 247.655
Modification Item 4 of 5: M-CODE-CAPABLE GPS USER EQUIPMENT (MGUE)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.205	- / 0.259	- / 3.183	- / 3.647
Modification Item 5 of 5: JMEWS	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.643	- / 70.468	- / 71.111
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / 45.698*	*- / -*	*- / 45.698*	*- / 54.027*	*- / 87.379*	*- / 94.585*	*- / 91.478*	*- / 974.405*	*- / 1,347.572*
Total												

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TACTOM	**Modification Type:** Increase Capability and Maintain Reliability	**Related RDT&E PEs:** 0204229N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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)*
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**164.915**	**0.000**	**164.915**	**206.075**	**314.823**	**281.247**	**297.004**	**3,056.602**	**4,320.666**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits

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

Modification Item 1 of 5: Recertification

Manufacturer Information

Manufacturer Name: RAYTHEON Company | Manufacturer Location: TUCSON, AZ

Administrative Leadtime *(in Months)*: 1 | Production Leadtime *(in Months)*: 6

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Oct 2020	Oct 2021	Oct 2022	Oct 2023	Oct 2024
Delivery Dates			Apr 2021	Apr 2022	Apr 2023	Apr 2024	Apr 2025

Installation Information

Method of Implementation: Contractor:: Installation Name: Recertification kits

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	156 / 40.246	0 / 0.000	156 / 40.246	- / -	- / -	- / -	- / -	0 / 0.000	156 / 40.246
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	156 / 41.050	- / -	- / -	- / -	0 / 0.000	156 / 41.050
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	324 / 65.967	- / -	- / -	0 / 0.000	324 / 65.967
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	274 / 59.458	- / -	0 / 0.000	274 / 59.458
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	260 / 62.027	0 / 0.000	260 / 62.027
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2,705 / 631.814	2,705 / 631.814
Total	- / -	- / -	- / -	156 / 40.246	0 / 0.000	156 / 40.246	156 / 41.050	324 / 65.967	274 / 59.458	260 / 62.027	2,705 / 631.814	3,875 / 900.562

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	-	-	-	-	-	-	-	-	-	-	-	87	69	-	-	87	69	-	-	180	144	-	-	152	122	-	-	145	115	2,705	3,875
Out	-	-	-	-	-	-	-	-	-	-	-	-	34	53	52	17	34	53	52	17	72	108	108	36	61	91	92	30	58	2,907	3,875

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits

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

Modification Item 2 of 5: NAVCOMMs

Manufacturer Information

Manufacturer Name: RAYTHEON Company | Manufacturer Location: TUCSON, AZ

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Nov 2020	Jan 2022	Jan 2023	Jan 2024	Jan 2025
Delivery Dates			Nov 2021	Nov 2022	Nov 2023	Nov 2024	Nov 2025

Installation Information

Method of Implementation: Contractor:: Installation Name: NAVCOMMs

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	156 / 5.452	0 / 0.000	156 / 5.452	- / -	- / -	- / -	- / -	0 / 0.000	156 / 5.452
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	156 / 5.331	- / -	- / -	- / -	0 / 0.000	156 / 5.331
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	324 / 10.224	- / -	- / -	0 / 0.000	324 / 10.224
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	274 / 8.876	- / -	0 / 0.000	274 / 8.876
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	260 / 8.511	0 / 0.000	260 / 8.511
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	260 / 8.681	260 / 8.681
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2,445 / 77.522	2,445 / 77.522
Total	- / -	- / -	- / -	156 / 5.452	0 / 0.000	156 / 5.452	156 / 5.331	324 / 10.224	274 / 8.876	260 / 8.511	2,705 / 86.203	3,875 / 124.597

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	-	-	-	-	-	-	-	-	-	-	34	53	69	34	53	52	17	72	108	108	36	61	91	92	30	58	87	87	28	2,705	3,875
Out	-	-	-	-	-	-	-	-	-	-	-	-	34	53	52	17	34	53	52	17	72	108	108	36	61	91	92	30	58	2,907	3,875

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits

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

Modification Item 3 of 5: MST

Manufacturer Information

Manufacturer Name: RAYTHEON Company | Manufacturer Location: TUCSON, AZ

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Nov 2020	Nov 2021	Nov 2022	Nov 2023	Nov 2024
Delivery Dates			May 2022	Nov 2022	Nov 2023	Nov 2024	Nov 2025

Installation Information

Method of Implementation: Contractor:: Installation Name: MST

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	44 / 7.646	- / -	- / -	- / -	0 / 0.000	44 / 7.646
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	65 / 11.188	- / -	- / -	0 / 0.000	65 / 11.188
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	142 / 26.046	- / -	0 / 0.000	142 / 26.046
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	104 / 20.038	0 / 0.000	104 / 20.038
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	96 / 18.867	96 / 18.867
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	851 / 163.870	851 / 163.870
Total	- / -	- / -	- / -	- / -	- / -	- / -	44 / 7.646	65 / 11.188	142 / 26.046	104 / 20.038	947 / 182.737	1,302 / 247.655

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	22	17	16	16	16	36	36	35	35	26	26	26	26	947	1,302
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	11	11	28	16	16	16	36	36	35	35	26	26	999	1,302

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits

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

Modification Item 4 of 5: M-CODE-CAPABLE GPS USER EQUIPMENT (MGUE)

Manufacturer Information

Manufacturer Name: RAYTHEON Company | Manufacturer Location: TUCSON, AZ

Administrative Leadtime *(in Months)*: 7 | Production Leadtime *(in Months)*: 14

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates					Apr 2023	Apr 2024	Apr 2025
Delivery Dates					Jun 2024	Dec 2025	Dec 2026

Installation Information

Method of Implementation: Raytheon:: Installation Name: M-CODE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	132 / 0.205	- / -	0 / 0.000	132 / 0.205
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	242 / 0.259	0 / 0.000	242 / 0.259
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	260 / 0.284	260 / 0.284
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2,421 / 2.899	2,421 / 2.899
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	132 / 0.205	242 / 0.259	2,681 / 3.183	3,055 / 3.647

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	71	61	61	60	60	2,681	3,055
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	71	61	61	60	2,741	3,055

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits

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

Modification Item 5 of 5: JMEWS

Manufacturer Information

Manufacturer Name: RAYTHEON Company | Manufacturer Location: TUCSON, AZ

Administrative Leadtime *(in Months)*: 10 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates						Jul 2024	Jul 2025
Delivery Dates						Jul 2025	Jul 2026

Installation Information

Method of Implementation: Contractor:: Installation Name: JMEWS

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 0.643	0 / 0.000	12 / 0.643
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	40 / 2.186	40 / 2.186
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1,278 / 68.282	1,278 / 68.282
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 0.643	1,318 / 70.468	1,330 / 71.111

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	1,318	1,330
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,330	1,330

Footnotes:

(1) Cost Element Recertification Kits - Entries for this Cost Code prior to FY 2021 are documented in BLI 2101. Learning curve, quantity variations affecting economy of scale, escalation rates, and costs related to equipment upgrades to prepare missile for block V upgrades account for the variation in Recertification kit costs across the FYDP. Cost Element Recertification Installs - Funding variation across the FYDP

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2301 / Tomahawk Mods	**Modification Number / Title:** 1 / TACTOM NAVCOMMs Modernization and Recertification Kits
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

reflects required avionic, electrical, and structures bill of material development to prepare missile for block V upgrades. Induction schedule in FY 2020 reflects a nine month production lead-time, and FY 2021 and beyond reflects a six month production lead-time.

(2) Cost Element NAVCOMMs - Cost Element NAVCOMMs - Beginning in FY 2021, this Cost Code moved from BLI 2101 to BLI 2301. FY 2021 Installation funding is associated with NAVCOMM Kits procured in FY 2020 with funds budgeted in BLI 2101. Learning curve, quantity variations affecting economy of scale, and escalation rates account for the variation in NAVCOMM kit costs across the FYDP. Production lead-time drives NAVCOMMs kit procurements a year ahead of install into a recertified missile. NAVCOMMs kits are treated as Government Furnished Property (GFP) to recertification and have to be available for missile recertification prior to missile induction.

(3) Cost Element MST - FY 2021 is the first year of procurement, LRIP-1; quantity of 44 is required to support IOC schedule of FY 2023. Learning curve, quantity variations affecting economy of scale, escalation rates and availability of parts account for the variation in MST kit costs across the FYDP. Production lead-time for LRIP-1 drives MST kit procurement 18-months ahead of install (to establish the industrial base) as Government Furnished Property (GFP) into a recertified missile. MST kits are treated as GFP to recertification and must be available for missile recertification prior to missile induction.

(4) Cost Element M-CODE - Kits will be procured starting in FY 2023 which includes a hardware component (Anti-jam GPS Receiver, AGR-5), an installation kit, and a software component (AGR-5 SW). M-Code moved from the P5A to the P3A to increase program visibility.

(5) Cost Element JMEWS- FY 2023 funding is for the long lead energetics prior to Milestone C on EMD assets, supporting the FY 2024 procurement.

(6) Cost Element Other Production Support- NAVCOMMs - FY 2021 funding required for post production qualification radio and crypto support. Funding reflects required obsolescence mitigation including avionic, electrical, and structures bill of material development, and obsolescence Engineering Change Proposal forecasting in order to support the extended end of service date.

(7) Cost Element Support Equipment- NAVCOMMs - Includes unique support and test equipment required to support the integration of the NAVCOMMs Modernization Kits during recertification. This would include planning, resourcing and implementing management actions to acquire and support the equipment required to sustain and validate the NAVCOMMs capability/functionality ensuring that the TACTOM is available to the warfighter when it is needed.

(8) Cost Element Integrated Logistics Support- NAVCOMMs - Includes costs for support equipment management, computer resources support, training and training support, ILS program management, and packaging, handling, storage and transportation as associated with the NAVCOMMs Modernization Kit.

(9) Cost Element Other Production Support- Recertification - Unique government and contractor production support and recurring fixed costs that is required per lot of recertification kit. Funding reflects required obsolescence mitigation including avionic, electrical, and structures bill of material development, and obsolescence Engineering Change Proposal forecasting in order to support the extended end of service date.

(10) Cost Element Support Equipment- Recertification - Decrease in FY 2021 is associated with the contract awards in FY 2019 and FY 2020 to modify/procure unique support and test equipment required to enable/support the integration and test of the recertification kit. This encompasses System Integration Lab (SIL), Hardware Integration Lab (HWIL), Air Vehicle System Integration Lab (AVSIL), Guidance Test Sets (GTSs) and Mid-body Range Safety Subsystem (MRSS) Kits. Funding includes the planning, resourcing, and implementing management actions to acquire and support the equipment required to sustain and validate the capability/functionality ensuring that the TACTOM is available to the warfighter when needed. Funding in FY 2021 includes modifications/procurement of unique support and test equipment required to enable/support the integration and test of the recertification kit.

(11) Cost Element Integrated Logistics Support- Recertification - Costs include support equipment management, computer resources support, training and training support, ILS program management, and packaging, handling, storage and transportation as associated with the recertification kit.

(12) Cost Element MK-45 Support- Recertification - FY 2021-FY 2025 funding is required to recertify and extend the service life of the Composite Capsule Launching System (CCLS) barrels through procurement of rotable pool Capsule Launching System (CLS) capsules, design and qualification of CLS missile CCA seals to support the life cycle of recertification efforts, and procurement of the hydro dynamic test fixture required for Capsule Closure Assembly (CCA) seal certification.

(13) Cost Element Support Equipment-MST - Funding increases from FY 2022 to FY 2023 due to the increase in quantities, Manufacturing Readiness Assessment, Automated Test Equipment for acceptance testing, and secure shipping of components during production.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2307 / Evolved Sea Sparrow Missile (ESSM)

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: 197

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	981	45	50	120	-	120	155	280	280	300	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	1,397.189	97.727	102.601	215.375	0.000	215.375	276.604	494.486	507.555	532.997	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,397.189	97.727	102.601	215.375	0.000	215.375	276.604	494.486	507.555	532.997	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,397.189**	**97.727**	**102.601**	**215.375**	**0.000**	**215.375**	**276.604**	**494.486**	**507.555**	**532.997**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	1,424K	2,172K	2,052K	1,795K	-	1,795K	1,785K	1,766K	1,813K	1,777K	Continuing	Continuing

Description:

The Evolved SEASPARROW Missile (ESSM) Program is an international cooperative effort among twelve NATO SEASPARROW nations (Australia, Belgium, Canada, Denmark, Germany, Greece, Netherlands, Norway, Portugal, Spain, Turkey, and the U.S.) established to design, develop, test, produce and provide in-service support to a new and improved version of the SPARROW missile (RIM-7P) with the kinematic performance to defeat current and projected threats that possess low altitude, high velocity ,and maneuvering characteristics beyond the engagement capabilities of the RIM-7P. ESSM consists of Blk 1 and Blk 2 missiles.

ESSM Blk 2 provides crucial defense battlespace and fire power against the fast, low altitude, highly maneuverable Anti-Ship Cruise Missile (ASCM) threat. ESSM Blk 2 upgrade replaces the largely obsolete guidance section with a dual mode Active/Semi-Active X-Band seeker capable of defeating future threat capabilities within the existing envelope, including: smaller signatures, increased raid sizes, and adverse environments including countermeasures. Threat types include: advanced ASCMs, Anti-Ship Ballistic Missiles, surface and asymmetrical. Two ESSM Blk 2 Controlled Test Vehicle flight tests were successfully conducted in June 2017 onboard the Self Defense Test Ship at the Point Mugu Sea Range. Two Guided Test Vehicle (GTV) flight tests were completed, GTV-1 was completed in June 2018 and GTV-2 was completed in October 2018. GTV-3 round was repurposed for OT Risk Reduction shot prior to Operational Testing (OT). GTV-3 objectives will be tested in Developmental Testing (DT). The ESSM Blk 2 Milestone C decision was successfully completed in Q2 FY 2019, supporting Initial Operational Capability for AEGIS platforms scheduled for 2020 and SSDS platforms in 2023. ESSM Blk 2 Low Rate Initial Production deliveries are expected to begin in 2020 with Full Rate Production rounds delivering to the Fleet in 2023.

Production Support for ESSM Blk 2 reflects the U.S. Share under the cooperative Memorandum of Understanding (MOU) with Consortium Partners and directly results in the number of missiles each FY. The US is responsible for approximately 45% of the missile production support under this approved MOU. This amount is required for the US to meet its MOU commitment with Consortium Partners. ESSM is currently on a rigid schedule with FY 2018 Low Rate Initial Production (LRIP) deliveries beginning in August 2020 to support AEGIS Initial Operational Capability (IOC) in September 2020.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2307 / Evolved Sea Sparrow Missile (ESSM)

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: 197

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / Evolved Sea Sparrow Missile (ESSM)	P-5a, P-21			981 / 1,397.189	45 / 97.727	50 / 102.601	120 / 215.375	- / 0.000	120 / 215.375
P-40	**Total Gross/Weapon System Cost**				**981 / 1,397.189**	**45 / 97.727**	**50 / 102.601**	**120 / 215.375**	**- / 0.000**	**120 / 215.375**

*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:
Increase in overall FY 2021 funding from FY 2020 is due to an increase in the procurement of 50 LRIP rounds in FY 2020 to 120 FRP rounds in FY 2021.
LRIP 1-3 unit cost are negotiated contract prices.

FY 2021 funding increase in MK25 Mod 1 Canisters due to an increase in the procurement quantity from 13 in FY 2020 to 24 in FY 2021 to accommodate missile procurement (4 missiles per canister and 1 missile per MK852 MOD 0)

FY 2021 funding increase in MK852 Mod 0 Shipping containers due to an increase in the procurement quantity from 0 in FY 2020 to 24 in FY 2021 to accommodate missile procurement (4 missiles per canister and 1 missile per MK852 MOD 0)

Increase in FY 2021 Obsolescence funding ($1.2M) will be going towards designing out obsolete parts associated with the following: 1.) Side-Looking-Subsystem (SLS) Signal Processor (SP) Circuit Card Assembly (CCA), 2.)Form-Fit-Function (F3R) re-spins of the Dual Band Transceiver (DBT) Frequency Reference Unit (FRU), and 3.) F3R re-spins of the FRU Oscillator, Frequency Generator, and Radio Frequency (RF).

Common Munitions Built In Test (BIT) and Reprogramming Equipment (CMBRE) requirement (including procurement, adaptors, spares, power supply, and cables) begins in FY 2021. This was approved by OPNAV Sponsor and is used to reprogram ESSM Blk 2 AURs in deployed locations. CMBRE will allow the USN to perform reprogramming of the ESSM Blk 2 missile in the field. Specifically at forward deployed locations, either shore based or on the ships when deployed. Previously, reprogramming required the return of the missiles to the Seal Beach, CA Intermediate Level Maintenance Facility (ILMF). **CMBRE procurement is part of an already negotiated contract. Unit cost shown in FY 2021 President's Budget Request shows the negotiated price on the current contract ($202K).**

Increase in Test Equipment ($2.7M) is being used to procure a MK698 test set upgrade with ESSM Blk 2 test set spares and an ESSM Blk 2 Inert Operation Missile (IOM)- needed to support recertification and software upgrades at the Seal Beach Intermediate Level Maintenance Facility (ILMF).

Increase in production support from FY 2020 to FY 2021 reflects the US share of the ESSM Blk 2 Production Memorandum of Understanding (MOU) estimate for FY 2021. The estimated amounts (phasing for the Production MOU) are based on the updated life-cycle cost estimate completed during MS C (March 2019).
FY21 Production Support details are below:
1.) Producibility/Procurement Support ($9.675M): Government technical oversight on production and redesign engineering, reviews and approval of technical changes to the technical data packages and production drawings, and calibration/certification to test equipment used to support production. Support to keep the missile producible throughout the life of production and support to maintain producibility of the production line. Provide ordnance to the fleet to support the ordnance assessment (OA) program and evaluate the effects of aging energetics to continue safe use of the components through management of their service life.
2.) Security and Infrastructure Support ($7.020M): Costs required for the shared (across multiple missile families) production facility in Tucson, AZ.
3.) Configuration Management ($450K): Support for the system performance per the Navy weapon specifications.
4.) Hardware/Maintenance Support ($1.8M): Support for the IOM in the production line.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2307 / Evolved Sea Sparrow Missile (ESSM)	
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: 197		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2307 / Evolved Sea Sparrow Missile (ESSM)	**Item Number / Title [DODIC]:** 1 / Evolved Sea Sparrow Missile (ESSM)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	981	45	50	120	-	120
Gross/Weapon System Cost *($ in Millions)*	1,397.189	97.727	102.601	215.375	0.000	215.375
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,397.189	97.727	102.601	215.375	0.000	215.375
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,397.189**	**97.727**	**102.601**	**215.375**	**0.000**	**215.375**
(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 Dollars)*	1,424K	2,172K	2,052K	1,795K	-	1,795K

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - MK25 QUADPACK CANISTERS Cost																		
Recurring Cost																		
1.1.1) MK 25 QUADPACK CANISTERS(†) (1)	352,348.31	178	62.718	489,600.00	11	5.386	499,392.00	13	6.492	509,380.00	24	12.225	-	-	-	509,380.00	24	12.225
1.1.2) MK 852 Mod 0 (Blk2 Shipping)(†) (2)	56,000.00	7	0.392	57,680.00	5	0.288	-	-	-	60,010.00	24	1.440	-	-	-	60,010.00	24	1.440
Subtotal: Recurring Cost	-	-	*63.110*	-	-	*5.674*	-	-	*6.492*	-	-	*13.665*	-	-	-	-	-	*13.665*
Subtotal: Hardware - MK25 QUADPACK CANISTERS Cost	**-**	**-**	***63.110***	**-**	**-**	***5.674***	**-**	**-**	***6.492***	**-**	**-**	***13.665***	**-**	**-**	**-**	**-**	**-**	***13.665***
Hardware - ESSM MISSILES Cost																		
Recurring Cost																		
2.1.1) MK 41 AEGIS ALL UP ROUND MISSILE HARDWARE(†)	876,463.10	542	475.043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.2) MK 29 ALL UP ROUNDS MISSILE HARDWARE(†)	817,624.73	461	376.925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.3) MK 57 ALLUP ROUNDS MISSILE HARDWARE(†)	1,215K	30	36.455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.4) MK 41 X-BAND ALL UP ROUNDS MISSILE HARDWARE	858,500.00	20	17.170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	P-1 Line Item Number / Title: 2307 / Evolved Sea Sparrow Missile (ESSM)	Item Number / Title [DODIC]: 1 / Evolved Sea Sparrow Missile (ESSM)
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
2.1.5) ESSM BLOCK 2(†) (3)	1,768K	31	54.821	1,728K	45	77.742	1,727K	50	86.355	1,438K	120	172.535	-	-	-	1,438K	120	172.535
2.1.6) WARHEAD COMPATIBLE TELEMETER(†)	70,647.54	244	17.238	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.7) Missile Obsolescence (4)	-	-	3.131	-	-	-	-	-	-	-	-	1.212	-	-	-	-	-	1.212
Subtotal: Recurring Cost	-	-	*980.783*	-	-	*77.742*	-	-	*86.355*	-	-	*173.747*	-	-	-	-	-	*173.747*
Subtotal: Hardware - ESSM MISSILES Cost	**-**	**-**	***980.783***	**-**	**-**	***77.742***	**-**	**-**	***86.355***	**-**	**-**	***173.747***	**-**	**-**	**-**	**-**	**-**	***173.747***
Hardware - SHIPPING CONTAINERS Cost																		
Recurring Cost																		
3.1.1) CMBRE Procurement(†) (5)	-	-	-	-	-	-	-	-	-	202,819.00	20	4.056	-	-	-	202,819.00	20	4.056
3.1.2) CMBRE Adaptors(†)	-	-	-	-	-	-	-	-	-	91,800.00	20	1.836	-	-	-	91,800.00	20	1.836
3.1.3) CMBRE SPARES(†)	-	-	-	-	-	-	-	-	-	51,000.00	3	0.153	-	-	-	51,000.00	3	0.153
3.1.4) CMBRE Power Supply(†)	-	-	-	-	-	-	-	-	-	18,360.00	10	0.184	-	-	-	18,360.00	10	0.184
3.1.5) CMBRE Cables(†)	-	-	-	-	-	-	-	-	-	5,100.00	10	0.051	-	-	-	5,100.00	10	0.051
3.1.6) MK 852 Mod 0 (BLK 2) Shipping Containers(†)	56,000.00	10	0.560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.1.7) ROCKET MOTORS (SEASPARROW)	-	-	6.396	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.1.8) Test Equipment (6)	-	-	-	-	-	-	-	-	-	-	-	2.738	-	-	-	-	-	2.738
3.1.9) ESSM SHIPPING CONTAINERS(†)	9,092.08	467	4.246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*11.202*	-	-	-	-	-	-	-	-	*9.018*	-	-	-	-	-	*9.018*
Subtotal: Hardware - SHIPPING CONTAINERS Cost	**-**	**-**	***11.202***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***9.018***	**-**	**-**	**-**	**-**	**-**	***9.018***
Support Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	P-1 Line Item Number / Title: 2307 / Evolved Sea Sparrow Missile (ESSM)	Item Number / Title [DODIC]: 1 / Evolved Sea Sparrow Missile (ESSM)
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
4.1) PROCUREMENT SUPPORT	-	-	250.842	-	-	10.202	-	-	7.752	-	-	-	-	-	-	-	-	-
4.2) TOOLING AND TEST SUPPORT	-	-	42.140	-	-	0.594	-	-	-	-	-	-	-	-	-	-	-	-
4.3) DIMINISHING MANUFACTURING SERVICES	-	-	4.383	-	-	2.146	-	-	2.002	-	-	-	-	-	-	-	-	-
4.4) PERFORMANCE CHARACTERIZATION	-	-	29.924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5) ILS/FLEET DOCUMENTATION	-	-	3.371	-	-	0.653	-	-	-	-	-	-	-	-	-	-	-	-
4.6) COMPONENT IMPROVEMENT/ECPS	-	-	11.434	-	-	0.716	-	-	-	-	-	-	-	-	-	-	-	-
4.7) PRODUCIBILITY/ PROCUREMENT SUPPORT (7)	-	-	-	-	-	-	-	-	-	-	-	9.675	-	-	-	-	-	9.675
4.8) SECURITY/ INFRASTRUCTURE SUPPORT (8)	-	-	-	-	-	-	-	-	-	-	-	7.020	-	-	-	-	-	7.020
4.9) CONFIGURATION MANAGEMENT (9)	-	-	-	-	-	-	-	-	-	-	-	0.450	-	-	-	-	-	0.450
4.10) HARDWARE/ MAINTENANCE SUPPORT (10)	-	-	-	-	-	-	-	-	-	-	-	1.800	-	-	-	-	-	1.800
Subtotal: Support Cost	***-***	***-***	***342.094***	***-***	***-***	***14.311***	***-***	***-***	***9.754***	***-***	***-***	***18.945***	***-***	***-***	***-***	***-***	***-***	***18.945***
Gross/Weapon System Cost	**1,424K**	**981**	**1,397.189**	**2,172K**	**45**	**97.727**	**2,052K**	**50**	**102.601**	**1,795K**	**120**	**215.375**	**-**	**-**	**0.000**	**1,795K**	**120**	**215.375**

(†) indicates the presence of a P-5a

Footnotes:

(1) There are four (4) missiles per MK 25 Quadpack Canister.

(2) There is one (1) missile per MK 852 Mod 0. MK 852 Canisters were not required in FY20 because all of the missiles in FY20 are going to AEGIS ships which are MK25 Mod 1s. MK852s are just transport containers that go to Ship Self Defense System (SSDS) ships to be loaded. SSDS ships won't be modified to take delivery of ESSM Blk 2 AURs until FY23 (procurement in FY21 with delivery 18-24 months).

(3) LRIP Rounds (FY 2018-2020) show the negotiated price. FY21 FRP rounds are current estimates.

(4) FY 2021 Obsolescence funding will be going towards designing out obsolete parts associated with the following: 1.) Side-Looking-Subsystem (SLS) Signal Processor (SP) Circuit Card Assembly (CCA), 2.)Form-Fit-Function (F3R) re-spins of the Dual Band Transceiver (DBT) Frequency Reference Unit (FRU), and 3.)F3R re-spins of the FRU Oscillator, Frequency Generator, and Radio Frequency (RF)

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2307 / Evolved Sea Sparrow Missile (ESSM)	**Item Number / Title [DODIC]:** 1 / Evolved Sea Sparrow Missile (ESSM)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(5) CMBRE requirement (including procurement, adaptors, spares, power supply, and cables) begins in FY 2021. This was approved by OPNAV Sponsor and is used to reprogram ESSM Blk 2 AURs in deployed locations.

(6) Test Equipment is being used to procure a MK698 test set upgrade with ESSM Blk 2 test set spares and an ESSM Blk 2 Inert Operation Missile (IOM)- needed to support recertification and software upgrades at the Seal Beach Intermediate Level Maintenance Facility (ILMF).

(7) Government technical oversight on production and redesign engineering, reviews and approval of technical changes to the technical data packages and production drawings, and calibration/certification to test equipment used to support production. Support to keep the missile producible throughout the life of production and support to maintain producibility of the production line. Provide ordnance to the fleet to support the ordnance assessment (OA) program and evaluate the effects of aging energetics to continue safe use of the components through management of their service life.

(8) Costs required for the shared (across multiple missile families) production facility in Tucson, AZ. Previous submissions showed this funding in overall procurement support however the effort is now being broken out to show specific information on what support costs are being used for.

(9) Support for the system performance per the Navy weapon specifications

(10) Support for the Inert Operation Missile (IOM) in the production line

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	P-1 Line Item Number / Title: 2307 / Evolved Sea Sparrow Missile (ESSM)	Item Number / Title [DODIC]: 1 / Evolved Sea Sparrow Missile (ESSM)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) MK 25 QUADPACK CANISTERS(†)		2016	BAE / MINNEAPOLIS, MN	SS / FFP	NAVSEA	Mar 2016	Jun 2017	3	419,200.00	Y		Feb 2014
1.1.1) MK 25 QUADPACK CANISTERS(†)		2017	BAE / MINNEAPOLIS, MN	SS / FFP	NAVSEA	May 2017	Aug 2018	19	374,064.00	Y		Feb 2015
1.1.1) MK 25 QUADPACK CANISTERS(†)		2018	BAE / MINNEAPOLIS, MN	C / FFP	NAVSEA	Jul 2019	Oct 2020	11	480,000.00	Y		Feb 2016
1.1.1) MK 25 QUADPACK CANISTERS(†)		2019	BAE / MINNEAPOLIS, MN	C / FFP	NAVSEA	Jul 2019	Oct 2020	11	489,600.00	Y		
1.1.1) MK 25 QUADPACK CANISTERS(†)	✓	2020	BAE / MINNEAPOLIS, MN	C / TBD	NAVSEA	Mar 2020	Jun 2021	13	499,392.00	Y		
1.1.1) MK 25 QUADPACK CANISTERS(†)		2021	BAE / MINNEAPOLIS, MN	C / TBD	NAVSEA	Mar 2021	Jun 2022	24	509,380.00	Y		
1.1.2) MK 852 Mod 0 (Blk2 Shipping)		2018	Raytheon CO / Tucson AZ	SS / FFP	NAVSEA	Aug 2019	Aug 2019	7	56,000.00	Y		Oct 2017
1.1.2) MK 852 Mod 0 (Blk2 Shipping)		2019	Raytheon CO / Tucson AZ	SS / FFP	NAVSEA	Aug 2019	Aug 2019	5	57,680.00	Y		Oct 2018
1.1.2) MK 852 Mod 0 (Blk2 Shipping)		2021	Raytheon CO / Tucson AZ	C / TBD	NAVSEA	Oct 2020	Oct 2020	24	60,010.00	N		
2.1.1) MK 41 AEGIS ALL UP ROUND MISSILE HARDWARE		2015	Raytheon CO (11) / Tucson, AZ	SS / FFP	NAVSEA	Mar 2015	Mar 2017	41	1,023K	Y		Oct 2013
2.1.1) MK 41 AEGIS ALL UP ROUND MISSILE HARDWARE		2016 (12)	Raytheon CO (11) / Tucson, AZ	SS / FFP	NAVSEA	Mar 2016	Mar 2018	12	1,038K	Y		Oct 2014
2.1.1) MK 41 AEGIS ALL UP ROUND MISSILE HARDWARE		2017 (13)	Raytheon CO (11) / Tucson, AZ	SS / FFP	NAVSEA	May 2017	May 2019	49	1,201K	Y		Oct 2015
2.1.2) MK 29 ALL UP ROUNDS MISSILE HARDWARE		2015	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Mar 2015	Mar 2017	63	898,825.40	Y	Mar 2000	Jun 2013
2.1.2) MK 29 ALL UP ROUNDS MISSILE HARDWARE		2016 (14)	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Mar 2016	Mar 2018	18	971,944.44	Y	Mar 2000	Jun 2014
2.1.3) MK 57 ALLUP ROUNDS MISSILE HARDWARE(†)		2017 (15)	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Oct 2016	Oct 2018	24	1,277K	Y		
2.1.5) ESSM BLOCK 2(†)		2018	Raytheon CO (16) / Tucson, AZ	SS / FFP	NAVSEA	Jul 2019	Jan 2021	31	1,748K	Y		Oct 2017
2.1.5) ESSM BLOCK 2(†)		2019	Raytheon CO (16) / Tucson, AZ	SS / FFP	NAVSEA	Jul 2019	Jul 2021	45	1,728K	Y		Oct 2018
2.1.5) ESSM BLOCK 2(†)	✓	2020	Raytheon CO (16) / Tucson, AZ	SS / FFP	NAVSEA	Nov 2019	Nov 2021	50	1,727K	Y		Oct 2019
2.1.5) ESSM BLOCK 2(†)		2021	Raytheon CO (16) / Tucson, AZ	SS / FPIF	NAVSEA	Mar 2021	Mar 2023	120	1,438K	N	Oct 2020	
2.1.6) WARHEAD COMPATIBLE TELEMETER(†)		2015	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Mar 2015	Sep 2017	41	74,829.27	Y	Mar 2000	Jun 2014

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	P-1 Line Item Number / Title: 2307 / Evolved Sea Sparrow Missile (ESSM)	Item Number / Title [DODIC]: 1 / Evolved Sea Sparrow Missile (ESSM)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1.6) WARHEAD COMPATIBLE TELEMETER(†)		2016 (17)	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Mar 2016	Sep 2018	6	76,333.33	Y	Mar 2000	Jun 2015
2.1.6) WARHEAD COMPATIBLE TELEMETER(†)		2017 (18)	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	May 2017	Nov 2019	28	76,320.00	Y	Mar 2000	Jun 2016
3.1.1) CMBRE Procurement		2021	Northrop Grumman / Huntsville, Alabama	C / TBD	NAVAIR	Nov 2020	Nov 2020	20	202,819.00	N		
3.1.2) CMBRE Adaptors		2021	Northrop Grumman / Huntsville, Alabama	C / TBD	NAVAIR	Nov 2020	Nov 2020	20	91,800.00	N		
3.1.3) CMBRE SPARES		2021	Northrop Grumman / Huntsville, Alabama	C / TBD	NAVAIR	Nov 2020	Nov 2020	3	51,000.00	N		
3.1.4) CMBRE Power Supply		2021	Northrop Grumman / Huntsville, Alabama	C / TBD	NAVAIR	Oct 2020	Oct 2020	10	18,360.00	N		
3.1.5) CMBRE Cables		2021	Northrop Grumman / Huntsville, Alabama	C / TBD	NAVAIR	Oct 2020	Oct 2020	10	5,100.00	N		
3.1.6) MK 852 Mod 0 (BLK 2) Shipping Containers(†)		2018	Raytheon CO / Tucson AZ	SS / FPIF	NAVSEA	Sep 2018	Sep 2019	10	56,000.00	Y		
3.1.9) ESSM SHIPPING CONTAINERS(†)		2015	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Mar 2015	May 2017	63	6,031.75	Y	Mar 2000	Oct 2014
3.1.9) ESSM SHIPPING CONTAINERS(†)		2016 (19)	Raytheon CO / Tucson, AZ	SS / FFP	NAVSEA	Dec 2016	Feb 2019	18	6,166.67	Y	Mar 2000	Oct 2015

(†) indicates the presence of a P-21

Footnotes:

(11) ESSM is a cooperative effort among twelve NATO SEASPARROW nations which contributes to MSR.
(12) Included on the FY 2016 - FY 2017 Multi-Year Procurement contract.
(13) Included on the FY 2016 - FY 2017 Multi-Year Procurement contract.
(14) Included on the FY 2016 - FY 2017 Multi-Year Procurement contract.
(15) Included on the FY 2016 - FY 2017 Multi-Year Procurement contract.
(16) FRP Test Equipment on contract- won't be available until after FY 2022. MSR Total Quantity includes Consoritum.
(17) Included on the FY 2016 - FY 2017 Multi-Year Procurement contract.
(18) Included on the FY 2016 - FY 2017 Multi-Year Procurement contract.
(19) Included on the FY 2016 - FY 2017 Multi-Year Procurement contract.

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2307 / Evolved Sea Sparrow Missile (ESSM)	**Item Number / Title [DODIC]:** 1 / Evolved Sea Sparrow Missile (ESSM)

Cost Elements (Units in Each)							Fiscal Year 2015												Fiscal Year 2016												BALANCE
							Calendar Year 2015												Calendar Year 2016												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK 25 QUADPACK CANISTERS (1)																															
Prior Years Deliveries: 145																															
	1	2016	NAVY	3	0	3																		A -	-	-	-	-	-	-	3
	1	2017	NAVY	19	0	19																									19
	1	2018	NAVY	11	0	11																									11
	1	2019	NAVY	11	0	11																									11
✓	1	2020	NAVY	13	0	13																									13
	1	2021	NAVY	24	0	24																									24
2.1.3) MK 57 ALLUP ROUNDS MISSILE HARDWARE																															
Prior Years Deliveries: 6																															
	2	2017	NAVY	24	0	24																									24
2.1.5) ESSM BLOCK 2 (3)																															
	3	2018	NAVY	31 (20)	0	31																									31
	3	2019	NAVY	45	0	45																									45
✓	3	2020	NAVY	50	0	50																									50
	3	2021	NAVY	120	0	120																									120
2.1.6) WARHEAD COMPATIBLE TELEMETER																															
Prior Years Deliveries: 169																															
	4	2015	NAVY	41	0	41						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41
	4	2016	NAVY	6	0	6																		A -	-	-	-	-	-	-	6
	4	2017	NAVY	28	0	28																									28
3.1.6) MK 852 Mod 0 (BLK 2) Shipping Containers																															
	5	2018	NAVY	10	0	10																									10
3.1.9) ESSM SHIPPING CONTAINERS																															
Prior Years Deliveries: 386																															
	6	2015	NAVY	63	0	63						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63
	6	2016	NAVY	18	0	18																									18
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3

P-1 Line Item Number / Title: 2307 / Evolved Sea Sparrow Missile (ESSM)

Item Number / Title [DODIC]: 1 / Evolved Sea Sparrow Missile (ESSM)

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
							Calendar Year 2017												Calendar Year 2018												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK 25 QUADPACK CANISTERS (1)																															
Prior Years Deliveries: 145																															
	1	2016	NAVY	3	0	3	-	-	-	-	-	-	-	-	3																0
	1	2017	NAVY	19	0	19								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	17
	1	2018	NAVY	11	0	11																									11
	1	2019	NAVY	11	0	11																									11
✓	1	2020	NAVY	13	0	13																									13
	1	2021	NAVY	24	0	24																									24
2.1.3) MK 57 ALLUP ROUNDS MISSILE HARDWARE																															
Prior Years Deliveries: 6																															
	2	2017	NAVY	24	0	24	A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
2.1.5) ESSM BLOCK 2 (3)																															
	3	2018	NAVY	31 (20)	0	31																									31
	3	2019	NAVY	45	0	45																									45
✓	3	2020	NAVY	50	0	50																									50
	3	2021	NAVY	120	0	120																									120
2.1.6) WARHEAD COMPATIBLE TELEMETER																															
Prior Years Deliveries: 169																															
	4	2015	NAVY	41	0	41	-	-	-	-	-	-	-	-	-	-	-	5	6	6	8	6	5	5							0
	4	2016	NAVY	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4
	4	2017	NAVY	28	0	28								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28
3.1.6) MK 852 Mod 0 (BLK 2) Shipping Containers																															
	5	2018	NAVY	10	0	10																								A -	10
3.1.9) ESSM SHIPPING CONTAINERS																															
Prior Years Deliveries: 386																															
	6	2015	NAVY	63	0	63	-	-	-	-	-	-	-	15	21	8	10	9													0
	6	2016	NAVY	18	0	18			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2307 / Evolved Sea Sparrow Missile (ESSM)	**Item Number / Title [DODIC]:** 1 / Evolved Sea Sparrow Missile (ESSM)

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
										Calendar Year 2019												Calendar Year 2020									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK 25 QUADPACK CANISTERS (1)																															
Prior Years Deliveries: 145																															
	1	2016	NAVY	3	3	0																									0
	1	2017	NAVY	19	2	17	2	2	2	2	2	3	2	2																	0
	1	2018	NAVY	11	0	11										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
	1	2019	NAVY	11	0	11										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
✓	1	2020	NAVY	13	0	13																		A -	-	-	-	-	-	-	13
	1	2021	NAVY	24	0	24																									24
2.1.3) MK 57 ALLUP ROUNDS MISSILE HARDWARE																															
Prior Years Deliveries: 6																															
	2	2017	NAVY	24	0	24	3	3	3	3	3	3	3	3																	0
2.1.5) ESSM BLOCK 2 (3)																															
	3	2018	NAVY	31 (20)	0	31										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
	3	2019	NAVY	45	0	45										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45
✓	3	2020	NAVY	50	0	50														A -	-	-	-	-	-	-	-	-	-	-	50
	3	2021	NAVY	120	0	120																									120
2.1.6) WARHEAD COMPATIBLE TELEMETER																															
Prior Years Deliveries: 169																															
	4	2015	NAVY	41	41	0																									0
	4	2016	NAVY	6	2	4	2	2																							0
	4	2017	NAVY	28	0	28	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	7	7								0
3.1.6) MK 852 Mod 0 (BLK 2) Shipping Containers																															
	5	2018	NAVY	10	0	10	-	-	-	-	-	-	-	-	-	-	-	5	5												0
3.1.9) ESSM SHIPPING CONTAINERS																															
Prior Years Deliveries: 386																															
	6	2015	NAVY	63	63	0																									0
	6	2016	NAVY	18	0	18	-	-	-	-	4	4	4	4	2																0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2307 / Evolved Sea Sparrow Missile (ESSM)	**Item Number / Title [DODIC]:** 1 / Evolved Sea Sparrow Missile (ESSM)

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK 25 QUADPACK CANISTERS (1)																															
Prior Years Deliveries: 145																															
	1	2016	NAVY	3	3	0																									0
	1	2017	NAVY	19	19	0																									0
	1	2018	NAVY	11	0	11	1	-	-	3	3	3	1																		0
	1	2019	NAVY	11	0	11	1	1	1	1	1	1	1	1	1	1	1														0
✓	1	2020	NAVY	13	0	13	-	-	-	-	-	-	-	-	1	1	1	-	2	2	2	2	-	2							0
	1	2021	NAVY	24	0	24						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	15
2.1.3) MK 57 ALLUP ROUNDS MISSILE HARDWARE																															
Prior Years Deliveries: 6																															
	2	2017	NAVY	24	24	0																									0
2.1.5) ESSM BLOCK 2 (3)																															
	3	2018	NAVY	31 (20)	0	31	-	-	-	4	8	4	4	4	4	3															0
	3	2019	NAVY	45	0	45	-	-	-	-	-	-	-	-	-	6	6	6	6	6	6	6	3								0
✓	3	2020	NAVY	50	0	50	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	4	4	4	4	4	4	4	5	2
	3	2021	NAVY	120	0	120						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120
2.1.6) WARHEAD COMPATIBLE TELEMETER																															
Prior Years Deliveries: 169																															
	4	2015	NAVY	41	41	0																									0
	4	2016	NAVY	6	6	0																									0
	4	2017	NAVY	28	28	0																									0
3.1.6) MK 852 Mod 0 (BLK 2) Shipping Containers																															
	5	2018	NAVY	10	10	0																									0
3.1.9) ESSM SHIPPING CONTAINERS																															
Prior Years Deliveries: 386																															
	6	2015	NAVY	63	63	0																									0
	6	2016	NAVY	18	18	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2307 / Evolved Sea Sparrow Missile (ESSM)	**Item Number / Title [DODIC]:** 1 / Evolved Sea Sparrow Missile (ESSM)

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
										Calendar Year 2023												Calendar Year 2024									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK 25 QUADPACK CANISTERS [1]																															
Prior Years Deliveries: 145																															
	1	2016	NAVY	3	3	0																									0
	1	2017	NAVY	19	19	0																									0
	1	2018	NAVY	11	11	0																									0
	1	2019	NAVY	11	11	0																									0
✓	1	2020	NAVY	13	13	0																									0
	1	2021	NAVY	24	9	15	2	2	2	2	2	2	2	1																	0
2.1.3) MK 57 ALLUP ROUNDS MISSILE HARDWARE																															
Prior Years Deliveries: 6																															
	2	2017	NAVY	24	24	0																									0
2.1.5) ESSM BLOCK 2 [3]																															
	3	2018	NAVY	31 [20]	31	0																									0
	3	2019	NAVY	45	45	0																									0
✓	3	2020	NAVY	50	48	2	2																								0
	3	2021	NAVY	120	0	120	-	-	-	-	-	10	10	10	10	10	11	10	10	10	10	9	10								0
2.1.6) WARHEAD COMPATIBLE TELEMETER																															
Prior Years Deliveries: 169																															
	4	2015	NAVY	41	41	0																									0
	4	2016	NAVY	6	6	0																									0
	4	2017	NAVY	28	28	0																									0
3.1.6) MK 852 Mod 0 (BLK 2) Shipping Containers																															
	5	2018	NAVY	10	10	0																									0
3.1.9) ESSM SHIPPING CONTAINERS																															
Prior Years Deliveries: 386																															
	6	2015	NAVY	63	63	0																									0
	6	2016	NAVY	18	18	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2307 / Evolved Sea Sparrow Missile (ESSM)	**Item Number / Title [DODIC]:** 1 / Evolved Sea Sparrow Missile (ESSM)

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	BAE - MINNEAPOLIS, MN	45	82	120	0	5	15	20	5	5	15	20
2	Raytheon CO - Tucson, AZ	180	300	420	8	2	24	26	2	2	24	26
3	Raytheon CO (16) - Tucson, AZ	120	180	240	8	2	24	26	2	2	24	26
4	Raytheon CO - Tucson, AZ	180	300	420	0	0	30	30	0	0	30	30
5	Raytheon CO - Tucson AZ			TBD	0	0	0	0	0	0	0	0
6	Raytheon CO - Tucson, AZ			TBD	0	0	26	26	0	0	26	26

"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:
(16) FRP Test Equipment on contract- won't be available until after FY 2022. MSR Total Quantity includes Consoritum.
(20) LRIP deliveries being in August FY 2020

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2326 / Harpoon Mods

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	15.300	26.840	23.585	0.000	0.000	0.000	4.255	3.538	3.524	3.587	-	80.629
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	15.300	26.840	23.585	0.000	0.000	0.000	4.255	3.538	3.524	3.587	-	80.629
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**15.300**	**26.840**	**23.585**	**0.000**	**0.000**	**0.000**	**4.255**	**3.538**	**3.524**	**3.587**	**-**	**80.629**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Harpoon Block II+ (HII+) retrofit kit procurement provides the Department of Navy (DoN) with an enhanced tactical navigation and targeting selectivity capabilities over the legacy Harpoon Block IC (HIC) inventory. Harpoon Block II+ is a Network Enabled, Air-Launched, Anti-ship Cruise missile with the ability to receive in-flight targeting updates, improving target selectivity and the engagement of moving maritime targets. Additionally, the system utilizes the Global Positioning System to provide in-flight updates coupled with an active radar seeker for accurate targeting. The program procurement budget keeps pace with evolving enemy threats by providing a network enabled, anti-ship cruise missile capability, which compliments the attributes of associated launch platforms. The survivability of the HII+ is increased over the HIC due to the upgrade retrofit kit, increasing the lethality of the weapon system. The DoN's planned procurement modifies legacy HIC with the retrofit kits, to include procurement of Captive Air Training Missiles (CATMs), increasing the Anti-Surface Warfare capabilities of Fleet Forces. The acquisition strategy includes the harvesting and software reprogramming of data links from existing weapons inventories to support the HII+ modification/production effort.

The Encapsulated (ENCAP) Harpoon Block IC (HIC) missiles provides Navy Los Angeles-class nuclear attack submarines (SSN) a sub-launched, all-weather, long-range Anti-Surface Warfare (ASuW) missile to attack enemy warships at stand-off ranges, to include Surface and Amphibious Action Groups. The ENCAP Reconstitution Program will refurbish and recertify 60 ENCAP HIC all-up rounds from deep storage to an "as-new" war-ready material condition (ENCAP Harpoons were placed in deep storage in 1996). The controlled storage conditions achieved by the missile capsule have preserved the material condition of the weapon system, allowing for relatively quick recertification and reissue. Due to the ease and speed of missile recertifications the ENCAP HIC Reconstitution Program will fill a critical, time sensitive ASuW capability gap and meet Speed to the Fleet requirements.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2326 / Harpoon Mods

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / Harpoon Block II+ (Added Capability)				- / 15.300	- / 26.840	- / 23.585	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**- / 15.300**	**- / 26.840**	**- / 23.585**	**- / 0.000**	**- / 0.000**	**- / 0.000**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	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	1 / Harpoon Block II+ (Added Capability)				- / 4.255	- / 3.538	- / 3.524	- / 3.587	- / 0.000	- / 80.629
P-40	**Total Gross/Weapon System Cost**				**- / 4.255**	**- / 3.538**	**- / 3.524**	**- / 3.587**	**- / -**	**- / 80.629**

*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:
Decrease from FY 2020 to FY 2021 due to updated munitions requirements analysis indicating that sufficient Harpoon Block II+ Kits are being procured through FY 2020. As a result, funding was completely zeroed out in FY 2021. FY 2021 Harpoon Block II+ budget was decreased which resulted in removing CATM procurements, Harpoon Block II+ Kits procurement, Containers, Mission Planning, Support and Training.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2326 / Harpoon Mods	**Modification Number / Title:** 1 / Harpoon Block II+
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	15.300	26.840	23.585	0.000	0.000	0.000	4.255	3.538	3.524	3.587	0.000	80.629
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	15.300	26.840	23.585	0.000	0.000	0.000	4.255	3.538	3.524	3.587	0.000	80.629
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**15.300**	**26.840**	**23.585**	**0.000**	**0.000**	**0.000**	**4.255**	**3.538**	**3.524**	**3.587**	**0.000**	**80.629**
(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 Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Encapsulated (ENCAP) Harpoon Block IC (HIC) missiles provides Navy Los Angeles-class nuclear attack submarines (SSN) a sub-launched, all-weather, long-range Anti-Surface Warfare (ASuW) missile to attack enemy warships at stand-off ranges, to include Surface and Amphibious Action Groups. The ENCAP Reconstitution Program will refurbish and recertify 60 ENCAP HIC all-up rounds from deep storage to an "as-new" war-ready material condition (ENCAP Harpoons were placed in deep storage in 1996). The controlled storage conditions achieved by the missile capsule have preserved the material condition of the weapon system, allowing for relatively quick recertification and reissue. Due to the ease and speed of missile recertifications the ENCAP HIC Reconstitution Program will fill a critical, time sensitive ASuW capability gap and meet Speed to the Fleet requirements.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2326 / Harpoon Mods	**Modification Number / Title:** 1 / Harpoon Block II+
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: RGM-84M and AGM-84M	**Modification Type:** Added Capability	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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												
Modification Item 1 of 1: Harpoon Block II+												
B Kits												
Recurring												
1.1.1) Harpoon Block II+ Installation Kits - NonOrganic (1)	53 / 14.254	79 / 15.991	24 / 9.273	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	156 / 39.518
1.1.2) Captive Air Test Missiles - NonOrganic (2)	- / -	2 / 0.884	18 / 8.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	20 / 8.984
Subtotal: Recurring	*- / 14.254*	*- / 16.875*	*- / 17.373*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 48.502*
Non-Recurring												
1.2.1) Non-Recurring - Organic	- / -	- / 2.616	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.616
Subtotal: Non-Recurring	*- / 0.000*	*- / 2.616*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 2.616*
Subtotal: Harpoon Block II+	*53 / 14.254*	*81 / 19.491*	*42 / 17.373*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*176 / 51.118*
Subtotal: Procurement, All Modification Items	*- / 14.254*	*- / 19.491*	*- / 17.373*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 51.118*
Support *(All Modification Items)*												
2.1) ENCAP Production Engineering Support (PES)	- / -	- / -	- / 0.406	- / -	- / -	- / -	- / 2.128	- / 1.769	- / 1.762	- / 1.794	- / -	- / 7.859
2.2) ENCAP Test Support	- / -	- / -	- / 0.406	- / -	- / -	- / -	- / 2.127	- / 1.769	- / 1.762	- / 1.793	- / -	- / 7.857
2.3) Harpoon Block II+ Containers (3)	- / -	- / 1.030	- / 2.191	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.221
2.4) Harpoon Block II+ Data Link Reprogramming	- / -	- / 2.650	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.650
2.5) Harpoon Block II+ Data Link Harvesting	- / -	- / 2.152	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.152
2.6) Harpoon Block II+ Mission Planning	- / -	- / 0.039	- / 0.909	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.948
2.7) Harpoon Block II+ Production Engineering Support (PES)	- / 0.696	- / 1.063	- / 1.850	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.609
2.8) Harpoon Block II+ Training	- / 0.350	- / 0.415	- / 0.450	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.215
Subtotal: Support	*- / 1.046*	*- / 7.349*	*- / 6.212*	*- / -*	*- / -*	*- / -*	*- / 4.255*	*- / 3.538*	*- / 3.524*	*- / 3.587*	*- / 0.000*	*- / 29.511*
Installation												
Modification Item 1 of 1: Harpoon Block II+	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*
Total												
Total Cost (Procurement + Support + Installation)	**15.300**	**26.840**	**23.585**	**0.000**	**0.000**	**0.000**	**4.255**	**3.538**	**3.524**	**3.587**	**0.000**	**80.629**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2326 / Harpoon Mods	**Modification Number / Title:** 1 / Harpoon Block II+
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Harpoon Block II+

Manufacturer Information

Manufacturer Name: Boeing	Manufacturer Location: St. Louis, Missouri
Administrative Leadtime *(in Months)*: 10	Production Leadtime *(in Months)*: 19

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Mar 2020					
Delivery Dates	Aug 2021	Oct 2022					

Installation Information

Method of Implementation: [none specified]:: Installation Name: Harpoon Block II+ Installation Kits

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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	- / -	- / -	53 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	53 / -
FY 2019	- / -	- / -	- / -	40 / 0.000	0 / 0.000	40 / 0.000	39 / 0.000	- / -	- / -	- / -	0 / 0.000	79 / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.000	- / -	- / -	0 / 0.000	24 / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	53 / 0.000	40 / 0.000	0 / 0.000	40 / 0.000	39 / 0.000	24 / 0.000	- / -	- / -	0 / 0.000	156 / -

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	-	-	-	-	-	-	27	26	-	-	-	-	40	39	-	-	-	12	12	-	-	-	-	-	-	-	-	-	-	-	156
Out	-	-	-	-	-	-	-	27	26	-	-	-	-	40	39	-	-	-	12	12	-	-	-	-	-	-	-	-	-	-	156

Method of Implementation: [none specified]:: Installation Name: Captive Air Test Missiles

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2326 / Harpoon Mods	**Modification Number / Title:** 1 / Harpoon Block II+
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Harpoon Block II+

Installation Information

Method of Implementation: [none specified]:: Installation Name: Captive Air Test Missiles

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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)*
FY 2019	- / -	- / -	- / -	2 / 0.000	0 / 0.000	2 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	2 / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	18 / 0.000	- / -	- / -	- / -	0 / 0.000	18 / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	2 / 0.000	0 / 0.000	2 / 0.000	18 / 0.000	- / -	- / -	- / -	0 / 0.000	20 / -

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	-	-	-	-	-	-	-	-	-	-	1	1	-	-	9	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
Out	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	9	9	-	-	-	-	-	-	-	-	-	-	-	-	-	20

Footnotes:

(1) FY 2021 Harpoon Block II+ Installation Kits were decreased due to updated munitions requirement analysis. FY 2020 Harpoon Block II+ Installation Kit quantities were decreased in order to procure additional CATMs necessary for fleet requirement.

(2) FY 2021 CATM quantities were decreased due to updated munitions requirement analysis. FY 2020 CATM quantities were increased in order to support Fleet training requirements associated with the network enabled data link.

(3) FY 2021 container funding was decreased due to updated munitions requirement analysis. FY 2020 container funding was increased in order to procure containers necessary for Fleet requirements.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2327 / HARM Mods

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205601N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	24	-	24	32	70	109	140	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	1,022.538	179.885	183.740	147.572	0.000	147.572	128.218	192.915	237.403	270.715	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,022.538	179.885	183.740	147.572	0.000	147.572	128.218	192.915	237.403	270.715	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,022.538**	**179.885**	**183.740**	**147.572**	**0.000**	**147.572**	**128.218**	**192.915**	**237.403**	**270.715**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	3.665	3.640	-	3.640	3.711	3.787	0.656	0.656	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	6,149K	-	6,149K	4,007K	2,756K	2,178K	1,934K	Continuing	Continuing

Description:

AGM-88E Advanced Anti-Radiation Guided Missile (AARGM) is an ACAT-1C acquisition program to upgrade the Legacy AGM-88 High Speed Anti-Radiation Missile (HARM) with multi-mode guidance and enhanced targeting capability. The AARGM program will integrate multi-mode guidance (passive Anti-Radiation Homing (ARH)/active Millimeter Wave (MMW) Radar/Global Positioning system (GPS)/Inertial Navigation System) on the HARM AGM-88 missile. The AARGM weapon system capabilities include: active MMW terminal guidance, counter shutdown, expanded threat coverage, enhanced ARH receiver, Weapon Impact Assessment (WIA) transmission prior to detonation, GPS point-to-point weapon navigation, and weapon employment with impact avoidance zone/missile impact zones. AARGM AGM-88E production units possess the capability to engage targets in the Destruction of Enemy Air Defenses (DEAD) mission area and will be able to destroy non-traditional and Overseas Contingency Operation (OCO) targets. AARGM is a cooperative program between the Department of Defense of the United States of America and the Ministry of Defense of the Republic of Italy.

AGM-88G Advanced Anti-Radiation Guided Missile Extended Range (AARGM-ER) is an ACAT-1B program leveraging DoD 5000 Model 4 (rapid acquisition). The AARGM-ER program will integrate hardware and software upgrades to the AARGM missile guidance and control sections, a new rocket motor, Control Actuation System (CAS) into a new outer mold line able to be launched from FA-18 E/F, EA-18G and is compatible with F-35 internal bay platforms. AARGM-ER's capabilities will provide improved AARGM operational capabilities adding extended range, increased survivability and effectiveness against complex, new and emerging threats. AARGM-ER AGM-88G production units will prosecute Integrated Air Defense Systems (IADS) supporting Suppression of Enemy Air Defensed (SEAD)/DEAD missions.

The Procurement Quantity on the P-40 is reflective of AARGM-ER AUR Quantities only.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2327 / HARM Mods

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205601N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / HARM Mods (AARGM) (Added Capability)			368	- / 1,022.538	- / 179.885	- / 183.740	- / 86.052	- / 0.000	- / 86.052
P-3a	2 / HARM Mods (AARGM ER) (Added Capability)			607	- / 0.000	- / 0.000	- / 0.000	- / 61.520	- / 0.000	- / 61.520
P-40	**Total Gross/Weapon System Cost**				**- / 1,022.538**	**- / 179.885**	**- / 183.740**	**24 / 147.572**	**- / 0.000**	**24 / 147.572**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	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	1 / HARM Mods (AARGM) (Added Capability)			368	- / 51.553	- / 52.590	- / 53.636	- / 54.706	- / 0.000	- / 1,684.700
P-3a	2 / HARM Mods (AARGM ER) (Added Capability)			607	- / 76.665	- / 140.325	- / 183.767	- / 216.009	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**32 / 128.218**	**70 / 192.915**	**109 / 237.403**	**140 / 270.715**	**Continuing**	**Continuing**

*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 2021 funding reflects the change in priority aligned with the National Defense Strategy. Reductions in the AGM-88E AARGM procurement begin in FY 2021 in order to invest in the AGM-88G AARGM-ER program. As a result of a reduction in quantity to the AGM-88E AARGM in FY21, the unit cost increases above inflation due to a smaller lot procurement.

AGM-88E AARGM FY 2021 funding supports the procurement of All Up Rounds (AURs), container modifications, support equipment, engineering and logistics support, contractor Other Production Support (OPS), Special Tooling/Special Test Equipment (ST/STE) and Diminishing Manufacturing Sources (DMS).

AGM-88G AARGM-ER funding supports the procurement of 24 Low Rate Initial Production missiles, Captive Air Training Missiles (CATMs), long lead components, containers, support equipment, engineering and logistics support, and Special Tooling/Special Test Equipment (ST/STE).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2327 / HARM Mods	**Modification Number / Title:** 1 / HARM Mods (AARGM)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:** 368	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,022.538	179.885	183.740	86.052	0.000	86.052	51.553	52.590	53.636	54.706	0.000	1,684.700
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,022.538	179.885	183.740	86.052	0.000	86.052	51.553	52.590	53.636	54.706	0.000	1,684.700
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,022.538**	**179.885**	**183.740**	**86.052**	**0.000**	**86.052**	**51.553**	**52.590**	**53.636**	**54.706**	**0.000**	**1,684.700**
(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 Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:
AARGM is an ACAT-1C acquisition program to upgrade the Legacy AGM-88 HARM missile with multi-mode/multi-spectral guidance and enhanced targeting. Full-Rate Production (FRP) decision was granted on 4 September 2012. FRP Lot 8 awarded July 29, 2019 and deliveries commence in April 2021.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2327 / HARM Mods	**Modification Number / Title:** 1 / HARM Mods (AARGM)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:** 368	
Models of Systems Affected: AGM-88E	**Modification Type:** Added Capability	**Related RDT&E PEs:** 0205601N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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												
Modification Item 1 of 1: HARM Mods (AARGM)												
A Kits												
Recurring												
1.1.1) ES010 AUR Installation Kits - Organic (1)	1,067 / 693.917	255 / 148.028	246 / 142.726	87 / 65.623	- / -	87 / 65.623	41 / 42.391	41 / 44.215	41 / 45.288	41 / 46.400	- / -	1,819 / 1,228.588
1.1.2) ES990 Training Equipment (CATMs) - Organic	120 / 84.853	1 / 0.581	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	121 / 85.434
Subtotal: Recurring	*- / 778.770*	*- / 148.609*	*- / 142.726*	*- / 65.623*	*- / -*	*- / 65.623*	*- / 42.391*	*- / 44.215*	*- / 45.288*	*- / 46.400*	*- / 0.000*	*- / 1,314.022*
Subtotal: HARM Mods (AARGM)	*1,187 / 778.770*	*256 / 148.609*	*246 / 142.726*	*87 / 65.623*	*- / -*	*87 / 65.623*	*41 / 42.391*	*41 / 44.215*	*41 / 45.288*	*41 / 46.400*	*- / -*	*1,940 / 1,314.022*
Subtotal: Procurement, All Modification Items	*- / 778.770*	*- / 148.609*	*- / 142.726*	*- / 65.623*	*- / -*	*- / 65.623*	*- / 42.391*	*- / 44.215*	*- / 45.288*	*- / 46.400*	*- / 0.000*	*- / 1,314.022*
Support *(All Modification Items)*												
2.1) ES960 Containers	595 / 7.954	127 / 0.589	123 / 0.540	44 / 0.215	- / -	44 / 0.215	20 / 0.099	20 / 0.101	20 / 0.103	20 / 0.105	- / -	969 / 9.706
2.2) Telemetry Sections (2)	46 / 13.149	23 / 7.500	40 / 13.250	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	109 / 33.899
2.3) ES970 Support Equipment (3)	- / 8.901	- / 0.200	- / 0.792	- / 0.792	- / -	- / 0.792	- / -	- / -	- / -	- / -	- / -	- / 10.685
2.4) ES700 Engineering Change Orders (4)	- / 32.642	- / 1.998	- / 3.126	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 37.766
2.5) ES930 Production Engineering Support (5)	- / 56.329	- / 6.854	- / 6.062	- / 5.335	- / -	- / 5.335	- / 3.221	- / 3.268	- / 3.323	- / 3.381	- / -	- / 87.773
2.6) Non-Recurring Engineering	- / 4.111	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.111
2.7) ES970 Integrated Logistics Support (6)	- / 19.853	- / 1.606	- / 1.331	- / 1.171	- / -	- / 1.171	- / 0.521	- / 0.548	- / 0.582	- / 0.625	- / -	- / 26.237
2.8) ES950 Other Production Support (7)	- / 66.077	- / 7.406	- / 8.018	- / 6.938	- / -	- / 6.938	- / 3.673	- / 3.126	- / 3.181	- / 3.236	- / -	- / 101.655
2.9) ES400 ST/STE for Production Facilitization (8)	- / 28.346	- / 5.023	- / 7.231	- / 5.297	- / -	- / 5.297	- / 1.259	- / 1.282	- / 1.159	- / 0.959	- / -	- / 50.556
2.10) ES260 Diminishing Manufacturing Sources (DMS) (9)	- / 6.406	- / 0.100	- / 0.664	- / 0.681	- / -	- / 0.681	- / 0.389	- / 0.050	- / -	- / -	- / -	- / 8.290
Subtotal: Support	*- / 243.768*	*- / 31.276*	*- / 41.014*	*- / 20.429*	*- / -*	*- / 20.429*	*- / 9.162*	*- / 8.375*	*- / 8.348*	*- / 8.306*	*- / 0.000*	*- / 370.678*
Installation												
Subtotal: Installation	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*
Total												
Total Cost (Procurement + Support + Installation)	**1,022.538**	**179.885**	**183.740**	**86.052**	**0.000**	**86.052**	**51.553**	**52.590**	**53.636**	**54.706**	**0.000**	**1,684.700**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2327 / HARM Mods	**Modification Number / Title:** 1 / HARM Mods (AARGM)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:** 368	

Modification Item 1 of 1: HARM Mods (AARGM)

Manufacturer Information

Manufacturer Name: Northrup Grumman Corporation Innovation Systems [10]	Manufacturer Location: Northridge, CA
Administrative Leadtime *(in Months)*: 8	Production Leadtime *(in Months)*: 22

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jul 2019	Feb 2020	Jun 2021	Jun 2022	Jun 2023	Jun 2024	Jun 2025
Delivery Dates	Apr 2021	Apr 2022	Apr 2023	Apr 2024	Apr 2025	Apr 2026	Apr 2027

Footnotes:

(1) Cost Element 1.1.1 AUR Installation kits budget reflects requirements and updates based on contract actuals, adjusting quantity and unit costs. Funding and Quantities begin to decrease in FY 2021 as the program invests in the AGM-88G AARGM-ER program. As a result of a reduction in quantity to the AGM-88E AARGM in FY21, the unit cost increases above inflation due to a smaller lot procurement.

(2) Cost Element 2.2 Telemetry Sections Funding is reduced in FY 2021 and out in order to invest in the AGM-88G AARGM-ER.

(3) Cost Element 2.3 Support equipment includes Common Munitions Bit/Reprogramming Equipment (CMBRE), unique support equipment, and radome covers.

(4) Cost Element 2.4 Engineering change orders (ECO) are used for the Cost Improvement Initiatives (CII), safety, and engineering change proposals (ECPs) to add capability, reduce missile cost and improve production. Funding is reduced in FY 2021 and out in order to invest in the AGM-88G AARGM-ER.

(5) Cost Element 2.5 Production Engineering Support (PES) reflect field activity requirements as stated in the approved FRP decision. Funding begins to decrease in FY 2021 as the program reduces quantities and transitions its support from the AGM-88E AARGM to the AGM-88G AARGM-ER.

(6) Cost Element 2.7 Integrated Logistics Support (ILS) budget line supports costs of maintenance, supply support, support equipment management, computer resources support, training and training support, ILS program management, and Packaging, Handling, Storage and Transportation (PHS&T). Funding begins to decrease in FY 2021 as the program reduces quantities and transitions its support from the AGM-88E AARGM to the AGM-88G AARGM-ER.

(7) Cost Element 2.8 Other Production Support (OPS) includes prime contractor production support and recurring fixed costs that are required per lot. Funding in FY 2021 and out has been reduced to reflect the transition of OPS costs to the AGM-88G AARGM-ER.

(8) Cost Element 2.9 Special Tooling/Special Test Equipment (ST/STE) for production facilitization includes rate tooling to meet production ramp each year as well as planning, building, installing, maintaining, calibrating, repairing and replacing of ST/STE and production equipment. Funding in FY 2021 and out has been adjusted to reflect the transition of costs to the AGM-88G AARGM-ER.

(9) Cost Element 2.10 Diminishing Manufacturing Sources (DMS) added to comply with Congressional direction, H.R. 933. DMS funding includes life-of-type buys due to obsolescence parts and components and other obsolescence issue resolutions. Funding in FY 2021 and out has been adjusted to reflect the transition of costs to the AGM-88G AARGM-ER.

(10) Orbital ATK renamed Northrop Grumman Corporation Innovation Systems.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2327 / HARM Mods	**Modification Number / Title:** 2 / HARM Mods (AARGM ER)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:** 607	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	61.520	0.000	61.520	76.665	140.325	183.767	216.009	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	61.520	0.000	61.520	76.665	140.325	183.767	216.009	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**61.520**	**0.000**	**61.520**	**76.665**	**140.325**	**183.767**	**216.009**	**Continuing**	**Continuing**
(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 Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Advanced Anti-Radiation Guided Missile Extended Range (AARGM ER) upgrade includes hardware and software improvements to AARGM's operational capabilities, including extended range, survivability, and effectiveness against complex, new and emerging threats. Planned Initial Operating Capability (IOC) is 4Q FY 2023. The AARGM ER Low Rate Initial Production 1 is expected to award in 3Q FY 2021 with expected deliveries beginning in 3Q FY 2023.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2327 / HARM Mods	**Modification Number / Title:** 2 / HARM Mods (AARGM ER)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:** 607	
Models of Systems Affected: AGM-88G	**Modification Type:** Added Capability	**Related RDT&E PEs:** 0205601N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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												
Modification Item 1 of 1: HARM Mods (AARGM ER)												
A Kits												
Recurring												
1.1.1) ES010 AGM-88G Installation Kits - Organic (11)	- / -	- / -	- / -	24 / 46.969	- / -	24 / 46.969	32 / 54.021	70 / 107.750	109 / 151.364	140 / 181.910	1,625 / 2,030.855	2,000 / 2,572.869
1.1.2) ES990 Training Equipment (CATMs) - Organic	- / -	- / -	- / -	6 / 8.752	- / -	6 / 8.752	6 / 7.810	6 / 6.069	6 / 5.528	7 / 6.073	69 / 58.479	100 / 92.711
1.1.3) ES040 Long Lead Components - Organic (12)	- / -	- / -	- / -	- / 1.206	- / -	- / 1.206	- / 1.556	- / 3.176	- / 4.912	- / 6.423	- / 69.203	- / 86.476
1.1.4) Long Lead Credit - Organic (13)	- / -	- / -	- / -	- / -	- / -	- / -	- / -1.206	- / -1.556	- / -3.176	- / -4.912	Continuing	Continuing
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / 56.927*	*- / -*	*- / 56.927*	*- / 62.181*	*- / 115.439*	*- / 158.628*	*- / 189.494*	*Continuing*	*Continuing*
Subtotal: HARM Mods (AARGM ER)	*- / -*	*- / -*	*- / -*	*30 / 56.927*	*- / -*	*30 / 56.927*	*38 / 62.181*	*76 / 115.439*	*115 / 158.628*	*147 / 189.494*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / 56.927*	*- / -*	*- / 56.927*	*- / 62.181*	*- / 115.439*	*- / 158.628*	*- / 189.494*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) ES960 Containers	- / -	- / -	- / -	30 / 0.900	- / -	30 / 0.900	38 / 1.162	76 / 2.371	115 / 3.667	147 / 4.795	1,694 / 60.016	2,100 / 72.911
2.2) ES995 Telemetry Sections (14)	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 5.593	8 / 4.356	22 / 8.852	120 / 51.817	162 / 70.618
2.3) ES940 Support Equipment (15)	- / -	- / -	- / -	- / 1.856	- / -	- / 1.856	- / 2.407	- / 1.472	- / 2.095	- / 2.679	- / 29.417	- / 39.926
2.4) ES700 Engineering Change Orders (16)	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.407	- / 2.985	- / 1.324	- / 93.414	- / 102.130
2.5) ES930 Production Engineering Support (17)	- / -	- / -	- / -	- / 0.575	- / -	- / 0.575	- / 0.975	- / 1.594	- / 4.247	- / 4.332	- / 33.604	- / 45.327
2.6) ES970 Integrated Logistics Support (18)	- / -	- / -	- / -	- / 0.618	- / -	- / 0.618	- / 1.478	- / 2.484	- / 0.592	- / 0.615	- / 8.110	- / 13.897
2.7) ES050 ST/STE for Production Facilitization (19)	- / -	- / -	- / -	- / 0.644	- / -	- / 0.644	- / 8.462	- / 6.965	- / 7.197	- / 3.918	- / 26.455	- / 53.641
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / 4.593*	*- / -*	*- / 4.593*	*- / 14.484*	*- / 24.886*	*- / 25.139*	*- / 26.515*	*- / 302.833*	*- / 398.450*
Installation												
Subtotal: Installation	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**61.520**	**0.000**	**61.520**	**76.665**	**140.325**	**183.767**	**216.009**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2327 / HARM Mods	**Modification Number / Title:** 2 / HARM Mods (AARGM ER)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:** 607	

Modification Item 1 of 1: HARM Mods (AARGM ER)

Manufacturer Information

Manufacturer Name: Northrup Grumman Innovation Systems	Manufacturer Location: Northridge, CA
Administrative Leadtime *(in Months)*: 8	Production Leadtime *(in Months)*: 22

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Jun 2021	Jun 2022	Jun 2023	Jun 2024	Jun 2025
Delivery Dates			Apr 2023	Apr 2024	Apr 2025	Apr 2026	Apr 2027

Footnotes:

(11) Cost Element 1.1.1 AGM-88G AARGM-ER Installation Kits include a modification kit that will improve AARGM's operational capabilities, including extended range, survivability and effectiveness against complex, new, and emerging threats. Unit cost is based on the Component Cost Position.

(12) Cost Element 1.1.3 Long lead component funds are required for the procurement of materials to include D6AC steel for production of rocket motor housings. The FY 2021 long lead procurement is for the FY 2022 lot buy.

(13) Cost Element 1.1.4 Long lead component funds are required for the procurement of materials to include D6AC steel for production of rocket motor housings. The FY 2022 long lead credits the FY2021 long lead procurement.

(14) Cost Element 2.2 Telemetry Sections provide the data required to assess flight testing and provide the flight termination capability required for range safety during live firings.

(15) Cost Element 2.3 Support equipment includes Common Munitions Bit/Reprogramming Equipment (CMBRE) and unique support equipment.

(16) Cost Element 2.4 Engineering change orders (ECO) are used for the Cost Improvement Initiatives (CII), safety, and engineering changes (ECPs) to reduce missile cost and improve producibility.

(17) Cost Element 2.5 Production Engineering Support (PES) reflect field activity requirements.

(18) Cost Element 2.6 Integrated Logistics Support (ILS) budget line supports costs of maintenance, supply support, support equipment management, computer resources support, training and training support, ILS program management, and Packaging, Handling, Storage and Transportation (PHS&T).

(19) Cost Element 2.7 Special Tooling/Special Test Equipment (ST/STE) funding is for production facilitization includes rate tooling to meet production ramp each year as well as planning, building, installing, maintaining, calibrating, repairing and replacing of ST/STE and production equipment. In addition, FY2021 includes the AARGM-ER shares of STE Calibration and Maintenance as part of the annual AARGM Production Contract bill. This is a shared bill with the USAF.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2356 / Standard Missiles Mods

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	19.893	0.000	2.500	83.654	0.000	83.654	150.821	163.944	212.758	351.708	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	19.893	0.000	2.500	83.654	0.000	83.654	150.821	163.944	212.758	351.708	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**19.893**	**0.000**	**2.500**	**83.654**	**0.000**	**83.654**	**150.821**	**163.944**	**212.758**	**351.708**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

SM-2 BLK IIIAZ: The DDG 1000 Standard Missile Program of record plan is to procure SM-2 Blk IIIAZ modifications to support deployment of DDG 1000 Class Ships. This line item provides funds to procure SM-2 modification kits to support DDG 1000 Program. Funding includes modification kit installation in SM-2 Blk IIIA rounds. SM-2 Blk IIIA AEGIS missiles require hardware and software changes to be compatible with the new (non-AEGIS) DDG 1000 radar, combat system, X-band link and interrupted continuous wave illumination. The July 2013 R3B (Resources, Requirements Review Board) set the requirement at 40. The addition of 14 kits in FY21 and 25 kits in FY22 is required due to insufficient SM-2 rounds for ZUMWALT Class ships load-out to support full operational capability. SM-2 BLKIIIAZ funding includes rounds and support costs.

SM-2 BLK IIIC: On 3 November 2017, SM-2 BLK IIIC was designated an accelerated acquisition Maritime Accelerated Capabilities Office (MACO) program by the CNO and ASN(RDA), enabling procurement of a SM-2 medium range active capability beginning in 2021. SM-2 BLK IIIC provides enhanced stream-raid performance against numerous threats via target resolution and missile/target pairing logic, over-the-horizon capability for increased depth of fire, enhanced capability against electronic attack and improved firepower due to decreased dependence on illuminators. Effort leverages to the maximum extent existing SM-2 inventory and common technology to provide an affordable mix of complimentary weapons to meet a broad range of mission requirements. The inventory objective is 1,000 units.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 3: Modification of Missiles	**P-1 Line Item Number / Title:** 2356 / Standard Missiles Mods

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Standard Missiles Mods	P-5a, P-21			- / 19.893	- / 0.000	- / 2.500	- / 83.654	- / 0.000	- / 83.654
P-40	**Total Gross/Weapon System Cost**				**- / 19.893**	**- / 0.000**	**- / 2.500**	**- / 83.654**	**- / 0.000**	**- / 83.654**

*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:

SM-2 BLKIIIC: The FY2021 budget provides $66.354M for 20 units and support for the first year of procurement for SM-2 BLKIIIC SM-2 medium range active capability. This program continues to be funded throughout the Future Years Defense Plan (FYDP).

SM-2 BLKIIIAZ: The FY2021 budget provides funding for an additional 14 kits and support in FY21 ($17.3M). This is required due to insufficient SM-2 rounds for ZUMWALT Class ships load-out to support full operational capability. SM-2 BLKIIIAZ funding includes rounds and support costs.

Cost Element 2.1.1/2.1.8: FK830 Production Engineering/Support: Provides field activity and contract production support for missile modification and delivery to include production engineering, design and analysis, quality and safety assurance, documentation, and production test support for SM-2 BLKIIIAZ and SM-2 BLKIIIC. SM-2 BLKIIIAZ funds support for unit production that initially ended in FY18 but restarted in FY21. SM-2 BLKIIIC production begins in FY21.

Cost Element 2.1.4: FK957 Containers: Funds procurement and support of the containers used to transport missile hardware from the component manufacturer to the missile All Up Round facility, and to return hardware from disassembled missiles to the component manufacturer for repair.

Cost Element 2.1.6/2.1.9: FK980 ILS/Fleet Documentation: Funds production of formal Fleet Firing Guidance and Fleet Handling Procedures with updates as required to reflect current doctrine, new missile variant capabilities and the changing threat. Also develops and updates the Capabilities and Liabilities (C&L) documentation as well as round requirement plans for delivery and on-load for AURs for firing events. SM-2 BLKIIIAZ funds support for unit production that initially ended in FY18 but restarted in FY21. SM-2 BLKIIIC production begins in FY21.

Cost Element 2.1.7: FK850 Diminishing Manufacturing Resources: Provides funding for production engineering and life-type buys for missile components that are, or will be, no longer available through the prime contractor sub-vendors. The increase from FY20 is due to the production start of SM-2 BLKIIIC in FY21.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2356 / Standard Missiles Mods	**Item Number / Title [DODIC]:** 1 / Standard Missiles Mods
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	19.893	0.000	2.500	83.654	0.000	83.654
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	19.893	0.000	2.500	83.654	0.000	83.654
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**19.893**	**0.000**	**2.500**	**83.654**	**0.000**	**83.654**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - HARDWARE Cost																		
Recurring Cost																		
1.1.1) FK007 SM-2 BLK IIIC(†)	-	-	-	-	-	-	-	-	-	2,349K	20	46.976	-	-	-	2,349K	20	46.976
1.1.2) FK007 SM-2 BLK IIIC CANISTERS(†)	-	-	-	-	-	-	-	-	-	164,000.00	20	3.280	-	-	-	164,000.00	20	3.280
1.1.3) FK007 SM-2 BLK IIIAZ MODIFICATION(†)	407,875.00	40	16.315	-	-	-	-	-	1.500	1,200K	14	16.800	-	-	-	1,200K	14	16.800
Subtotal: Recurring Cost	-	-	*16.315*	-	-	-	-	-	*1.500*	-	-	*67.056*	-	-	-	-	-	*67.056*
Subtotal: Hardware - HARDWARE Cost	**-**	**-**	***16.315***	**-**	**-**	**-**	**-**	**-**	***1.500***	**-**	**-**	***67.056***	**-**	**-**	**-**	**-**	**-**	***67.056***
Hardware - PRODUCTION Cost																		
Non Recurring Cost																		
2.1.1) FK830 SM-2 BLK IIIAZ PRODUCTION ENGINEERING/ SUPPORT	-	-	1.904	-	-	-	-	-	1.000	-	-	0.420	-	-	-	-	-	0.420
2.1.3) FK950 SM-2 TOOLS AND TEST EQUIPMENT	-	-	1.674	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.4) FK957 SM-2 CONTAINERS	-	-	-	-	-	-	-	-	-	-	-	0.565	-	-	-	-	-	0.565

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	P-1 Line Item Number / Title: 2356 / Standard Missiles Mods	Item Number / Title [DODIC]: 1 / Standard Missiles Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
2.1.6) FK980 SM-2 BLK IIIC ILS/FLEET DOCUMENTATION	-	-	-	-	-	-	-	-	-	-	-	0.510	-	-	-	-	-	0.510
2.1.7) FK850 DIMINISHING MANUFACTURING RESOURCES	-	-	-	-	-	-	-	-	-	-	-	8.283	-	-	-	-	-	8.283
2.1.8) FK830 SM-2 BLK IIIC PRODUCTION ENGINEERING/ SUPPORT	-	-	-	-	-	-	-	-	-	-	-	6.740	-	-	-	-	-	6.740
2.1.9) FK980 SM-2 BLK IIIAZ ILS/FLEET DOCUMENTATION	-	-	-	-	-	-	-	-	-	-	-	0.080	-	-	-	-	-	0.080
Subtotal: Non Recurring Cost	-	-	*3.578*	-	-	-	-	-	*1.000*	-	-	*16.598*	-	-	-	-	-	*16.598*
Subtotal: Hardware - PRODUCTION Cost	**-**	**-**	***3.578***	**-**	**-**	**-**	**-**	**-**	***1.000***	**-**	**-**	***16.598***	**-**	**-**	**-**	**-**	**-**	***16.598***
Gross/Weapon System Cost	**-**	**-**	**19.893**	**-**	**-**	**0.000**	**-**	**-**	**2.500**	**-**	**-**	**83.654**	**-**	**-**	**0.000**	**-**	**-**	**83.654**

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	P-1 Line Item Number / Title: 2356 / Standard Missiles Mods	Item Number / Title [DODIC]: 1 / Standard Missiles Mods

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) FK007 SM-2 BLK IIIC(†)		2021	Raytheon CO / Tucson AZ	SS / FPIF	NAVSEA	Mar 2021	Mar 2023	20	2,349K	Y		Jan 2018
1.1.2) FK007 SM-2 BLK IIIC CANISTERS		2021	TBD / TBD	SS / FP	NAVSEA	Oct 2020	Dec 2021	20	164,000.00	Y		
1.1.3) FK007 SM-2 BLK IIIAZ MODIFICATION(†)		2017	Raytheon CO / Tucson AZ	SS / FPIF	NAVSEA	Jun 2017	Jun 2020	15	418,133.33	Y		
1.1.3) FK007 SM-2 BLK IIIAZ MODIFICATION(†)		2018	Raytheon CO / Tucson AZ	SS / FPIF	NAVSEA	Dec 2018	Jun 2021	25	401,720.00	Y		
1.1.3) FK007 SM-2 BLK IIIAZ MODIFICATION(†)		2021	Raytheon CO / Tucson AZ	SS / FPIF	NAVSEA	Jun 2021	Dec 2023	14	1,200K	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2356 / Standard Missiles Mods	**Item Number / Title [DODIC]:** 1 / Standard Missiles Mods

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
										Calendar Year 2017												Calendar Year 2018									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FK007 SM-2 BLK IIIC																															
	1	2021	NAVY	20	0	20																									20
1.1.3) FK007 SM-2 BLK IIIAZ MODIFICATION																															
	2	2017	NAVY	15	0	15									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
	2	2018	NAVY	25	0	25																									25
	2	2021	NAVY	14	0	14																									14
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3 | **P-1 Line Item Number / Title:** 2356 / Standard Missiles Mods | **Item Number / Title [DODIC]:** 1 / Standard Missiles Mods

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FK007 SM-2 BLK IIIC																															
	1	2021	NAVY	20	0	20																									20
1.1.3) FK007 SM-2 BLK IIIAZ MODIFICATION																															
	2	2017	NAVY	15	0	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1		11
	2	2018	NAVY	25	0	25			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		25
	2	2021	NAVY	14	0	14																									14
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3 | **P-1 Line Item Number / Title:** 2356 / Standard Missiles Mods | **Item Number / Title [DODIC]:** 1 / Standard Missiles Mods

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
										Calendar Year 2021												Calendar Year 2022									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FK007 SM-2 BLK IIIC																															
	1	2021	NAVY	20	0	20						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
1.1.3) FK007 SM-2 BLK IIIAZ MODIFICATION																															
	2	2017	NAVY	15	4	11	1	1	2	1	1	2	1	2																	0
	2	2018	NAVY	25	0	25	-	-	-	-	-	-	-	-	1	1	2	2	2	3	2	2	3	2	2	3					0
	2	2021	NAVY	14	0	14									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3 | **P-1 Line Item Number / Title:** 2356 / Standard Missiles Mods | **Item Number / Title [DODIC]:** 1 / Standard Missiles Mods

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
							Calendar Year 2023												Calendar Year 2024												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FK007 SM-2 BLK IIIC																															
	1	2021	NAVY	20	0	20	-	-	-	-	-	2	2	1	2	2	1	2	2	1	2	2	1								0
1.1.3) FK007 SM-2 BLK IIIAZ MODIFICATION																															
	2	2017	NAVY	15	15	0																									0
	2	2018	NAVY	25	25	0																									0
	2	2021	NAVY	14	0	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	2	1	1	1	3
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3 | **P-1 Line Item Number / Title:** 2356 / Standard Missiles Mods | **Item Number / Title [DODIC]:** 1 / Standard Missiles Mods

Cost Elements (Units in Each)							Fiscal Year 2025												Fiscal Year 2026												BALANCE
										Calendar Year 2025												Calendar Year 2026									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2024	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) FK007 SM-2 BLK IIIC																															
	1	2021	NAVY	20	20	0																									0
1.1.3) FK007 SM-2 BLK IIIAZ MODIFICATION																															
	2	2017	NAVY	15	15	0																									0
	2	2018	NAVY	25	25	0																									0
	2	2021	NAVY	14	11	3	2	1																							0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 3	**P-1 Line Item Number / Title:** 2356 / Standard Missiles Mods	**Item Number / Title [DODIC]:** 1 / Standard Missiles Mods

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 CO - Tucson AZ	20	20	100	3	3	24	27	3	3	24	27
2	Raytheon CO - Tucson AZ	7	50	75	3	3	36	39	3	3	30	33

"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 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 4: Support Equipment & Facilities	**P-1 Line Item Number / Title:** 2420 / Weapons Industrial Facilities

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	339.639	12.006	12.006	1.996	0.000	1.996	2.039	2.080	2.122	2.164	-	374.052
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	339.639	12.006	12.006	1.996	0.000	1.996	2.039	2.080	2.122	2.164	-	374.052
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**339.639**	**12.006**	**12.006**	**1.996**	**0.000**	**1.996**	**2.039**	**2.080**	**2.122**	**2.164**	**-**	**374.052**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Weapons Industrial Facility (WIF) program supports the following NAVSEA Government-Owned Contractor Operated (GOCO) facilities; the active Naval Industrial Reserve Ordnance Plant (NIROP) Allegany Ballistics Laboratory (ABL), Rocket Center, WV, and inactive Naval Weapons Industrial Reserve Plant (NWIRP), Bedford, MA. The budget provides funding for NIROP ABL to recapitalize aging plant infrastructure; enable process improvement to reduce life cycle cost for manufacturing and production of weapon systems; resolve life, safety, and environmental issues; and enact immediate operational support of National Security needs. Capital-type rehabilitation projects at NIROP ABL support weapon systems such as Rolling Airframe Missile (RAM), Evolved Sea Sparrow Missile (ESSM), AIM-9X Sidewinder Missile, AIM-9M Sidewinder Missile, FMU-143 Penetrating Bomb Fuze System, Hellfire Missile, Guided Multiple-Launch Rocket System (GMLRS), Tomahawk GG and Trident GG.

[P5 / FU002 Capital Type Rehabilitation]: This program funds projects that eliminate environmental and safety deficiencies in compliance with local, state, and federal OSHA regulations. These regulations mandate requirements, which must be met if plant shuts down in order to avoid criminal liability, and severe financial penalties. The program also includes critical upgrades to maintain high liability areas such as fire and security systems, roofs, boilers, electrical distribution systems, bridge crane systems, and other structural repairs essential to maintain the industrial integrity of the plant.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 4: Support Equipment & Facilities	**P-1 Line Item Number / Title:** 2420 / Weapons Industrial Facilities	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Weapons Industrial Facilities				- / 339.639	- / 12.006	- / 12.006	- / 1.996	- / 0.000	- / 1.996
P-40	**Total Gross/Weapon System Cost**				**- / 339.639**	**- / 12.006**	**- / 12.006**	**- / 1.996**	**- / 0.000**	**- / 1.996**

*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:

Funding for FY21 to support: 1) Automated Guided Vehicle (AGV) to replace energetic moving equipment that is near end of life. Equipment is used to move energetics mixing bowls to support mix/cast operations for rocket motor and warhead manufacture, 2) Surface Mount Technology Equipment: Replacement for surface mount machines that are near end of life. Machines are used to manufacture parts for fuzes and detonators for missiles and warheads, 3) Heat Treat System for improved quality and throughput of projectile manufacturing and 4) Nylon Molding Equipment that will provide the technology for greater precision and throughput in the molding process. Existing equipment is nearing the end of its useful life.

Funding is required to address critical infrastructure issues. The plants have an average age of 45 years and lack of proper maintenance will limit capabilities to maintain scheduled production rates and overall productivity. Funding for FY20 will replace the Power Substation and industrial equipment associated with energetics production and manufacturing for various product lines.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 4	**P-1 Line Item Number / Title:** 2420 / Weapons Industrial Facilities	**Item Number / Title [DODIC]:** 1 / Weapons Industrial Facilities
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	339.639	12.006	12.006	1.996	0.000	1.996
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	339.639	12.006	12.006	1.996	0.000	1.996
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**339.639**	**12.006**	**12.006**	**1.996**	**0.000**	**1.996**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Support Cost																		
1.1) FU002 Capital Type Rehabilitation	-	-	27.494	-	-	12.006	-	-	12.006	-	-	1.996	-	-	-	-	-	1.996
Subtotal: Support Cost	**-**	**-**	***27.494***	**-**	**-**	***12.006***	**-**	**-**	***12.006***	**-**	**-**	***1.996***	**-**	**-**	**-**	**-**	**-**	***1.996***
Support - Facilities Restoration Cost																		
2.1) FUCA1 Facilities Restoration (ABL)	-	-	216.205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Facilities Restoration Cost	**-**	**-**	***216.205***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - Government-Owned Contractor Operated (GOCO) Fac Cost																		
3.1) FU020 NWIRP MCGREGOR	-	-	95.940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Government-Owned Contractor Operated (GOCO) Fac Cost	**-**	**-**	***95.940***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**-**	**-**	**339.639**	**-**	**-**	**12.006**	**-**	**-**	**12.006**	**-**	**-**	**1.996**	**-**	**-**	**0.000**	**-**	**-**	**1.996**

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 4: Support Equipment & Facilities	**P-1 Line Item Number / Title:** 2433 / Fleet Satellite Comm Follow-On

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0303109N, 1203109N
Line Item MDAP/MAIS Code: 345		

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	2,140.281	60.279	63.080	53.401	0.000	53.401	0.000	0.000	0.000	0.000	-	2,317.041
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	2,140.281	60.279	63.080	53.401	0.000	53.401	0.000	0.000	0.000	0.000	-	2,317.041
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**2,140.281**	**60.279**	**63.080**	**53.401**	**0.000**	**53.401**	**0.000**	**0.000**	**0.000**	**0.000**	**-**	**2,317.041**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Starting in FY22 funding for the MUOS program has been transferred to the United States Space Force.

The Mobile User Objective System (MUOS) provides a worldwide, multi-service population of mobile and fixed-site terminal users with ultra-high frequency (UHF), narrowband, and beyond line-of-sight satellite communications (SATCOM).

MUOS significantly increases performance and capacity in support of critical Combatant Command SATCOM priorities. MUOS is the replacement system for the UHF Follow-on (UFO) system, which is currently beyond its design life. MUOS consists of Space, Ground, and User Entry Segments.

The Space Segment consists of 5 geosynchronous satellites, one of which is an on-orbit spare, and provides both a legacy UHF payload, which is backward compatible with UFO, and a Wideband Code Division Multiple Access (WCDMA) payload, which provides 3G cellular-like capability.

The cost for MUOS Ground Segment upgrades varies depending on the complexity of software defects being addressed and unique configuration of hardware and software requirements being fielded at each of the 6 MUOS ground sites within each given year. The MUOS Ground Segment upgrades address cybersecurity and lifecycle management issues at each of the 6 MUOS ground sites.

The Ground Segment or System consists of four world-wide Radio Access Facilities (RAFs) (Wahiawa, Hawaii; Northwest Chesapeake, Virginia; Niscemi, Italy; and Geraldton, Australia) and two Satellite Control Facilities (Port Hueneme, California and Schriever Air Force Base (AFB), Colorado). Each RAF includes three 60 ft. antennas, and over 50 equipment racks which house a total of 5,000 major hardware components and 250 software applications across the MUOS Program. The RAF in Hawaii includes a Network Management Facility (NMF). The RAFs in Hawaii and Virginia each include a Switching Facility (SF). All four RAFs and two Satellite Control Facilities are considered Ground Sites.

The User Entry Segment consists of the MUOS waveform that is ultimately integrated into MUOS-capable terminals. The MUOS legacy capability has been in operational use since 2012, and the WCDMA capability transitioned to Early Combatant Command Use in July 2016.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 4: Support Equipment & Facilities	**P-1 Line Item Number / Title:** 2433 / Fleet Satellite Comm Follow-On	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0303109N, 1203109N
Line Item MDAP/MAIS Code: 345		

In addition to providing UHF SATCOM for the Department of Defense (DoD), the Navy has the overall responsibility to deliver the end-to-end (E2E) MUOS capability to the warfighter. This responsibility involves systems engineering, integration, and test management of all MUOS system of system activities, to include the integration of the MUOS waveform into MUOS-capable terminals and the subsequent terminal certification testing.

Based on the results of the Multi-Service Operational Test and Evaluation-2 (MOT&E-2) in June 2016, Director, Operational Test & Evaluation (DOT&E) assessed MUOS not operationally effective or suitable. As a result, the program addressed the findings and prepared for MOT&E-2B in FY19 and Full Operational Capability (FOC) in FY20. MOT&E-2B started in May 2019 and completed in August 2019. Navy declared MUOS Full Operational Capability October 2019.

Beginning in FY17, MUOS's focus has been upgrading all four Radio Access Facilities and two Satellite Control Facilities to address ongoing cybersecurity threats, hardware and software obsolescence, and operational deficiency issues.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 4: Support Equipment & Facilities	**P-1 Line Item Number / Title:** 2433 / Fleet Satellite Comm Follow-On

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303109N, 1203109N

Line Item MDAP/MAIS Code: 345

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / Fleet Satellite Comm Follow-On				- / 2,140.281	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	1 / MUOS Upgrade (TBD)				- / 0.000	- / 60.279	- / 63.080	- / 53.401	- / 0.000	- / 53.401
P-40	**Total Gross/Weapon System Cost**				**- / 2,140.281**	**- / 60.279**	**- / 63.080**	**- / 53.401**	**- / 0.000**	**- / 53.401**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	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-5	1 / Fleet Satellite Comm Follow-On				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / MUOS Upgrade (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 176.760
P-40	**Total Gross/Weapon System Cost**				**- / 0.000**	**- / 0.000**	**- / 0.000**	**- / 0.000**	**- / -**	**- / 2,317.041**

*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:

FY21 funding will address obsolescence and cybersecurity vulnerabilities within the MUOS Ground Segment as the system transitions to Full Operational Capability. Starting in FY22 funding for the MUOS program has been transferred to the United States Space Force.

In FY21, 75% of the hardware (HW) and 68% of the software (SW) will be obsolete, based on current funding levels. Emerging cybersecurity threats and increasing cybersecurity requirements have resulted in a high number of category I/II cybersecurity vulnerabilities, many of which are directly attributable to obsolescence. Denial of service threats against UHF SATCOM systems have evolved over the past 10 years and continue to proliferate in the Ultra High Frequency (UHF) spectrum. Implementing Electromagnetic Interference (EMI) mitigations in the MUOS Ground System will ensure the system meets its capacity and link availability requirements.

Ground System updates across the FYDP include HW and SW procurements to correct HW/SW deficiencies. Funding is for 3 Technical Insertion Upgrades and 2 Hardware Obsolescence Upgrade Kits for each of the six ground sites in each fiscal year through the FYDP. The Technical Insertion Upgrades are part of a phased software upgrade. The software is installed into the hardware housed at each ground site as part of the operational end item requirements of MUOS. The defect resolution deployment addresses ground system defects which includes associated engineering, integration, test and delivery efforts to address cybersecurity vulnerabilities, and correct issues to ensure readiness levels support the warfighter narrowband SATCOM requirements. The Hardware Obsolescence Upgrade Kits address ground system defect resolution as well as HW degradation. Obsolete items will be replaced in phases in each fiscal year and can include DSN Gateway, High Assurance Internet Protocol Encryptors (HAIPE), and back up tape drives/storage arrays.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 4	P-1 Line Item Number / Title: 2433 / Fleet Satellite Comm Follow-On	Item Number / Title [DODIC]: 1 / Fleet Satellite Comm Follow-On
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	2,140.281	0.000	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	2,140.281	0.000	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**2,140.281**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Ground System Updates	-	-	204.092	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*204.092*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Non Recurring Cost																		
1.2.1) Advance Procurement Prior Years (FY2001-2010)	-	-	118.858	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.2.2) Satellite Procurement (MUOS)	300,796.667	3	902.390	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*1,021.248*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway Cost	**-**	**-**	***1,225.340***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware Cost																		
Non Recurring Cost																		
2.1.1) EELV Launch Vehicles (MUOS)	147,092.800	5	735.464	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*735.464*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware Cost	**-**	**-**	***735.464***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support Cost																		
3.1) EELV Launch Vehicle Production	-	-	37.345	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
3.2) Satellite Production	-	-	142.132	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 4	**P-1 Line Item Number / Title:** 2433 / Fleet Satellite Comm Follow-On	**Item Number / Title [DODIC]:** 1 / Fleet Satellite Comm Follow-On
ID Code (A=Service Ready, B=Not Service Ready) :	**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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Support Cost	-	-	*179.477*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Gross/Weapon System Cost	-	-	2,140.281	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 4	**P-1 Line Item Number / Title:** 2433 / Fleet Satellite Comm Follow-On	**Modification Number / Title:** 1 / MUOS Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	60.279	63.080	53.401	0.000	53.401	0.000	0.000	0.000	0.000	0.000	176.760
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	60.279	63.080	53.401	0.000	53.401	0.000	0.000	0.000	0.000	0.000	176.760
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**60.279**	**63.080**	**53.401**	**0.000**	**53.401**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**176.760**
(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 Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Ground Upgrade Modification kits to correct functional and CYBER defects and address HW/SW obsolescence.

[MUOS Technical Insertion Upgrades] Funding is for 3 defect resolution deployments for the 6 Ground sites in each fiscal year throughout the FYDP. The software upgrades are part of a phased technical insertion. The technical insertion is installed into the hardware housed at each ground site as part of the operational end item requirements of MUOS. The defect resolution deployment addresses ground system defects which includes associated engineering, integration, test and delivery efforts to address cybersecurity vulnerabilities, and correct issues to ensure readiness levels support the warfighter narrowband SATCOM requirements.

[MUOS Upgrade Mod Kits] Funding is for 2 Upgrade Mod Kit deployments for the 6 Ground sites in each fiscal year throughout the FYDP. Production upgrades of MUOS Mod Kits include defect resolution as well as addressing HW/SW obsolescence issues. Obsolete items being replaced in each fiscal year include DSN Gateway, High Assurance Internet Protocol Encryptors (HAIPE), back up tape drives/storage arrays, and Electromagnetic Interference (EMI) mitigation equipment.

[Tech Refresh] Funding is for engineering analysis of obsolete hardware and software required to determine the necessary upgrade options for HW/SW. Integration and testing of the upgrade options are being done to address system deficiencies.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 4	**P-1 Line Item Number / Title:** 2433 / Fleet Satellite Comm Follow-On	**Modification Number / Title:** 1 / MUOS Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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												
Modification Item 1 of 1: MUOS Upgrade												
B Kits												
Recurring												
1.1.1) MUOS Technical Insertion Upgrades - NonOrganic (1)	- / -	18 / 19.691	18 / 19.072	18 / 14.658	- / -	18 / 14.658	- / -	- / -	- / -	- / -	- / -	54 / 53.421
1.1.2) MUOS Upgrade Mod Kits - NonOrganic (2)	- / -	12 / 30.336	12 / 34.077	12 / 31.112	- / -	12 / 31.112	- / -	- / -	- / -	- / -	- / -	36 / 95.525
Subtotal: Recurring	*- / 0.000*	*- / 50.027*	*- / 53.149*	*- / 45.770*	*- / -*	*- / 45.770*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 148.946*
Subtotal: MUOS Upgrade	*- / -*	*30 / 50.027*	*30 / 53.149*	*30 / 45.770*	*- / -*	*30 / 45.770*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*90 / 148.946*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / 50.027*	*- / 53.149*	*- / 45.770*	*- / -*	*- / 45.770*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 148.946*
Support *(All Modification Items)*												
2.1) Tech Refresh	- / 0.000	- / 6.987	- / 6.768	- / 5.201	- / 0.000	- / 5.201	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 18.956
Subtotal: Support	*- / 0.000*	*- / 6.987*	*- / 6.768*	*- / 5.201*	*- / -*	*- / 5.201*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 18.956*
Installation												
Modification Item 1 of 1: MUOS Upgrade	- / 0.000	- / 3.265	- / 3.163	- / 2.430	- / 0.000	- / 2.430	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.858
Subtotal: Installation	*- / 0.000*	*- / 3.265*	*- / 3.163*	*- / 2.430*	*- / -*	*- / 2.430*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 8.858*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**60.279**	**63.080**	**53.401**	**0.000**	**53.401**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**176.760**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 4	**P-1 Line Item Number / Title:** 2433 / Fleet Satellite Comm Follow-On	**Modification Number / Title:** 1 / MUOS Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: MUOS Upgrade

Manufacturer Information

Manufacturer Name: Lockheed Martin Space Systems Company — Manufacturer Location: Sunnyvale, CA

Administrative Leadtime *(in Months)*: 1 — Production Leadtime *(in Months)*: 2

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Nov 2018						
Delivery Dates	Jan 2019						

Manufacturer Name: General Dynamics — Manufacturer Location: Scottsdale, AZ

Administrative Leadtime *(in Months)*: 1 — Production Leadtime *(in Months)*: 2

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Nov 2019	Nov 2020				
Delivery Dates		Jan 2020	Jan 2021				

Installation Information

Method of Implementation: Method:: Installation Name: MUOS UPGRADE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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 2019	- / -	30 / 3.265	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	30 / 3.265
FY 2020	- / -	- / -	30 / 3.163	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	30 / 3.163
FY 2021	- / -	- / -	- / -	30 / 2.430	0 / 0.000	30 / 2.430	- / -	- / -	- / -	- / -	0 / 0.000	30 / 2.430
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	30 / 3.265	30 / 3.163	30 / 2.430	0 / 0.000	30 / 2.430	- / -	- / -	- / -	- / -	0 / 0.000	90 / 8.858

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	-	-	10	10	10	-	10	10	10	-	10	10	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90
Out	-	-	10	10	10	-	10	10	10	-	10	10	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 4	**P-1 Line Item Number / Title:** 2433 / Fleet Satellite Comm Follow-On	**Modification Number / Title:** 1 / MUOS Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Footnotes:

(1) 1. For the MUOS Technical Insertion Upgrades, the quantity represents 6 MUOS ground sites which will each receive 3 MUOS Technical Insertion Upgrades for a total of 18. The 6 ground sites receiving upgrades across the FYDP are Wahiawa, HI; Northwest Chesapeake, VA; Niscemi, IT; Geraldton, AU; Port Hueneme, CA; and Schriever AFB, CO. 2. For the MUOS Technical Insertion Upgrades, the unit cost varies each fiscal year due to the unique configuration of hardware and software requirements needed to address cybersecurity and lifecycle management issues at each of the 6 ground sites.

(2) 1. For the MUOS Upgrade Mod Kits, the quantity represents 6 MUOS ground sites which will each receive 2 MUOS Upgrade mod Kits for a total of 12. The 6 ground sites receiving upgrades across the FYDP are Wahiawa, HI; Northwest Chesapeake, VA; Niscemi, IT; Geraldton, AU; Port Hueneme, CA; and Schriever AFB, CO. 2. For the MUOS Upgrade Mod Kits, the unit cost varies each fiscal year due to the unique configuration of hardware and software requirements needed to address cybersecurity and lifecycle management issues at each of the 6 ground sites.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 5: Ordnance Support Equipment	**P-1 Line Item Number / Title:** 2500 / Ordnance Support Equipment

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	442.723	62.008	85.717	215.659	0.000	215.659	217.108	197.406	339.086	425.141	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	442.723	62.008	85.717	215.659	0.000	215.659	217.108	197.406	339.086	425.141	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**442.723**	**62.008**	**85.717**	**215.659**	**0.000**	**215.659**	**217.108**	**197.406**	**339.086**	**425.141**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 02: Other Missiles / BSA 5: Ordnance Support Equipment	**P-1 Line Item Number / Title:** 2500 / Ordnance Support Equipment

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Ordnance Support Equipment				- / 442.723	- / 62.008	- / 85.717	- / 215.659	- / -	- / 215.659
P-40	**Total Gross/Weapon System Cost**				**- / 442.723**	**- / 62.008**	**- / 85.717**	**- / 215.659**	**- / 0.000**	**- / 215.659**

*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.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 02 / 5	**P-1 Line Item Number / Title:** 2500 / Ordnance Support Equipment	**Aggregated Items Title:** Ordnance Support Equipment (1)

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) Ordnance Support Equipment																				
1) Classified	A		-	-	442.723	-	-	62.008	-	-	85.717	-	-	215.659	-	-	-	-	-	215.659
Subtotal: 1) Ordnance Support Equipment			**-**	**-**	***442.723***	**-**	**-**	***62.008***	**-**	**-**	***85.717***	**-**	**-**	***215.659***	**-**	**-**	**-**	**-**	**-**	***215.659***
Total			**-**	**-**	**442.723**	**-**	**-**	**62.008**	**-**	**-**	**85.717**	**-**	**-**	**215.659**	**-**	**-**	**-**	**-**	**-**	**215.659**

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

Footnotes:

(1) Additional details with respect to this line item are held at a higher classification. This line item 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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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 1: Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3113 / Surface Ship Torpedo Def (SSTD)

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603506N, 0204228N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	40.005	6.353	5.561	5.811	0.000	5.811	5.573	5.403	5.498	5.601	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	40.005	6.353	5.561	5.811	0.000	5.811	5.573	5.403	5.498	5.601	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**40.005**	**6.353**	**5.561**	**5.811**	**0.000**	**5.811**	**5.573**	**5.403**	**5.498**	**5.601**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY 2021 WPN provides continuation of Surface Ship Torpedo Defense (SSTD) which provides a layered defense capability to protect surface ships. The WPN appropriation is comprised of SSTD which includes Acoustic Device Countermeasures (ADCs) and Countermeasure Anti-Torpedo (CAT). The CAT provides canisterized Anti-Torpedo (ATT). The SSTD WPN account currently procures surface ship ADCs. The ADC is a 3-inch expendable torpedo countermeasure (CM) that provides an over-the-side soft-kill defense against threat torpedoes. A new contract award in FY 2021 for ADC contract will require start-up funding for Non-Recurring Engineering (NRE) labor and material to address obsolescence and vendor qualifications. WPN funding will continue to provide new devices to meet fleet inventory requirements as identified in Naval Munitions Requirements Process (NMRP) necessary to equip identified surface ships and to replace expiring devices. WPN funding will also continue procurement and installation of ready service and deep storage lockers to provide adequate storage for ADCs on surface ships with countermeasure allowance. Additionally, the funding will also provide for the development of lockers for the CG and CVN classes of ships.

TD010 - ADC HARDWARE: Procures surface ship ADCs. Quantity requirements determined by NMRP and shelf life of older units (reaching end of life). These requirements vary by ship type, location and operational posture.

TD020 - ADC READY STOWAGE LOCKER: Procure and install ready service and deep storage lockers to hold ADCs on surface ships.

TD830 - PRODUCTION ENGINEERING - In House: Funding provides specification preparation and validation, government prepared production acceptance procedures, production planning, Integrated Logistics Support (ILS) planning, coordination of government furnished information (GFI) and government furnished equipment (GFE), contract deliverable monitoring and prime contractor monitoring of cost/schedule performance. Also provides in-service engineering agent (ISEA) and technical direction agent (TDA) support for ADCs on surface ships.

TD900 - CONSULTING SERVICES: Funding under this cost code provides fair share of contractor support to the program office, including program, financial, acquisition, contract, administration and engineering management support.

TD905 - PRODUCTION ENGINEERING CONTRACTOR: Funding under this cost code provides for production engineering tasks performed by the hardware contractor.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 1: Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3113 / Surface Ship Torpedo Def (SSTD)	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603506N, 0204228N
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Surface Ship Torpedo Def (SSTD)	P-5a			- / 40.005	- / 6.353	- / 5.561	- / 5.811	- / 0.000	- / 5.811
P-40	**Total Gross/Weapon System Cost**				**- / 40.005**	**- / 6.353**	**- / 5.561**	**- / 5.811**	**- / 0.000**	**- / 5.811**

*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 2021 funding procures surface ship Acoustic Device Countermeasures (ADC), ready stowage lockers, production engineering and contractor support services.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	**P-1 Line Item Number / Title:** 3113 / Surface Ship Torpedo Def (SSTD)	**Item Number / Title [DODIC]:** 1 / Surface Ship Torpedo Def (SSTD)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	40.005	6.353	5.561	5.811	0.000	5.811
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	40.005	6.353	5.561	5.811	0.000	5.811
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**40.005**	**6.353**	**5.561**	**5.811**	**0.000**	**5.811**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) TD010 ADC(†) (1)	7,613.22	4,023	30.628	5,784.58	679	3.928	5,900.87	697	4.113	6,012.59	397	2.387	-	-	-	6,012.59	397	2.387
1.1.2) TD020 Ready Stowage Locker(†)	130,000.00	6	0.780	132,428.57	14	1.854	135,119.49	9	1.216	137,821.88	7	0.965	-	-	-	137,821.88	7	0.965
Subtotal: Recurring Cost	-	-	*31.408*	-	-	*5.782*	-	-	*5.329*	-	-	*3.352*	-	-	-	-	-	*3.352*
Non Recurring Cost																		
1.2.1) TD010 ADC Non Recurring Costs (2)	-	-	1.800	-	-	-	-	-	-	-	-	2.202	-	-	-	-	-	2.202
1.2.2) TD020 Ready Stow Lockers	-	-	1.200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*3.000*	-	-	-	-	-	-	-	-	*2.202*	-	-	-	-	-	*2.202*
Subtotal: Hardware Cost	**-**	**-**	***34.408***	**-**	**-**	***5.782***	**-**	**-**	***5.329***	**-**	**-**	***5.554***	**-**	**-**	**-**	**-**	**-**	***5.554***
Support Cost																		
2.1) TD830 PRODUCTION ENGINEERING IN-HOUSE	-	-	4.141	-	-	0.307	-	-	0.107	-	-	0.068	-	-	-	-	-	0.068
2.2) TD905 PRODUCTION ENG--CONTRACTOR	-	-	0.621	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	P-1 Line Item Number / Title: 3113 / Surface Ship Torpedo Def (SSTD)	Item Number / Title [DODIC]: 1 / Surface Ship Torpedo Def (SSTD)
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
2.3) TD900 CONSULTING SERVICES	-	-	0.835	-	-	0.264	-	-	0.125	-	-	0.189	-	-	-	-	-	0.189
Subtotal: Support Cost	**-**	**-**	***5.597***	**-**	**-**	***0.571***	**-**	**-**	***0.232***	**-**	**-**	***0.257***	**-**	**-**	**-**	**-**	**-**	***0.257***
Gross/Weapon System Cost	**-**	**-**	**40.005**	**-**	**-**	**6.353**	**-**	**-**	**5.561**	**-**	**-**	**5.811**	**-**	**-**	**0.000**	**-**	**-**	**5.811**

(†) indicates the presence of a P-5a

Footnotes:

(1) The increase in APUC by 6.5% is the historical amount that has been added to the unit price to cover the contract service fees, engineering, and logistic efforts. ECP labor and materials cost are also embedded in the unit price.

(2) In FY 2021, follow on contract is awarded and startup for NRE labor and materials are funded.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	P-1 Line Item Number / Title: 3113 / Surface Ship Torpedo Def (SSTD)	Item Number / Title [DODIC]: 1 / Surface Ship Torpedo Def (SSTD)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) TD010 ADC		2016	ULTRA / Braintree, MA	C / FFP	NUWC Keyport WA	Jul 2016	Jul 2017	325	5,658.46	Y		
1.1.1) TD010 ADC		2017	ULTRA / Braintree, MA	C / FFP	NUWC Keyport WA	May 2017	Nov 2017	701	5,689.02	Y		
1.1.1) TD010 ADC		2018	ULTRA / Braintree, MA	C / FFP	NUWC Keyport WA	Jun 2018	Dec 2018	696	5,676.72	Y		
1.1.1) TD010 ADC		2019	ULTRA / Braintree, MA	C / FFP	NUWC Keyport WA	May 2019	May 2020	679	5,784.58	Y		
1.1.1) TD010 ADC		2020	ULTRA / Braintree, MA	C / FFP	NUWC Keyport WA	May 2020	May 2021	697	5,900.87	Y		
1.1.1) TD010 ADC		2021	TBD / TBD	C / FFP	NUWC Keyport WA	May 2021	May 2022	397	6,012.59	Y		
1.1.2) TD020 Ready Stowage Locker		2018	Delphinus / Norfolk, VA	C / CPIF	NSWC Philadelphia	Jun 2018	Jun 2019	6	130,000.00	Y		
1.1.2) TD020 Ready Stowage Locker		2019	Delphinus / Norfolk, VA	C / CPIF	NSWC Philadelphia	May 2019	May 2020	14	132,428.57	Y		
1.1.2) TD020 Ready Stowage Locker		2020	Delphinus / Norfolk, VA	C / CPIF	NSWC Philadelphia	May 2020	May 2021	9	135,119.49	Y		
1.1.2) TD020 Ready Stowage Locker		2021	TBD / TBD	C / CPIF	NSWC Philadelphia	May 2021	May 2022	7	137,821.88	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 1: Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3117 / MK-48 Torpedo

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	67	53	71	110	-	110	51	51	65	83	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	185.398	103.616	130.000	284.901	0.000	284.901	146.690	152.772	197.749	236.302	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	185.398	103.616	130.000	284.901	0.000	284.901	146.690	152.772	197.749	236.302	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**185.398**	**103.616**	**130.000**	**284.901**	**0.000**	**284.901**	**146.690**	**152.772**	**197.749**	**236.302**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	2,767K	1,955K	1,831K	2,590K	-	2,590K	2,876K	2,996K	3,042K	2,847K	Continuing	Continuing

Description:

The MK 48 Mod 7 Heavyweight Torpedo is the U.S. Navy's submarine launched Anti-Submarine Warfare (ASW) and primary Anti-Surface Warfare (ASuW) weapon. Procurements will increase warshot inventory available prior to Major Combat Operations. Heavyweight Torpedo provides the submarine force with an effective weapon against threat submarines and surface combatants to assist in achieving Sea Control and neutralizing or destroying threats to high value vessels. Torpedoes are the only proven weapon system that provides Navy control from sea bed to sea surface.

[P5 / G5001 - MK48 MOD 7 Hardware]: Funding under this cost code supports the award and execution of two competitive contracts for procurement of the MK48 Mod 7 Torpedo Guidance and Control and Afterbody Tail Cone Sections, production test equipment upgrades, engineering change proposals, and non-recurring engineering to resolve production issues including obsolescence. Nonrecurring Engineering (NRE) funds base contract year technology refresh due to obsolescence issues. NRE funds production of Proof of Manufacturing (POM) units, first article testing, tooling, test equipment, procurement of technical data package updates, and start-up costs for production contractors. Engineering Services and Engineering Change Proposals (ECPs) pay for studies, plans, design changes, and implementation of design changes by the contractor(s), primarily due to obsolescence that occurs during the contract performance. Also included in this cost code, is the cost of government installation and integration of MK 48 Mod 7 Guidance and Control and Afterbody Tail Cone Torpedo Sections procured in prior years with War Reserve MK 48 Mod 4 MK 107 Warhead components and Fuel Tanks assembled into an all up round(AUR). Installation costs match procurement delivery timelines. Quality assurance check-out is completed with the test and integration of operational software prior to issue of the MK 48 Mod 7 Torpedo as Warshot or Exercise Torpedo. Diminishing Manufacturing Sources (DMS) cost funds are provided to address obsolescence issues in the Guidance and Control (G&C) and After Body/Tail Cone sections during the production cycle. The contractors will be required to procure and deliver DMS material for these obsolete components.

[P5 / G5002 - MK48 TI-1 Hardware]: The program under this cost code provides for the procurement of Low Rate Initial Procurement (LRIP) for TI-1 Guidance & Control Section upgrade, which will supply a new Guidance and Control (G&C) including new Sonar Assembly (higher density array, transmitter, receiver), Guidance and Control Box (GCB), Tuning Box, and an Ethernet device switch. Improvements are needed in the presence of countermeasures, shallow water, low Doppler targets, fusing, Very Shallow Water (VSW), and Anti Surface Warfare (ASuW) performance. TI-1 upgrade allows full fleet introduction of the APB-6 and to meet requirements of MK 48 Improvements CDD (857-97-12).

[P5 / G5004 - Torpedo Other Procurement Investment]: Funding under this cost provides for additional Warhead electronics (WES , Exploder, and Arming Device) and Fuel Tanks in FY 2021 to FY 2025 utilizing a new competitive MK48 Mod 7 G&C contract in order to replace the Warshot Fuel Tanks and Warhead Sections in the war reserve, which were used by the MK48 Mod 7 Torpedo Program from FY 2016 to FY 2020 to assemble an All-Up-Round Torpedo.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 1: Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3117 / MK-48 Torpedo	
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		

[P5 / G5003 - Support and Ancillary Equipment]: Funding under this cost code provides procurement and maintenance of support, technology refresh of test equipment at Naval Undersea Warfare Centers (NUWC) Keyport (KPT) and Newport (NPT), and the contractor facility for assembly, testing and integration.

[P5 / G5830 - Production Engineering]: Funding under this cost code provides for production tasks performed by NUWC NPT and KPT and includes review of contractor generated Engineering Change Proposals (ECPs), review and resolution of contractor failures and proposed corrective action, configuration management activities, contractor monitoring, risk analysis, technical problem resolution, software engineering, safety, integrated logistics support, environmental engineering, information systems, test equipment, software maintenance and updates, and refurbishment of notable test equipment to provide to the contractors. Funding maintains production specification in accordance with production processes, provides subject matter experts to support root cause analysis of failed contractor hardware, and monitors contractor defect and reduction processes to ensure deficiencies are effectively addressed. Funding is also provided for program office acquisition support.

[P5 / G5840 - Quality Assurance]: Funding under this cost code provides for quality assurance (QA) tasks performed by NUWC Keyport (KPT) and Newport (NPT) including: QA review of the contractor and subcontractor data, review of documentation indicating conformity to product performance requirements, and review of objective quality evidence.

[P5 / G5860 - Acceptance T&E]: Funding under this cost code provides for integration and production acceptance testing of prime contractor hardware sections in an MK 48 Mod 7 All Up Round (AUR) Torpedo.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 1: Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3117 / MK-48 Torpedo

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / MK-48 Torpedo	P-5a, P-21			67 / 185.398	53 / 103.616	71 / 130.000	110 / 284.901	- / 0.000	110 / 284.901
P-40	**Total Gross/Weapon System Cost**				**67 / 185.398**	**53 / 103.616**	**71 / 130.000**	**110 / 284.901**	**- / 0.000**	**110 / 284.901**

*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 2021 Program changes:

Hardware - G5001 - MK48 MOD 7 Hardware Cost:
- (1.1.1 and 1.1.2) G&C and AB/TC Sections: Procurement quantity increases from 71 in FY20 to 110 in FY21 to support the Navy's requirement for additional warshot torpedoes available for Pre-Combat loadout (Pre-CLO). The unit cost increases from FY20 to FY21 are the cost of the Warhead upgrade kit on the G&C contract that upgrades the legacy MK107 MOD 1 warhead sections to the MK107 MOD 2 warhead and a warshot Fuel Tank on the Afterbody/Tailcone contract, neither of which have been procured for the USN since the 90's. The warhead upgrade kit includes a Warhead Electronics System (WES)(redesigned), electromagnetic sources and sensors, an upgrade to the exploder, and new warhead cabling. The addition of the Warhead Upgrade kit procured on the G&C contract increases unit cost by $300,767 and the Fuel Tank procured with the Afterbody Tailcone contract increases unit cost by $176,653. The items procured on the FY16-20 contract (G&C and Afterbody) were escalated from FY20 for inflation for the FY21 unit cost. Estimates for pricing for the additional items were derived from prior contract pricing.

- (1.1.4) Installation: Funding increases in FY21 for government installation and integration of MK 48 Mod 7 Guidance and Control and Afterbody Tail Cone Torpedo Sections procured in prior years per the P-21. In FY21 82 MK48 AUR installations are scheduled to be installed from prior year procurements verses 34 kits installed in FY20.

- (1.2.1) NRE: Funding increases from FY20 to FY21 due to the Non-Recurring Effort (NRE - $38.439) associated with the award of two new competitive contracts for the MK48 Guidance & Control Section with Warhead Components and Afterebody Tailcone with Fuel Tank Section Contracts in FY21. Non-Recurring Engineering (NRE) funds the procurement of Proof of Manufacturing (POM) units for government testing, first article testing, tooling and test equipment, procurement of technical data package updates, and start-up costs for the production contract.

G5004 Torpedo Other (Warhead Electronics /Fuel Tank):
- (3.1.1) A new cost code for Warhead Electronics / Fuel Tanks starts in FY21. As a result funding increases for the procurement of 12 Warhead electronics (new WES , Exploder, and Arming Device) and Fuel Tanks in FY21, to replace the Warshot Fuel Tanks and Warhead Sections which were used by the MK48 Mod 7 Torpedo Program from FY 2016 to FY 2020 to assemble an All-Up-Round Torpedo.

G5860 Acceptance Test & Evaluation:
- (6.1) Acceptance T&E: Increase in funding is required in FY21 to support an increase of deliveries from 34 in FY20 to 82 in FY21.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	P-1 Line Item Number / Title: 3117 / MK-48 Torpedo	Item Number / Title [DODIC]: 1 / MK-48 Torpedo
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	67	53	71	110	-	110
Gross/Weapon System Cost *($ in Millions)*	185.398	103.616	130.000	284.901	0.000	284.901
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	185.398	103.616	130.000	284.901	0.000	284.901
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**185.398**	**103.616**	**130.000**	**284.901**	**0.000**	**284.901**
(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 Dollars)*	2,767K	1,955K	1,831K	2,590K	-	2,590K

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - G5001 - MK48 MOD 7 Hardware Cost																		
Recurring Cost																		
1.1.1) Guidance & Control (G&C) Section(†) (1)	692,477.61	67	46.396	536,195.85	53	28.418	515,492.96	71	36.600	824,009.09	110	90.641	-	-	-	824,009.09	110	90.641
1.1.2) After Body/Tail Cone(†)	833,044.78	67	55.814	830,309.64	53	44.006	813,887.32	71	57.786	965,963.64	110	106.256	-	-	-	965,963.64	110	106.256
1.1.3) Contractor Engineering Services / ECPs	-	-	27.461	-	-	18.522	-	-	17.213	-	-	16.824	-	-	-	-	-	16.824
1.1.4) Installation (2)	-	-	-	-	-	-	-	-	4.092	-	-	10.067	-	-	-	-	-	10.067
1.1.5) Diminshing Manufacturing Sources	-	-	2.500	-	-	0.300	-	-	0.250	-	-	0.250	-	-	-	-	-	0.250
Subtotal: Recurring Cost	-	-	*132.171*	-	-	*91.246*	-	-	*115.941*	-	-	*224.038*	-	-	-	-	-	*224.038*
Non Recurring Cost																		
1.2.1) Non Recurring Engineering (3)	-	-	31.645	-	-	-	-	-	-	-	-	38.439	-	-	-	-	-	38.439
Subtotal: Non Recurring Cost	-	-	*31.645*	-	-	-	-	-	-	-	-	*38.439*	-	-	-	-	-	*38.439*
Subtotal: Hardware - G5001 - MK48 MOD 7 Hardware Cost	**-**	**-**	***163.816***	**-**	**-**	***91.246***	**-**	**-**	***115.941***	**-**	**-**	***262.477***	**-**	**-**	**-**	**-**	**-**	***262.477***
Hardware - G5004 - Torpedo Other Procurement Investment Cost																		
Recurring Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	P-1 Line Item Number / Title: 3117 / MK-48 Torpedo	Item Number / Title [DODIC]: 1 / MK-48 Torpedo
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
3.1.1) Warhead Electronics(†)	-	-	-	-	-	-	-	-	-	481,166.67	12	5.774	-	-	-	481,166.67	12	5.774
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	*5.774*	-	-	-	-	-	*5.774*
Subtotal: Hardware - G5004 - Torpedo Other Procurement Investment Cost	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***5.774***	**-**	**-**	**-**	**-**	**-**	***5.774***
Support - G5003 - Support and Ancillary Equipment Cost																		
4.1) Support and Ancillary Equipment	-	-	3.840	-	-	1.571	-	-	1.601	-	-	1.634	-	-	-	-	-	1.634
Subtotal: Support - G5003 - Support and Ancillary Equipment Cost	**-**	**-**	***3.840***	**-**	**-**	***1.571***	**-**	**-**	***1.601***	**-**	**-**	***1.634***	**-**	**-**	**-**	**-**	**-**	***1.634***
Support - G5830 - Production Engineering Cost																		
5.1) Production Engineering (In-House & Ctr) (4)	-	-	14.492	-	-	6.810	-	-	6.926	-	-	7.218	-	-	-	-	-	7.218
Subtotal: Support - G5830 - Production Engineering Cost	**-**	**-**	***14.492***	**-**	**-**	***6.810***	**-**	**-**	***6.926***	**-**	**-**	***7.218***	**-**	**-**	**-**	**-**	**-**	***7.218***
Support - G5840 - Quality Assurance Cost																		
6.1) Quality Assurance	-	-	2.214	-	-	1.995	-	-	2.035	-	-	2.076	-	-	-	-	-	2.076
Subtotal: Support - G5840 - Quality Assurance Cost	**-**	**-**	***2.214***	**-**	**-**	***1.995***	**-**	**-**	***2.035***	**-**	**-**	***2.076***	**-**	**-**	**-**	**-**	**-**	***2.076***
Support - G5860 - Acceptance T&E Cost																		
7.1) Acceptance T&E	-	-	1.036	-	-	1.994	-	-	3.497	-	-	5.722	-	-	-	-	-	5.722
Subtotal: Support - G5860 - Acceptance T&E Cost	**-**	**-**	***1.036***	**-**	**-**	***1.994***	**-**	**-**	***3.497***	**-**	**-**	***5.722***	**-**	**-**	**-**	**-**	**-**	***5.722***
Gross/Weapon System Cost	**2,767K**	**67**	**185.398**	**1,955K**	**53**	**103.616**	**1,831K**	**71**	**130.000**	**2,590K**	**110**	**284.901**	**-**	**-**	**0.000**	**2,590K**	**110**	**284.901**

(†) indicates the presence of a P-5a

Footnotes:

(1) G&C and AB/TC Sections: Procurement quantity increases from 71 in FY20 to 110 in FY21 to support the Navy's requirement for additional warshot torpedoes available for Pre-Combat loadout (Pre-CLO). G&C Section Unit cost increase is due to the addition of the Warhead Electronics Section (WES) being procured as part of that contract, which was not procured in FY16-FY20. Afterbody/Tailcone Section unit cost increase is due to the addition of the Fuel Tank as part of that contract, which was not procured FY16-FY20.

(2) Installation: Provides funding for government installation and integration of MK 48 Mod 7 Guidance and Control and Afterbody Tail Cone Torpedo Sections procured in prior years per the P-21.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	**P-1 Line Item Number / Title:** 3117 / MK-48 Torpedo	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(3) NRE: Funding increases from FY20 to FY21 due to the Non-Recurring Effort (NRE - $38.439) associated with the award of two new competitive contracts for the MK48 Guidance & Control Section with Warhead Components and Afterebody Tailcone with Fuel Tank Section Contracts in FY21. Non-Recurring Engineering (NRE) funds the procurement of Proof of Manufacturing (POM) units for government testing, first article testing, tooling and test equipment, procurement of technical data package updates, and start-up costs for the production contract.

(4) Funding required from FY20 to FY21 above inflation is due to support for increase in production quantity in FY21.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	P-1 Line Item Number / Title: 3117 / MK-48 Torpedo	Item Number / Title [DODIC]: 1 / MK-48 Torpedo

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Guidance & Control (G&C) Section(†)		2016	G&C Section LMS - FY16 (5) / Marion, MA	C / FFP	NAVSEA	May 2016	Oct 2019	8	1,418K	Y		May 2015
1.1.1) Guidance & Control (G&C) Section(†)		2017	G&C Section LMS - FY17 (6) / Marion, MA	C / FFP	NAVSEA	Sep 2017	May 2020	18	600,930.00	Y		
1.1.1) Guidance & Control (G&C) Section(†)		2018	G&C Section LMS - FY18 (7) / Marion, MA	C / FFP	NAVSEA	Aug 2018	Sep 2020	41	591,036.44	Y		
1.1.1) Guidance & Control (G&C) Section(†)		2019	G&C Section LMS - FY19 (8) / Marion, MA	C / FFP	NAVSEA	Jun 2019	Jan 2021	53	536,195.85	Y		
1.1.1) Guidance & Control (G&C) Section(†)		2020 (9)	G&C Section LMS - FY20 (10) / Marion, MA	C / FFP	NAVSEA	May 2020	Nov 2021	71	515,492.96	Y		
1.1.1) Guidance & Control (G&C) Section(†)		2021 (11)	G&C Section TBD - FY21 / TBD	C / FFP	NAVSEA	May 2021	May 2024	110	824,009.09	Y		
1.1.2) After Body/Tail Cone(†)		2016	Afterbody/Tail Cone Section SAIC - FY16 / Bedford, IN	C / FFP	NAVSEA	Sep 2016	Dec 2019	8	933,250.00	Y		Jul 2015
1.1.2) After Body/Tail Cone(†)		2017	Afterbody/Tail Cone Section SAIC - FY17 / Bedford, IN	C / FFP	NAVSEA	Sep 2017	Apr 2020	18	856,853.00	Y		
1.1.2) After Body/Tail Cone(†)		2018	Afterbody/Tail Cone Section SAIC - FY18 / Bedford, IN	C / FFP	NAVSEA	Jun 2018	Apr 2020	41	803,054.22	Y		
1.1.2) After Body/Tail Cone(†)		2019	Afterbody/Tail Cone Section SAIC - FY19 / Bedford, IN	C / FFP	NAVSEA	Jun 2019	May 2021	53	830,309.64	Y		
1.1.2) After Body/Tail Cone(†)		2020	Afterbody/Tail Cone Section SAIC - FY20 / Bedford, IN	C / FFP	NAVSEA	Jul 2020	Oct 2021	71	813,887.32	Y		
1.1.2) After Body/Tail Cone(†)		2021 (12)	Afterbody/Tail Cone Section TBD - FY21 / TBD	C / FFP	NAVSEA	Jul 2021	Apr 2024	110	965,963.64	Y		
3.1.1) Warhead Electronics(†)		2021	Warhead Electronics/ Unknown / Unknown	C / TBD	NAVSEA	May 2021	May 2024	12	481,166.67	N	May 2021	

(†) indicates the presence of a P-21

Footnotes:

(5) MSR and EOQ have not yet been determined by the contractor.

(6) MSR and EOQ have not yet been determined by the contractor.

(7) MSR and EOQ have not yet been determined by the contractor.

(8) MSR and EOQ have not yet been determined by the contractor.

(9) Unit cost is based on the contract costs. Unit cost is determined by quantity planned for order. All the production contracts have stair step pricing, so as quantity increases and crosses a stair step, the price steps down

(10) MSR and EOQ have not yet been determined by the contractor.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	**P-1 Line Item Number / Title:** 3117 / MK-48 Torpedo	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo

(11) The FY 2021+ procurement unit price reflects acquiring new warheads electronic section and fuel tanks. Prior years procurement used War Reserve Fuel Tanks and warheads. The FY21 procurement will utilize existing MK48 MOD 4 warheads and add the MK 48 MOD 7 Warhead Electronic Section (WES) to minimize the procurement cost and meet the weapons performance requirements. The WES is priced into the G&C contract and the Fuel Tank is priced into the AB/TC contract.

(12) The FY21 procurement unit price reflects acquiring new warheads electronic section and fuel tanks. Prior years procurement used War Reserve Fuel Tanks and warheads. The FY21 procurement will utilize existing MK48 MOD 4 warheads and add the MK 48 MOD 7 Warhead Electronic Section (WES) to minimize the procurement cost and meet the weapons performance requirements. The WES is priced into the G&C contract and the Fuel Tank is priced into the AB/TC contract.

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	**P-1 Line Item Number / Title:** 3117 / MK-48 Torpedo	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
							Calendar Year 2016												Calendar Year 2017												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Guidance & Control (G&C) Section [1]																															
	1	2016	NAVY	8	0	8								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
	2	2017	NAVY	18	0	18																								A -	18
	3	2018	NAVY	41	0	41																									41
	4	2019	NAVY	53	0	53																									53
	5	2020	NAVY	71	0	71																									71
	6	2021	NAVY	110	0	110																									110
1.1.2) After Body/Tail Cone																															
	7	2016	NAVY	8	0	8												A -	-	-	-	-	-	-	-	-	-	-	-	-	8
	8	2017	NAVY	18	0	18																								A -	18
	9	2018	NAVY	41	0	41																									41
	10	2019	NAVY	53	0	53																									53
	11	2020	NAVY	71	0	71																									71
	12	2021	NAVY	110	0	110																									110
3.1.1) Warhead Electronics																															
	13	2021	NAVY	12	0	12																									12
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	**P-1 Line Item Number / Title:** 3117 / MK-48 Torpedo	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Guidance & Control (G&C) Section [1]																															
	1	2016	NAVY	8	0	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
	2	2017	NAVY	18	0	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
	3	2018	NAVY	41	0	41											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	41
	4	2019	NAVY	53	0	53																					A -	-	-	-	53
	5	2020	NAVY	71	0	71																									71
	6	2021	NAVY	110	0	110																									110
1.1.2) After Body/Tail Cone																															
	7	2016	NAVY	8	0	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
	8	2017	NAVY	18	0	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
	9	2018	NAVY	41	0	41									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41
	10	2019	NAVY	53	0	53																					A -	-	-	-	53
	11	2020	NAVY	71	0	71																									71
	12	2021	NAVY	110	0	110																									110
3.1.1) Warhead Electronics																															
	13	2021	NAVY	12	0	12																									12
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1 | **P-1 Line Item Number / Title:** 3117 / MK-48 Torpedo | **Item Number / Title [DODIC]:** 1 / MK-48 Torpedo

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Guidance & Control (G&C) Section [1]																															
	1	2016	NAVY	8	0	8	1	1	1	1	1	1	1	1																	0
	2	2017	NAVY	18	0	18	-	-	-	-	-	-	-	6	8	4															0
	3	2018	NAVY	41	0	41	-	-	-	-	-	-	-	-	-	-	-	8	8	7	7	8	3								0
	4	2019	NAVY	53	0	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	6	6	5	5	5	5	5	4
	5	2020	NAVY	71	0	71								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71
	6	2021	NAVY	110	0	110																				A -	-	-	-	-	110
1.1.2) After Body/Tail Cone																															
	7	2016	NAVY	8	0	8	-	-	4	4																					0
	8	2017	NAVY	18	0	18	-	-	-	-	-	-	3	3	4	4	4														0
	9	2018	NAVY	41	0	41	-	-	-	-	-	-	3	3	3	3	3	6	7	7	6										0
	10	2019	NAVY	53	0	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	3
	11	2020	NAVY	71	0	71										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71
	12	2021	NAVY	110	0	110																						A -	-	-	110
3.1.1) Warhead Electronics																															
	13	2021	NAVY	12	0	12																				A -	-	-	-	-	12
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	**P-1 Line Item Number / Title:** 3117 / MK-48 Torpedo	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Guidance & Control (G&C) Section [1]																															
	1	2016	NAVY	8	8	0																									0
	2	2017	NAVY	18	18	0																									0
	3	2018	NAVY	41	41	0																									0
	4	2019	NAVY	53	49	4	4																								0
	5	2020	NAVY	71	0	71	-	7	7	7	7	7	7	7	7	7	8														0
	6	2021	NAVY	110	0	110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110
1.1.2) After Body/Tail Cone																															
	7	2016	NAVY	8	8	0																									0
	8	2017	NAVY	18	18	0																									0
	9	2018	NAVY	41	41	0																									0
	10	2019	NAVY	53	50	3	3																								0
	11	2020	NAVY	71	0	71	7	7	7	7	7	7	7	7	7	8															0
	12	2021	NAVY	110	0	110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110
3.1.1) Warhead Electronics																															
	13	2021	NAVY	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1 | **P-1 Line Item Number / Title:** 3117 / MK-48 Torpedo | **Item Number / Title [DODIC]:** 1 / MK-48 Torpedo

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
							Calendar Year 2024												Calendar Year 2025												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Guidance & Control (G&C) Section [1]																															
	1	2016	NAVY	8	8	0																									0
	2	2017	NAVY	18	18	0																									0
	3	2018	NAVY	41	41	0																									0
	4	2019	NAVY	53	53	0																									0
	5	2020	NAVY	71	71	0																									0
	6	2021	NAVY	110	0	110	-	-	-	-	-	-	-	13	13	13	14	14	14	14	15										0
1.1.2) After Body/Tail Cone																															
	7	2016	NAVY	8	8	0																									0
	8	2017	NAVY	18	18	0																									0
	9	2018	NAVY	41	41	0																									0
	10	2019	NAVY	53	53	0																									0
	11	2020	NAVY	71	71	0																									0
	12	2021	NAVY	110	0	110	-	-	-	-	-	-	13	13	13	14	14	14	14	15											0
3.1.1) Warhead Electronics																															
	13	2021	NAVY	12	0	12	-	-	-	-	-	-	-	2	2	2	2	2	2												0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	P-1 Line Item Number / Title: 3117 / MK-48 Torpedo	Item Number / Title [DODIC]: 1 / MK-48 Torpedo

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	G&C Section LMS - FY16 (5) - Marion, MA			50	0	0	41	41	0	0	0	0
2	G&C Section LMS - FY17 (6) - Marion, MA			100	0	0	32	32	0	0	0	0
3	G&C Section LMS - FY18 (7) - Marion, MA			100	0	0	25	25	0	0	0	0
4	G&C Section LMS - FY19 (8) - Marion, MA			100	0	0	24	24	0	0	19	19
5	G&C Section LMS - FY20 (10) - Marion, MA			100	0	0	18	18	0	0	0	0
6	G&C Section TBD - FY21 - TBD			TBD	0	0	36	36	0	0	0	0
7	Afterbody/Tail Cone Section SAIC - FY16 - Bedford, IN			TBD	0	0	33	33	0	0	0	0
8	Afterbody/Tail Cone Section SAIC - FY17 - Bedford, IN			TBD	0	0	28	28	0	0	0	0
9	Afterbody/Tail Cone Section SAIC - FY18 - Bedford, IN			TBD	0	0	24	24	0	0	22	22
10	Afterbody/Tail Cone Section SAIC - FY19 - Bedford, IN			TBD	0	0	17	17	0	0	0	0
11	Afterbody/Tail Cone Section SAIC - FY20 - Bedford, IN			TBD	0	0	15	15	0	0	0	0
12	Afterbody/Tail Cone Section TBD - FY21 - TBD			TBD	0	0	33	33	0	0	0	0
13	Warhead Electronics/ Unknown - Unknown			TBD	0	0	36	36	0	0	26	26

"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:
(5) MSR and EOQ have not yet been determined by the contractor.
(6) MSR and EOQ have not yet been determined by the contractor.
(7) MSR and EOQ have not yet been determined by the contractor.
(8) MSR and EOQ have not yet been determined by the contractor.
(10) MSR and EOQ have not yet been determined by the contractor.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 1: Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3141 / ASW Targets

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	215.176	12.323	15.095	13.833	0.000	13.833	13.873	14.094	14.336	14.614	-	313.344
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	215.176	12.323	15.095	13.833	0.000	13.833	13.873	14.094	14.336	14.614	-	313.344
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**215.176**	**12.323**	**15.095**	**13.833**	**0.000**	**13.833**	**13.873**	**14.094**	**14.336**	**14.614**	**-**	**313.344**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The MK-39 MOD 3 Expendable Mobile ASW Training Target (EMATT) is a small self-propelled underwater vehicle launched from fixed wing and rotary wing Anti-Submarine Warfare (ASW) aircraft and ASW surface ships for the purpose of providing basic open ocean sonar training and torpedo placement exercises. Its operation consists of a dynamic run trajectory that is actively controlled in depth and course with pre-programmable run maneuvers emulating threat submarines and is detectable by all current U.S. ASW Platforms.

The MK-30 is an ASW training target for Navy surface ships, submarines, and aircrafts that are capable of simulating submarine threats anticipated in the twenty-first century littoral warfare environment.

The MK-30 Service Life Extension Program (SLEP) extends the useful service life of MK-30 ASW Targets to meet annual fleet training requirements.

[P5 / TG002 - MK39 MOD 3 EMATT]: Funding under this cost code provides for the procurement of MK-39 MOD 3 EMATT vehicles and Non-Recurring Engineering (NRE). NRE funds the cost of Pre-Proof of Manufacturing (POM) units and POM units, first article testing, tooling and test equipment, procurement of technical data package updates, start-up costs, and other one-time costs for production contractors.

[P5 / TG007 - MK30 SLEP]: MK 30 MOD 1 Service Life Extension Program (SLEP) extends the MK 30 MOD 1 ASW Target Service Life to continue the use of MK 30 ASW Target until FY27. The SLEP efforts required include the replacement of critical navigation subsystems, power distribution subsystems, mechanical parts including replacement hull sections, and test equipment that are no longer procurable and/or can no longer be maintained or that needs updates for cyber vulnerabilities.

[P5 / TG832 - MK39 MOD 2/3 EMATT PROD ENG (IN-HOUSE)]: Funding under this cost code provides for production engineering tasks performed by NUWC NPT and KPT including EMATT program management support, systems engineering, and production engineering.

[P5 / TG842 - MK39 MOD 2/3 EMATT QUALITY ASSURANCE]: Funding under this cost code provides for quality assurance efforts in support of the EMATT program.

[P5 / TG862 - MK39MOD 2/3 EMATT ACCEPTANCE T&E]: Funding under this cost code provides for production acceptance of contractor hardware for the EMATT program.

[P5 / TG900 - MK39 MOD 2/3 EMATT CONSULTING SERVICES]: Funding under this cost code provides for contractor support services at the program office.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 1: Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3141 / ASW Targets

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / ASW TARGETS	P-5a, P-21			- / 215.176	- / 12.323	- / 15.095	- / 13.833	- / 0.000	- / 13.833
P-40	**Total Gross/Weapon System Cost**				**- / 215.176**	**- / 12.323**	**- / 15.095**	**- / 13.833**	**- / 0.000**	**- / 13.833**

*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:
FY2021 funds are required for the procurement of MK-39 MOD 3 Expendable Mobile ASW Training Target (EMATT) for the purpose of providing basic open ocean sonar training and torpedo placement exercises to emulating threat submarines. Funding is also required for MK-30 Service Life Extension Program (SLEP) which extends the useful service life of MK-30 ASW Targets to meet annual fleet training requirements.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	P-1 Line Item Number / Title: 3141 / ASW Targets	Item Number / Title [DODIC]: 1 / ASW TARGETS
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	215.176	12.323	15.095	13.833	0.000	13.833
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	215.176	12.323	15.095	13.833	0.000	13.833
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**215.176**	**12.323**	**15.095**	**13.833**	**0.000**	**13.833**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - TG002 - MK39 MOD 3 EMATT Cost																		
Recurring Cost																		
1.1.1) MK39 MOD 3 EMATTs(†)	14,447.07	4,874	70.415	7,097.00	1,019	7.232	7,274.00	964	7.012	7,455.00	965	7.194	-	-	-	7,455.00	965	7.194
1.1.2) ENGINEERING SERVICES/ECP	-	-	6.864	-	-	0.324	-	-	0.594	-	-	0.606	-	-	-	-	-	0.606
1.1.3) MK39 MOD 2 EMATT TARGETS OPTION 2	6,357.27	1,100	6.993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*84.272*	-	-	*7.556*	-	-	*7.606*	-	-	*7.800*	-	-	-	-	-	*7.800*
Non Recurring Cost																		
1.2.1) NON-RECURRING	-	-	2.510	-	-	-	-	-	1.700	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*2.510*	-	-	-	-	-	*1.700*	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - TG002 - MK39 MOD 3 EMATT Cost	**-**	**-**	***86.782***	**-**	**-**	***7.556***	**-**	**-**	***9.306***	**-**	**-**	***7.800***	**-**	**-**	**-**	**-**	**-**	***7.800***
Hardware - TG005 - MK30 MOD 2 PROCUREMENT Cost																		
Recurring Cost																		
2.1.1) MK30 MOD 2 TARGETS	-	-	52.759	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.2) ENGINEERING COSTS	-	-	0.750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*53.509*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	P-1 Line Item Number / Title: 3141 / ASW Targets	Item Number / Title [DODIC]: 1 / ASW TARGETS
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Subtotal: Hardware - TG005 - MK30 MOD 2 PROCUREMENT Cost	**-**	**-**	***53.509***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - TG007 - MK30 SLEP Cost																		
Recurring Cost																		
3.1.1) MK30 SLEP	-	-	31.813	-	-	3.590	-	-	4.582	-	-	4.803	-	-	-	-	-	4.803
Subtotal: Recurring Cost	-	-	*31.813*	-	-	*3.590*	-	-	*4.582*	-	-	*4.803*	-	-	-	-	-	*4.803*
Subtotal: Hardware - TG007 - MK30 SLEP Cost	**-**	**-**	***31.813***	**-**	**-**	***3.590***	**-**	**-**	***4.582***	**-**	**-**	***4.803***	**-**	**-**	**-**	**-**	**-**	***4.803***
Support - TG015 - MK30 SUPPORT & TEST EQUIPMENT Cost																		
4.1) MK30 SUPPORT & TEST EQUIPMENT	-	-	1.122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - TG015 - MK30 SUPPORT & TEST EQUIPMENT Cost	**-**	**-**	***1.122***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - TG832 - MK39 MOD 2/3 EMATT PROD ENG (IN-HOUSE) Cost																		
5.1) MK39 MOD 2/3 EMATT PROD ENG (IN-HOUSE)	-	-	17.381	-	-	0.690	-	-	0.707	-	-	0.720	-	-	-	-	-	0.720
Subtotal: Support - TG832 - MK39 MOD 2/3 EMATT PROD ENG (IN-HOUSE) Cost	**-**	**-**	***17.381***	**-**	**-**	***0.690***	**-**	**-**	***0.707***	**-**	**-**	***0.720***	**-**	**-**	**-**	**-**	**-**	***0.720***
Support - TG835 - MK30 MOD 2 PROD ENG (IN-HOUSE) Cost																		
6.1) MK30 MOD 2 PROD ENG (IN-HOUSE)	-	-	13.118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - TG835 - MK30 MOD 2 PROD ENG (IN-HOUSE) Cost	**-**	**-**	***13.118***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - TG842 - MK39 MOD 2/3 EMATT QUALITY ASSURANCE Cost																		
7.1) MK39 MOD 2/3 EMATT QUALITY ASSURANCE	-	-	1.873	-	-	0.138	-	-	0.143	-	-	0.146	-	-	-	-	-	0.146
Subtotal: Support - TG842 - MK39 MOD 2/3 EMATT QUALITY ASSURANCE Cost	**-**	**-**	***1.873***	**-**	**-**	***0.138***	**-**	**-**	***0.143***	**-**	**-**	***0.146***	**-**	**-**	**-**	**-**	**-**	***0.146***
Support - TG862 - MK39MOD 2/3 EMATT ACCEPTANCE T&E Cost																		
8.1) MK39 MOD 2/3 EMATT ACCEPTANCE T&E	-	-	2.899	-	-	0.188	-	-	0.193	-	-	0.197	-	-	-	-	-	0.197

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	P-1 Line Item Number / Title: 3141 / ASW Targets	Item Number / Title [DODIC]: 1 / ASW TARGETS
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Subtotal: Support - TG862 - MK39MOD 2/3 EMATT ACCEPTANCE T&E Cost	**-**	**-**	***2.899***	**-**	**-**	***0.188***	**-**	**-**	***0.193***	**-**	**-**	***0.197***	**-**	**-**	**-**	**-**	**-**	***0.197***
Support - TG865 - MK30 MOD 2 ACCEPTANCE TESTING Cost																		
9.1) MK30 MOD 2 ACCEPTANCE TESTING	-	-	2.084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - TG865 - MK30 MOD 2 ACCEPTANCE TESTING Cost	**-**	**-**	***2.084***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - TG900 - MK39 MOD 2/3 EMATT CONSULTING SERVICES Cost																		
10.1) MK39 MOD 2/3 EMATT CONSULTING SERVICES	-	-	4.595	-	-	0.161	-	-	0.164	-	-	0.167	-	-	-	-	-	0.167
Subtotal: Support - TG900 - MK39 MOD 2/3 EMATT CONSULTING SERVICES Cost	**-**	**-**	***4.595***	**-**	**-**	***0.161***	**-**	**-**	***0.164***	**-**	**-**	***0.167***	**-**	**-**	**-**	**-**	**-**	***0.167***
Gross/Weapon System Cost	**-**	**-**	**215.176**	**-**	**-**	**12.323**	**-**	**-**	**15.095**	**-**	**-**	**13.833**	**-**	**-**	**0.000**	**-**	**-**	**13.833**

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	P-1 Line Item Number / Title: 3141 / ASW Targets	Item Number / Title [DODIC]: 1 / ASW TARGETS

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) MK39 MOD 3 EMATTs(†)		2017	LOCKHEED MARTIN/ SIPPICAN FY17 / Marion, MA	C / FFP	NUWC NEWPORT	Nov 2016	Feb 2018	715	6,999.00	Y		
1.1.1) MK39 MOD 3 EMATTs(†)		2018	LOCKHEED MARTIN/ SIPPICAN FY18 / Marion, MA	C / FFP	NUWC NEWPORT	Nov 2017	Jan 2019	1,017	6,925.00	Y		
1.1.1) MK39 MOD 3 EMATTs(†)		2019	LOCKHEED MARTIN/ SIPPICAN FY19/20 / Marion, MA	C / FFP	NUWC NEWPORT	Jan 2019	Jan 2020	1,019	7,097.00	Y		
1.1.1) MK39 MOD 3 EMATTs(†)	✓	2020	LOCKHEED MARTIN/ SIPPICAN FY19/20 / Marion, MA	C / FFP	NUWC NEWPORT	Dec 2019	Jan 2021	964	7,274.00	Y		
1.1.1) MK39 MOD 3 EMATTs(†)		2021	LOCKHEED MARTIN/ SIPPICAN FY20/21 / Marion, MA	C / FFP	NUWC NEWPORT	Dec 2020	Jan 2022	965	7,455.00	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	**P-1 Line Item Number / Title:** 3141 / ASW Targets	**Item Number / Title [DODIC]:** 1 / ASW TARGETS

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
										Calendar Year 2017												Calendar Year 2018									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK39 MOD 3 EMATTs																															
Prior Years Deliveries: 3142																															
	1	2017	NAVY	715	0	715		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	208	-	-	250	-	-	257		0
	2	2018	NAVY	1,017	0	1,017														A -	-	-	-	-	-	-	-	-	-	-	1,017
	3	2019	NAVY	1,019	0	1,019																									1,019
✓	3	2020	NAVY	964	0	964																									964
	4	2021	NAVY	965	0	965																									965
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	**P-1 Line Item Number / Title:** 3141 / ASW Targets	**Item Number / Title [DODIC]:** 1 / ASW TARGETS

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK39 MOD 3 EMATTs																															
Prior Years Deliveries: 3142																															
	1	2017	NAVY	715	715	0																									0
	2	2018	NAVY	1,017	0	1,017	-	-	-	333	-	-	-	333	-	-	-	351													0
	3	2019	NAVY	1,019	0	1,019				A -	-	-	-	-	-	-	-	-	-	-	-	333	-	-	-	333	-	-	353		0
✓	3	2020	NAVY	964	0	964															A -	-	-	-	-	-	-	-	-	-	964
	4	2021	NAVY	965	0	965																									965
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	**P-1 Line Item Number / Title:** 3141 / ASW Targets	**Item Number / Title [DODIC]:** 1 / ASW TARGETS

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021															Calendar Year 2022									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK39 MOD 3 EMATTs																															
Prior Years Deliveries: 3142																															
	1	2017	NAVY	715	715	0																									0
	2	2018	NAVY	1,017	1,017	0																									0
	3	2019	NAVY	1,019	1,019	0																									0
✓	3	2020	NAVY	964	0	964	-	-	-	320	-	-	-	320	-	-	-	324													0
	4	2021	NAVY	965	0	965			A -	-	-	-	-	-	-	-	-	-	-	-	-	320	-	-	-	320	-	-	-	325	0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 1	**P-1 Line Item Number / Title:** 3141 / ASW Targets	**Item Number / Title [DODIC]:** 1 / ASW TARGETS

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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/ SIPPICAN FY17 - Marion, MA	300	1,000	1,800	0	0	21	21	0	0	15	15
2	LOCKHEED MARTIN/ SIPPICAN FY18 - Marion, MA	300	1,000	1,800	0	0	21	21	0	0	14	14
3	LOCKHEED MARTIN/ SIPPICAN FY19/20 - Marion, MA	300	1,000	1,800	0	0	0	0	0	0	12	12
4	LOCKHEED MARTIN/ SIPPICAN FY20/21 - Marion, MA	300	1,000	1,800	0	0	21	21	0	0	13	13

"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).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 2: Mod of Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	651	-	-	-	-	-	-	20	40	40	-	751
Gross/Weapon System Cost *($ in Millions)*	1,185.867	83.825	103.860	110.286	0.000	110.286	109.360	137.337	168.575	171.464	-	2,070.574
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,185.867	83.825	103.860	110.286	0.000	110.286	109.360	137.337	168.575	171.464	-	2,070.574
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,185.867**	**83.825**	**103.860**	**110.286**	**0.000**	**110.286**	**109.360**	**137.337**	**168.575**	**171.464**	**-**	**2,070.574**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	6.535	0.697	1.404	-	1.404	1.423	1.466	1.483	1.512	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	1,822K	-	-	-	-	-	-	6,867K	4,214K	4,287K	-	2,757K

Description:

The MK-54 is an anti-submarine torpedo deployed from surface ships and ASW air platforms in littoral scenarios operating in shallow water acoustic and environmental conditions; effective in the presence of threat countermeasures and capable in deep water engagements. This line item procures MK-54 Mod 0 Torpedo Kits, MK-54 Mod 1 Torpedo Kits, MK 54 MOD 2 All-Up-Rounds, MK-54/Vertical Launch Anti-submarine Rocket (VLA) Conversion Kits, Torpedo Exercise Sections, and VLA Components hardware. It also funds the High Altitude ASW Weapon Capability (HAAWC). The MK-54 Mod 0 LWT maximizes the use of Non-Developmental Item (NDI) technologies, incorporating the proven technologies from existing torpedo programs with state of the art Commercial-Off-The-Shelf (COTS) processors and is a modular upgrade to LWT Inventory. MK-54 Mod 1 builds on the MK-54 Mod 0 improvements to expand the torpedoes capability in shallow water littoral environment and also improves the torpedoes counter-countermeasure capability to allow higher effectiveness in current and future threat environments. The MK54 MOD 2 builds on the MK 54 LWT and the MK 50 LWT, to provide improved torpedo effectiveness, through warhead, sensing, processing, propulsion and software upgrades.

[P5 / F5104 MK-54 MOD 0]: Funding under this cost code provides for the procurement of MK-54 MOD 0 hardware kits from the contractors (2), Engineering Change Proposals (ECPs) and Non-Recurring Engineering (NRE) to produce pre-Proof of Manufacturing (POM) units and POM units in the base year of a new contract, first article testing, product improvement, tooling and test equipment, procurement of technical data package updates and start-up costs for production contractors. The MK-54 MOD 0 Kits contract, includes Processor Group Assembly (PGA), Control Group Assembly (CGA), Inertial Measurements Unit (IMU), and afterbody components and cabling. The MK-54 MOD 0 Array Nose Assembly (ANA) kits contract, consists of array receivers and transmitters. Both contracts were competitively awarded. These items are assembled/installed with an MK-46 torpedo warhead and an upgraded MK-46 afterbody. Also included is government installation of the kits into All Up Rounds (AUR). Diminishing Manufacturing Sources (DMS) costs fund the procurement of obsolete commercial material to avoid the redesign and requalification of the electronics during the production cycle.

[P5 / F5110 MK-54 MOD 1 HARDWARE]: Funding under this cost code provides for procurement of MK-54 MOD 1 hardware kits from the contractors (2), Engineering Change Proposals (ECPs) and Non-Recurring Engineering (NRE) to produce Proof of Manufacturing (POM) units, first article testing, product improvement, tooling and test equipment, procurement of technical data package updates, and start-up costs for production contractors. The MK-54 Mod 0 Kits contract provides the afterbody upgrade components, Inertial Measurements Unit (IMU) and Control Group Assembly (CGA) for the MK54 MOD1 Kit. The MK54 MOD 1 Array contract provides the new 112 element array, receiver, transmitter, and Processor Group Assembly (PGA). Also included is government installation of the kits into All Up Rounds(AUR). Diminishing Manufacturing Sources (DMS) costs fund the procurement of obsolete commercial material to avoid redesign and requalification of the electronics during the production cycle.

[P5 / F5105 FLEET EXERCISE SYSTEMS]: Funding under this cost code provides for procurement of MK-54 Fleet Exercise Sections (FES) utilized during in-water acceptance testing of MK-54 kits, fleet exercises and developmental and operational testing.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 2: Mod of Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods	
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		

[P5 / F5107 MK-54/ VLA KITS]: Funding under this cost code provides for procurement of MK-54 VLA upgrade kits, associated hardware, installation costs, and the associated engineering tasks, which supports the conversion and upgrade of existing MK-46 VLA's to make them compatible with the new MK-54 Mod 0 Torpedo. The MK-54 VLA upgrade kit is comprised of an upgraded Digital Auto-Pilot Control (DAC) unit, upgraded air stabilizer, upgraded Thrust Vector Controller (TVC), new MK-54 Torpedo Downloader System (TDS) payload cable, and new nose cap. The MK-54/VLA kit procures and installs modified VLA items for MK-54 compatibility. A MK-54/VLA kit consists of modifications to the digital autopilot and air stabilizer and new nose caps and cables. Funding in this cost code also pays for the upgrade of existing VLA canisters to be compatible with the MK-54 VLA torpedo downloader capability.

[P5 / F5109 HAAWC]: Funding under this cost code provides for procurement, Engineering Change Proposals (ECPs) and non-recurring engineering of the MK-54 High Altitude ASW Weapon Capability (HAAWC) for the P-8 aircraft. HAAWC is an Air-Launched Accessory (ALA) that allows for employment of the MK-54 outside the current fixed wing air launch envelope. The nonrecurring cost sub-cost element is required for redesign due to obsolescence and qualification of new products or contractors and proof of manufacturing units for first article testing, as well as product improvement, value engineering, tooling, test equipment, procurement of technical data package updates, start-up costs, and other one-time costs in the first year of the production contract.

[P5 / F5003 SUPPORT EQUIPMENT]: Funding under this cost code provides for procurement and maintenance of support and test equipment at Naval Undersea Warfare Centers (NUWC) Keyport and Newport, and the contractor facility for assembly, testing, and integration.

[P5 / F5830 PRODUCTION ENGINEERING IN-HOUSE]: Funding under this cost code provides for production engineering tasks performed by NUWC Newport and Keyport and includes review of contractor generated ECPs, review and resolution of contractor failures and proposed corrective action, configuration management activities, contractor monitoring, risk analysis, technical problem resolution, software engineering, safety, integrated logistics support, environmental engineering, and information systems. Funding maintains production specification in accordance with production processes and provides subject matter experts to support root cause analysis of failed contractor hardware and monitor contractor defect resolution and reduction processes to ensure deficiencies are effectively addressed.

[P5 / F5840 QUALITY ASSURANCE]: Funding under this cost code provides for quality assurance tasks performed by Naval Undersea Warfare Center (NUWC) Newport and Keyport including: conducting quality assurance reviews of the contractor and subcontractors, documentation indicating contractor conformity to product performance requirements, and review of objective quality evidence.

[P5 / F5860 ACCEPT TEST & EVALUATION]: Funding under this cost code provides for government production acceptance test planning and conducting the production acceptance test program of contractor hardware, including in-water testing of the torpedoes on department ranges.

[P5 / F5900 PRODUCTION ENGINEERING CONTRACTOR]: Funding under this cost code provides for contractor support to the program office.

[P5 / F5103 FIELD SUPPORT OPERATIONS]: Funding previously allocated for field support tasks to upgrade MK-46 Torpedo VLA to MK-54 Mod 0 Torpedo VLA.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 2: Mod of Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / MK-54 Torpedo Mods	P-5a, P-21			651 / 1,185.867	- / 83.825	- / 103.860	- / 110.286	- / 0.000	- / 110.286
P-40	**Total Gross/Weapon System Cost**				**651 / 1,185.867**	**- / 83.825**	**- / 103.860**	**- / 110.286**	**- / 0.000**	**- / 110.286**

*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:
FY21 program funding changes:

- COST CODE F5104 ITEM 1.1.1 MK 54 MOD 0 Kit Procurement: Decrease MK54 Mod 0 Kit procurement quantity from 42 to 0 from FY20 to FY21. Quantity Objective met in FY20.

- COST CODE F5104 ITEM 1.1.2 MK 54 Engineering Services: Decrease in Engineering Services in FY21 since FY20 is the last year of procurement, but funding is still required to support prior year procurements for MK54 Mod 0.

- COST CODE F5104 ITEM 1.1.3 MK 54 MOD 0 Kit Installation: The program will install procured kits delivered per the P-21 exhibit. Installation occurs one month after delivery and the installation is budgeted for in the year the installation is planned to occur. In FY21, 216 Kits are planned for installation which is a decrease from FY20's 364 Kits.

- COST CODE F5104 ITEM 2.1.1 MK 54 MOD 1 Kit Procurement: Increase MK54 Mod-1 Kit procurement quantities from of 30 MOD 1 Kits in FY20 to 69 Mod 1 Kits in FY21.

- COST CODE F5110 ITEM 2.1.3 MK-54 ENGINEERING SERVICES / ECPS FOR KITS: Funding increased in FY 2021 due to the need to procure proof of manufacturing (POM) hardware to support redesign of the torpedo electronics, which are obsolete. The redesign will include new Commercial Off the Shelf (COTS) processors which increase the ability to continue software improvements to the weapon due to faster processors and improved communication protocols. The redesign is necessary because electronic parts from the original design that started in FY06 are no longer available to make the Torpedo. Bridge buys of available electronic parts have been executed to support production for FY18-21. The redesign started in FY19 and continue through FY22 until a new design for the electronics is available and qualified. Production will stop in FY22 unless the redesign is funded which will significantly impact the small business workforce producing the MK54 MOD 1 sonar section.

- COST CODE F5110 ITEM 2.1.4 MK 54 MOD 1 INSTALLATION: Funding provides for government installation of the MK54 Mod 1 kits into All Up Rounds(AUR) as shown on the P-21. Installation occurs one month after delivery and the installation is budgeted for in the year the installation is planned to occur. In FY21, installations of MK54 Mod 1 increases from 24 in FY20 to 36 in FY21 for prior year procurements.

- COST CODE F5109 ITEM 7.1.1 HAAWC Kits: Increase HAAWC Kits procurement quantity from 35 to 37 from FY20 to FY21 respectively.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods	**Item Number / Title [DODIC]:** 1 / MK-54 Torpedo Mods
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	651	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,185.867	83.825	103.860	110.286	0.000	110.286
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,185.867	83.825	103.860	110.286	0.000	110.286
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,185.867**	**83.825**	**103.860**	**110.286**	**0.000**	**110.286**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	6.535	0.697	1.404	-	1.404
Gross/Weapon System Unit Cost *($ in Dollars)*	1,822K	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - F5104 MK-54 MOD 0 Cost																		
Recurring Cost																		
1.1.1) MK-54 KITS - MOD 0(†)	401,437.29	1,475	592.120	371,969.70	66	24.550	377,119.00	42	15.839	-	-	-	-	-	-	-	-	-
1.1.2) MK-54 ENGINEERING SERVICES/ECPS	-	-	30.946	-	-	3.514	-	-	4.383	-	-	2.607	-	-	-	-	-	2.607
1.1.3) MK-54 INSTALLATION INTO LEGACY TORPEDOS (1)	-	-	54.511	-	-	4.860	-	-	20.020	-	-	12.096	-	-	-	-	-	12.096
1.1.4) DIMINISHING MANUFACTURING SOURCES	-	-	1.549	-	-	0.533	-	-	0.542	-	-	-	-	-	-	-	-	-
1.1.5) MK-54 Other	-	-	9.826	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*688.952*	-	-	*33.457*	-	-	*40.784*	-	-	*14.703*	-	-	-	-	-	*14.703*
Non Recurring Cost																		
1.2.1) MK-54 NRE	-	-	29.625	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*29.625*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - F5104 MK-54 MOD 0 Cost	**-**	**-**	***718.577***	**-**	**-**	***33.457***	**-**	**-**	***40.784***	**-**	**-**	***14.703***	**-**	**-**	**-**	**-**	**-**	***14.703***
Hardware - F5110 MK-54 MOD 1 HARDWARE Cost																		
Recurring Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	P-1 Line Item Number / Title: 3215 / MK-54 Torpedo Mods	Item Number / Title [DODIC]: 1 / MK-54 Torpedo Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
2.1.1) MK-54 KITS - MOD 1(†)	541,871.43	140	75.862	-	-	-	622,633.33	30	18.679	604,434.78	69	41.706	-	-	-	604,434.78	69	41.706
2.1.2) DIMINISHING MANUFACTURING SOURCES (2)	-	-	1.544	-	-	1.000	-	-	2.180	-	-	2.334	-	-	-	-	-	2.334
2.1.3) MK-54 ENGINEERING SERVICES / ECPS FOR KITS	-	-	13.683	-	-	6.445	-	-	9.976	-	-	17.750	-	-	-	-	-	17.750
2.1.4) MK-54 MOD 1 INSTALLATION (3)	-	-	1.908	-	-	2.376	-	-	1.320	-	-	2.016	-	-	-	-	-	2.016
Subtotal: Recurring Cost	-	-	*92.997*	-	-	*9.821*	-	-	*32.155*	-	-	*63.806*	-	-	-	-	-	*63.806*
Non Recurring Cost																		
2.2.1) MK-54 NRE	-	-	10.314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*10.314*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - F5110 MK-54 MOD 1 HARDWARE Cost	**-**	**-**	***103.311***	**-**	**-**	***9.821***	**-**	**-**	***32.155***	**-**	**-**	***63.806***	**-**	**-**	**-**	**-**	**-**	***63.806***
Hardware - F5105 FLEET EXERCISE SYSTEMS Cost																		
Recurring Cost																		
4.1.1) FLEET EXERCISE SYSTEMS(†)	191,772.73	44	8.438	93,333.33	6	0.560	95,000.00	6	0.570	96,900.00	6	0.581	-	-	-	96,900.00	6	0.581
Subtotal: Recurring Cost	-	-	*8.438*	-	-	*0.560*	-	-	*0.570*	-	-	*0.581*	-	-	-	-	-	*0.581*
Subtotal: Hardware - F5105 FLEET EXERCISE SYSTEMS Cost	**-**	**-**	***8.438***	**-**	**-**	***0.560***	**-**	**-**	***0.570***	**-**	**-**	***0.581***	**-**	**-**	**-**	**-**	**-**	***0.581***
Hardware - F5107 MK-54/ VLA KITS Cost																		
Recurring Cost																		
5.1.1) MK-54 / VLA KITS(†)	99,680.18	222	22.129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.1.2) MK-54 / VLA HARDWARE OBSOLESCENCE	-	-	1.343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.1.3) MK-54 / VLA INSTALLATION	-	-	13.308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*36.780*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - F5107 MK-54/ VLA KITS Cost	**-**	**-**	***36.780***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	P-1 Line Item Number / Title: 3215 / MK-54 Torpedo Mods	Item Number / Title [DODIC]: 1 / MK-54 Torpedo Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - F5108 VLA COMPONENTS Cost																		
Recurring Cost																		
6.1.1) VLA COMPONENT SETS	2,255K	22	49.606	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.1.2) VLA ENGINEERING SVCS / ECPS	-	-	3.889	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.1.3) VLA CANISTERS	216,636.36	22	4.766	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.1.4) VLA AUR BUILDUP / INSTALLATION	-	-	1.527	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*59.788*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - F5108 VLA COMPONENTS Cost	**-**	**-**	***59.788***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - F5109 HAAWC Cost																		
Recurring Cost																		
7.1.1) HAAWC Kits(†)	-	-	-	52,012.00	117	6.085	183,000.00	35	6.405	185,000.00	37	6.845	-	-	-	185,000.00	37	6.845
7.1.2) TM kits(†)	-	-	-	180,000.00	36	6.480	-	-	-	-	-	-	-	-	-	-	-	-
7.1.3) HAAWC Engineering Services/ ECPs	-	-	-	-	-	2.897	-	-	1.348	-	-	1.409	-	-	-	-	-	1.409
7.1.4) HAAWC ALA Containers & Flight Test Simulator	-	-	-	-	-	0.294	-	-	0.672	-	-	0.912	-	-	-	-	-	0.912
7.1.5) HAAWC All Up Round Containers	-	-	-	-	-	2.625	-	-	0.558	-	-	0.583	-	-	-	-	-	0.583
7.1.6) DIMINISHING MANUFACTURING SOURCES	-	-	-	-	-	0.310	-	-	0.310	-	-	0.260	-	-	-	-	-	0.260
7.1.7) HAAWC IN-HOUSE PRODUCTION ENGINEERING SUPPORT	-	-	-	-	-	2.816	-	-	2.208	-	-	2.302	-	-	-	-	-	2.302
Subtotal: Recurring Cost	-	-	-	-	-	*21.507*	-	-	*11.501*	-	-	*12.311*	-	-	-	-	-	*12.311*
Subtotal: Hardware - F5109 HAAWC Cost	**-**	**-**	**-**	**-**	**-**	***21.507***	**-**	**-**	***11.501***	**-**	**-**	***12.311***	**-**	**-**	**-**	**-**	**-**	***12.311***
Hardware - F5CA1 CONGRESSIONAL ADDS- TECHNOLOGY INSERTIONS Cost																		
Non Recurring Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	P-1 Line Item Number / Title: 3215 / MK-54 Torpedo Mods	Item Number / Title [DODIC]: 1 / MK-54 Torpedo Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
8.1.1) CONGRESSIONAL ADDS - TECHNOLOGY INSERTIONS	-	-	4.400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*4.400*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - F5CA1 CONGRESSIONAL ADDS- TECHNOLOGY INSERTIONS Cost	**-**	**-**	***4.400***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - F5CA2 CONGRESSIONAL ADDS - TORPEDO TEST HARDWARE Cost																		
Non Recurring Cost																		
9.1.1) CONGRESSIONAL ADDS - TORPEDO TEST HARDWARE	-	-	1.600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*1.600*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - F5CA2 CONGRESSIONAL ADDS - TORPEDO TEST HARDWARE Cost	**-**	**-**	***1.600***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - F5CA3 CONGRESSIONAL ADD Cost																		
Non Recurring Cost																		
10.1.1) INTELLIGENT GRAPHICS TORPEDO TEST SET TROUBLESHOOTING MAINTENERS AID	-	-	4.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*4.000*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - F5CA3 CONGRESSIONAL ADD Cost	**-**	**-**	***4.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - F5CA4 CONGRESSIONAL ADDS Cost																		
Non Recurring Cost																		
11.1.1) LIGHTWEIGHT TORPEDO PSU TEST EQUIPMENT MODERNIZATION	-	-	3.840	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	P-1 Line Item Number / Title: 3215 / MK-54 Torpedo Mods	Item Number / Title [DODIC]: 1 / MK-54 Torpedo Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Subtotal: Non Recurring Cost	-	-	*3.840*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - F5CA4 CONGRESSIONAL ADDS Cost	**-**	**-**	***3.840***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - F5003 SUPPORT EQUIPMENT Cost																		
12.1) SUPPORT EQUIPMENT	-	-	22.929	-	-	1.802	-	-	1.838	-	-	1.875	-	-	-	-	-	1.875
Subtotal: Support - F5003 SUPPORT EQUIPMENT Cost	**-**	**-**	***22.929***	**-**	**-**	***1.802***	**-**	**-**	***1.838***	**-**	**-**	***1.875***	**-**	**-**	**-**	**-**	**-**	***1.875***
Support - F5830 PRODUCTION ENGINEERING IN-HOUSE Cost																		
13.1) PRODUCTION ENGINEERING IN-HOUSE	-	-	104.409	-	-	7.383	-	-	7.531	-	-	7.376	-	-	-	-	-	7.376
Subtotal: Support - F5830 PRODUCTION ENGINEERING IN-HOUSE Cost	**-**	**-**	***104.409***	**-**	**-**	***7.383***	**-**	**-**	***7.531***	**-**	**-**	***7.376***	**-**	**-**	**-**	**-**	**-**	***7.376***
Support - F5840 QUALITY ASSURANCE Cost																		
14.1) QUALITY ASSURANCE	-	-	37.786	-	-	4.682	-	-	4.776	-	-	4.852	-	-	-	-	-	4.852
Subtotal: Support - F5840 QUALITY ASSURANCE Cost	**-**	**-**	***37.786***	**-**	**-**	***4.682***	**-**	**-**	***4.776***	**-**	**-**	***4.852***	**-**	**-**	**-**	**-**	**-**	***4.852***
Support - F5860 ACCEPT TEST & EVALUATION Cost																		
15.1) ACCEPT TEST & EVALUATION	-	-	65.898	-	-	3.920	-	-	3.998	-	-	4.062	-	-	-	-	-	4.062
Subtotal: Support - F5860 ACCEPT TEST & EVALUATION Cost	**-**	**-**	***65.898***	**-**	**-**	***3.920***	**-**	**-**	***3.998***	**-**	**-**	***4.062***	**-**	**-**	**-**	**-**	**-**	***4.062***
Support - F5900 PRODUCTION ENGINEERING CONTRACTOR Cost																		
16.1) PRODUCTION ENGINEERING CONTRACTOR	-	-	11.566	-	-	0.693	-	-	0.707	-	-	0.720	-	-	-	-	-	0.720
Subtotal: Support - F5900 PRODUCTION ENGINEERING CONTRACTOR Cost	**-**	**-**	***11.566***	**-**	**-**	***0.693***	**-**	**-**	***0.707***	**-**	**-**	***0.720***	**-**	**-**	**-**	**-**	**-**	***0.720***
Support - WAXXX ACQUISITION WORKFORCE FUNDING - 2009 Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	P-1 Line Item Number / Title: 3215 / MK-54 Torpedo Mods	Item Number / Title [DODIC]: 1 / MK-54 Torpedo Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
17.1) ACQUISITION WORKFORCE FUNDING - 2009	-	-	0.287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - WAXXX ACQUISITION WORKFORCE FUNDING - 2009 Cost	**-**	**-**	***0.287***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - F5103 FIELD SUPPORT OPERATIONS Cost																		
18.1) MK-46 MOD 5A (SW) SLEP KITS	-	-	1.561	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - F5103 FIELD SUPPORT OPERATIONS Cost	**-**	**-**	***1.561***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - F5106 MK-54 PLATFORM INTEGRATION Cost																		
19.1) MK-54 PLATFORM INTEGRATION	-	-	0.697	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - F5106 MK-54 PLATFORM INTEGRATION Cost	**-**	**-**	***0.697***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**1,822K**	**651**	**1,185.867**	**-**	**-**	**83.825**	**-**	**-**	**103.860**	**-**	**-**	**110.286**	**-**	**-**	**0.000**	**-**	**-**	**110.286**

(†) indicates the presence of a P-5a

Footnotes:

(1) ITEM 1.1.3 - COST CODE F5104 MK 54 MOD 0 Kit Installation: The program will install procured kits delivered per the P-21 exhibit. Installation occurs one month after delivery and the installation is budgeted for in the year the installation is planned to occur.

(2) DMS material funds the procurement of obsolete commercial electronic material to avoid redesign of the MK54 MOD 1 torpedo. The MK54 MOD 1 Signal Processor and Data Processor are currently obsolete. The commercial manufacturer of these parts allows the MK54 Mod 1 program to make future purchases of these obsolete electronic component parts on the computer boards as they become obsolete. This funding is to allow a stable baseline for software development and operational testing while allowing time to redesign the MK54 MOD 1 PGA.

(3) ITEM 2.1.4 - COST CODE F5110 MK 54 MOD 1 INSTALLATION: Funding provides for government installation of the MK54 Mod 1 kits and Afterbodies into All Up Rounds(AUR) as shown on the P-21. Installation occurs one month after delivery and the installation is budgeted for in the year the installation is planned to occur.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	P-1 Line Item Number / Title: 3215 / MK-54 Torpedo Mods	Item Number / Title [DODIC]: 1 / MK-54 Torpedo Mods

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) MK-54 KITS - MOD 0(†)		2013	RAYTHEON/NORTHROP GRUMMAN / PORTSMOUTH, RHODE ISLAND/ANNAPOLIS, MD	C / FFP	NAVSEA	Sep 2013	Jul 2018	150	311,000.00	Y		
1.1.1) MK-54 KITS - MOD 0(†)		2014	RAYTHEON/NORTHROP GRUMMAN / PORTSMOUTH, RHODE ISLAND/ANNAPOLIS, MD	C / FFP	NAVSEA	Aug 2014	Sep 2019	214	256,532.71	Y		
1.1.1) MK-54 KITS - MOD 0(†)		2015	RAYTHEON/NORTHROP GRUMMAN / PORTSMOUTH, RHODE ISLAND/ANNAPOLIS,MD	C / FFP	NAVSEA	Aug 2015	Apr 2020	100	325,000.00	Y		
1.1.1) MK-54 KITS - MOD 0(†)		2016	RAYTHEON/NORTHROP GRUMMAN. / PORTSMOUTH, RHODE ISLAND/ANNAPOLIS, MD	C / FFP	NAVSEA	Aug 2016	Jul 2020	78	292,367.00	Y		
1.1.1) MK-54 KITS - MOD 0(†)		2017	RAYTHEON/NORTHROP GRUMMAN. / PORTSMOUTH, RHODE ISLAND/ANNAPOLIS, MD	C / FFP	NAVSEA	Aug 2017	Oct 2020	116	304,732.76	Y		
1.1.1) MK-54 KITS - MOD 0(†)		2018	RAYTHEON /ULTRA / PORTSMOUTH, RHODE ISLAND / TBD	C / FFP	NAVSEA	Aug 2018	Feb 2021	104	335,625.00	Y		
1.1.1) MK-54 KITS - MOD 0(†)		2019	RAYTHEON /ULTRA / PORTSMOUTH, RHODE ISLAND / TBD	C / FFP	NAVSEA	Jul 2019	Jul 2021	66	371,969.70	Y		
1.1.1) MK-54 KITS - MOD 0(†)	✓	2020	RAYTHEON /ULTRA / PORTSMOUTH, RHODE ISLAND / TBD	C / FFP	NAVSEA	Jul 2020	Jul 2022	42	377,119.00	Y		
2.1.1) MK-54 KITS - MOD 1(†)		2014	PROGENY/RAYTHEON - FY14 / MANASSAS VA/PORTSMOUTH, RI	SS / FFP	NAVSEA	Jul 2016	Dec 2017	40	510,000.00	Y		Jun 2014
2.1.1) MK-54 KITS - MOD 1(†)		2016	PROGENY / RAYTHEON - FY16 / MANASSAS VA /PORTSMOUTH,RI	SS / FFP	NAVSEA	Jul 2016	Oct 2018	40	525,000.00	Y		
2.1.1) MK-54 KITS - MOD 1(†)		2017	PROGENY/RAYTHEON - FY17 / MANASSAS VA/PORTSMOUTH,RI	SS / FFP	NAVSEA	Aug 2018	Jan 2020	30	533,000.00	Y		
2.1.1) MK-54 KITS - MOD 1(†)		2018	PROGENY/RAYTHEON- FY18 / PORTSMOUTH,RI/Baintree,MA	SS / FFP	NAVSEA	Aug 2018	Nov 2020	30	615,733.33	Y		
2.1.1) MK-54 KITS - MOD 1(†)		2020	PROGENY/RAYTHEON - FY20 / PORTSMOUTH,RI/Baintree,MA	SS / FFP	NAVSEA	Dec 2019	May 2022	30	622,633.33	Y		
2.1.1) MK-54 KITS - MOD 1(†)		2021	PROGENY/CTR TBD - FY21 / MANASSAS VA / TBD	SS / FFP	NAVSEA / KPT	Aug 2021	Jan 2023	69	604,434.78	Y		
4.1.1) FLEET EXERCISE SYSTEMS		2015	NUWC KEYPORT / KEYPORT WASHINGTON	C / FFP	NUWC,KPT	Jan 2015	Jan 2016	6	88,000.00	Y		
4.1.1) FLEET EXERCISE SYSTEMS		2016	NUWC KEYPORT / KEYPORT WASHINGTON	C / FFP	NUWC, KPT	Jan 2016	Jan 2017	6	89,000.00	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	P-1 Line Item Number / Title: 3215 / MK-54 Torpedo Mods	Item Number / Title [DODIC]: 1 / MK-54 Torpedo Mods

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
4.1.1) FLEET EXERCISE SYSTEMS		2017	NUWC KEYPORT / KEYPORT WASHINGTON	C / FFP	NUWC, KPT	Sep 2017	Sep 2018	6	90,000.00	Y		
4.1.1) FLEET EXERCISE SYSTEMS		2018	NUWC KEYPORT / KEYPORT WASHINGTON	C / FFP	NUWC, KPT	Sep 2018	Sep 2019	2	91,666.67	Y		
4.1.1) FLEET EXERCISE SYSTEMS		2019	NUWC KEYPORT / KEYPORT WASHINGTON	C / FFP	NUWC, KPTNUWC, KPT	Sep 2019	Sep 2020	6	93,333.33	Y		
4.1.1) FLEET EXERCISE SYSTEMS	✓	2020	NUWC KEYPORT / KEYPORT WASHINGTON	C / FFP	NUWC, KPT	Sep 2020	Sep 2021	6	95,000.00	Y		
4.1.1) FLEET EXERCISE SYSTEMS		2021	NUWC KEYPORT / KEYPORT WASHINGTON	C / FFP	NUWC, KPT	Sep 2021	Sep 2022	6	96,900.00	Y		
5.1.1) MK-54 / VLA KITS		2016	LOCKHEED MARTIN / OWEGO NY	SS / FP	NAVSUP, WSS	Jul 2016	Nov 2017	32	48,968.75	Y		
5.1.1) MK-54 / VLA KITS		2017	LOCKHEED MARTIN / AKRON OH	SS / FFP	NAVSUP,WSS	Jul 2017	Nov 2018	40	49,750.00	Y		
7.1.1) HAAWC Kits(†)		2019	BOEING INC / ST LOUIS, MO	C / FFP	NAVSEA	Nov 2019	Nov 2020	117	52,012.00	Y		
7.1.1) HAAWC Kits(†)		2020	BOEING INC / ST LOUIS, MO	SS / FFP	NAVSEA	Nov 2019	Nov 2020	35	183,000.00	Y		
7.1.1) HAAWC Kits(†)		2021	BOEING INC / ST LOUIS, MO	SS / FFP	NAVSEA	Nov 2021	Nov 2022	37	185,000.00	Y		
7.1.2) TM kits		2019	FY19 BOEING INC. / ST LOUIS, MO	C / FFP	NAVSEA	Nov 2019	Nov 2020	36	180,000.00	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2 | **P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods | **Item Number / Title [DODIC]:** 1 / MK-54 Torpedo Mods

Cost Elements (Units in Each)							Fiscal Year 2013												Fiscal Year 2014												BALANCE
							Calendar Year 2013												Calendar Year 2014												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2012	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK-54 KITS - MOD 0																															
Prior Years Deliveries: 713																															
	1	2013	NAVY	150	0	150												A -	-	-	-	-	-	-	-	-	-	-	-	-	150
	1	2014	NAVY	214	0	214																							A -	-	214
	2	2015	NAVY	100	0	100																									100
	4	2016	NAVY	78	0	78																									78
	4	2017	NAVY	116	0	116																									116
	3	2018	NAVY	104	0	104																									104
	3	2019	NAVY	66	0	66																									66
✓	3	2020	NAVY	42	0	42																									42
2.1.1) MK-54 KITS - MOD 1																															
	5	2014	NAVY	40	0	40																									40
	6	2016	NAVY	40	0	40																									40
	7	2017	NAVY	30	0	30																									30
	8	2018	NAVY	30	0	30																									30
	9	2020	NAVY	30	0	30																									30
	10	2021	NAVY	69	0	69																									69
7.1.1) HAAWC Kits																															
	11	2019	NAVY	117	0	117																									117
	11	2020	NAVY	35	0	35																									35
	11	2021	NAVY	37	0	37																									37
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2 | **P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods | **Item Number / Title [DODIC]:** 1 / MK-54 Torpedo Mods

Cost Elements (Units in Each)							Fiscal Year 2015												Fiscal Year 2016												BALANCE
							Calendar Year 2015												Calendar Year 2016												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK-54 KITS - MOD 0																															
Prior Years Deliveries: 713																															
	1	2013	NAVY	150	0	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150
	1	2014	NAVY	214	0	214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214
	2	2015	NAVY	100	0	100											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	100
	4	2016	NAVY	78	0	78																							A -	-	78
	4	2017	NAVY	116	0	116																									116
	3	2018	NAVY	104	0	104																									104
	3	2019	NAVY	66	0	66																									66
✓	3	2020	NAVY	42	0	42																									42
2.1.1) MK-54 KITS - MOD 1																															
	5	2014	NAVY	40	0	40																						A -	-	-	40
	6	2016	NAVY	40	0	40																						A -	-	-	40
	7	2017	NAVY	30	0	30																									30
	8	2018	NAVY	30	0	30																									30
	9	2020	NAVY	30	0	30																									30
	10	2021	NAVY	69	0	69																									69
7.1.1) HAAWC Kits																															
	11	2019	NAVY	117	0	117																									117
	11	2020	NAVY	35	0	35																									35
	11	2021	NAVY	37	0	37																									37
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2 | **P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods | **Item Number / Title [DODIC]:** 1 / MK-54 Torpedo Mods

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
							Calendar Year 2017												Calendar Year 2018												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK-54 KITS - MOD 0																															
Prior Years Deliveries: 713																															
	1	2013	NAVY	150	0	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	29	1	89
	1	2014	NAVY	214	0	214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214
	2	2015	NAVY	100	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100
	4	2016	NAVY	78	0	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78
	4	2017	NAVY	116	0	116											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	116
	3	2018	NAVY	104	0	104																							A -	-	104
	3	2019	NAVY	66	0	66																									66
✓	3	2020	NAVY	42	0	42																									42
2.1.1) MK-54 KITS - MOD 1																															
	5	2014	NAVY	40	0	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4	4	0
	6	2016	NAVY	40	0	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
	7	2017	NAVY	30	0	30																							A -	-	30
	8	2018	NAVY	30	0	30																							A -	-	30
	9	2020	NAVY	30	0	30																									30
	10	2021	NAVY	69	0	69																									69
7.1.1) HAAWC Kits																															
	11	2019	NAVY	117	0	117																									117
	11	2020	NAVY	35	0	35																									35
	11	2021	NAVY	37	0	37																									37
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2 | **P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods | **Item Number / Title [DODIC]:** 1 / MK-54 Torpedo Mods

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019															Calendar Year 2020									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK-54 KITS - MOD 0																															
Prior Years Deliveries: 713																															
	1	2013	NAVY	150	61	89	9	20	21	13	13	13																			0
	1	2014	NAVY	214	0	214	-	-	-	-	-	-	-	-	-	-	-	30	30	30	31	31	31	31							0
	2	2015	NAVY	100	0	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	30	30	10			0
	4	2016	NAVY	78	0	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	30	28	0
	4	2017	NAVY	116	0	116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116
	3	2018	NAVY	104	0	104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104
	3	2019	NAVY	66	0	66										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66
✓	3	2020	NAVY	42	0	42																						A -	-	-	42
2.1.1) MK-54 KITS - MOD 1																															
	5	2014	NAVY	40	40	0																									0
	6	2016	NAVY	40	0	40	3	3	3	3	4	4	4	4	4	4	4														0
	7	2017	NAVY	30	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3
	8	2018	NAVY	30	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
	9	2020	NAVY	30	0	30															A -	-	-	-	-	-	-	-	-	-	30
	10	2021	NAVY	69	0	69																									69
7.1.1) HAAWC Kits																															
	11	2019	NAVY	117	0	117														A -	-	-	-	-	-	-	-	-	-	-	117
	11	2020	NAVY	35	0	35														A -	-	-	-	-	-	-	-	-	-	-	35
	11	2021	NAVY	37	0	37																									37
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2 | **P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods | **Item Number / Title [DODIC]:** 1 / MK-54 Torpedo Mods

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021															Calendar Year 2022									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK-54 KITS - MOD 0																															
Prior Years Deliveries: 713																															
	1	2013	NAVY	150	150	0																									0
	1	2014	NAVY	214	214	0																									0
	2	2015	NAVY	100	100	0																									0
	4	2016	NAVY	78	78	0																									0
	4	2017	NAVY	116	0	116	30	30	28	28																					0
	3	2018	NAVY	104	0	104	-	-	-	-	9	9	9	9	9	9	10	9	8	8	8	7									0
	3	2019	NAVY	66	0	66	-	-	-	-	-	-	-	-	-	4	4	5	5	6	6	6	6	6	6	6	6				0
✓	3	2020	NAVY	42	0	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	5	33
2.1.1) MK-54 KITS - MOD 1																															
	5	2014	NAVY	40	40	0																									0
	6	2016	NAVY	40	40	0																									0
	7	2017	NAVY	30	27	3	3																								0
	8	2018	NAVY	30	0	30	-	3	3	3	3	3	3	3	3	3	3														0
	9	2020	NAVY	30	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3		15
	10	2021	NAVY	69	0	69											A -	-	-	-	-	-	-	-	-	-	-	-	-		69
7.1.1) HAAWC Kits																															
	11	2019	NAVY	117	0	117	-	7	11	11	11	11	11	11	11	11	11	11													0
	11	2020	NAVY	35	0	35	-	3	3	3	3	3	3	3	3	3	3	3	2												0
	11	2021	NAVY	37	0	37														A -	-	-	-	-	-	-	-	-	-		37
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2 | **P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods | **Item Number / Title [DODIC]:** 1 / MK-54 Torpedo Mods

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
							Calendar Year 2023												Calendar Year 2024												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) MK-54 KITS - MOD 0																															
Prior Years Deliveries: 713																															
	1	2013	NAVY	150	150	0																									0
	1	2014	NAVY	214	214	0																									0
	2	2015	NAVY	100	100	0																									0
	4	2016	NAVY	78	78	0																									0
	4	2017	NAVY	116	116	0																									0
	3	2018	NAVY	104	104	0																									0
	3	2019	NAVY	66	66	0																									0
✓	3	2020	NAVY	42	9	33	4	4	4	4	4	4	3	3	3																0
2.1.1) MK-54 KITS - MOD 1																															
	5	2014	NAVY	40	40	0																									0
	6	2016	NAVY	40	40	0																									0
	7	2017	NAVY	30	30	0																									0
	8	2018	NAVY	30	30	0																									0
	9	2020	NAVY	30	15	15	3	3	3	3	3																				0
	10	2021	NAVY	69	0	69	-	-	-	5	5	5	5	5	5	5	6	7	7	7	7										0
7.1.1) HAAWC Kits																															
	11	2019	NAVY	117	117	0																									0
	11	2020	NAVY	35	35	0																									0
	11	2021	NAVY	37	0	37	-	3	3	3	3	3	3	3	3	3	3	3	4												0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3215 / MK-54 Torpedo Mods	**Item Number / Title [DODIC]:** 1 / MK-54 Torpedo Mods

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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/NORTHROP GRUMMAN - PORTSMOUTH, RHODE ISLAND/ANNAPOLIS, MD	120	216	312	0	0	41	41	0	0	23	23
2	RAYTHEON/NORTHROP GRUMMAN - PORTSMOUTH, RHODE ISLAND/ANNAPOLIS,MD	120	216	312	0	0	0	0	0	0	24	24
3	RAYTHEON /ULTRA - PORTSMOUTH, RHODE ISLAND / TBD	120	216	312	0	0	21	21	0	0	24	24
4	RAYTHEON/NORTHROP GRUMMAN. - PORTSMOUTH, RHODE ISLAND/ANNAPOLIS, MD	120	216	312	0	0	28	28	0	0	24	24
5	PROGENY/RAYTHEON - FY14 - MANASSAS VA/ PORTSMOUTH, RI			TBD	0	0	17	17	0	0	17	17
6	PROGENY / RAYTHEON - FY16 - MANASSAS VA / PORTSMOUTH,RI			TBD	0	0	27	27	0	0	27	27
7	PROGENY/RAYTHEON - FY17 - MANASSAS VA/ PORTSMOUTH,RI			TBD	0	0	17	17	0	0	17	17
8	PROGENY/RAYTHEON- FY18 - PORTSMOUTH,RI/ Baintree,MA	24	51	TBD	0	0	27	27	0	0	27	27
9	PROGENY/RAYTHEON - FY20 - PORTSMOUTH,RI/ Baintree,MA	24	51	TBD	0	0	21	21	0	0	29	29
10	PROGENY/CTR TBD - FY21 - MANASSAS VA / TBD	24	51	200	0	0	17	17	0	0	17	17
11	BOEING INC - ST LOUIS, MO			TBD	0	0	12	12	0	0	9	9

"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).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 2: Mod of Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	58	-	-	-	-	-	-	-	-	-	-	58
Gross/Weapon System Cost *($ in Millions)*	1,224.800	39.997	39.508	57.214	0.000	57.214	36.389	20.557	59.808	60.969	-	1,539.242
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,224.800	39.997	39.508	57.214	0.000	57.214	36.389	20.557	59.808	60.969	-	1,539.242
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,224.800**	**39.997**	**39.508**	**57.214**	**0.000**	**57.214**	**36.389**	**20.557**	**59.808**	**60.969**	**-**	**1,539.242**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	1.904	1.376	1.398	-	1.398	3.370	-	-	-	-	8.048
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	21,117K	-	-	-	-	-	-	-	-	-	-	26,539K

Description:

This line item procures MK 48 Mod 7 Common Broadband Advanced Sonar System (CBASS) kits for Heavyweight Torpedo upgrades and MK48 MOD 8 (TI-1) Guidance & Control (G&C) Section upgrade.

The CBASS torpedo kit consists of three major components: Guidance & Control Box (GCB),EMI filter, a Broadband Sonar Analog Receiver (BSAR), and preamplifier. The GCB continued from Mods in production since FY 2002 and procurement of the BSAR began in FY 2004. The BSAR is a CBASS specific item, which consists of a preamplifier, receiver, and interfacing hardware that provides the capability to transmit and receive over a wide frequency band; taking advantage of broadband signal processing techniques. This provides for improvements in advanced threat countermeasures (CMs) capabilities. the TI-1 Guidance & Control (G&C) section upgrade will supply a new G&C, including a new sonar assembly, GCB, Tuning Box, and Ethernet device switch. TI-1 will also have a new Warhead Electronics Section (WES), to support improved fuzing, and the Improved Post Launch Communication System (IPLCS).

[P5 / D1001 Hardware]: Funding under this cost code provides for the procurement of CBASS hardware kits from the contractor, Engineering Change Proposals (ECP), and Non-Recurring Engineering (NRE) to resolve production issues, including obsolescence. Engineering Services and Engineering Change Proposals (ECPs) pay for studies, plans, design changes, and implementation of design changes by the contractor; primarily due to obsolescence that occurs during the contract performance. Also included in this cost code is the cost of government installation of kits procured in prior years. The installation includes required upgrades to convert the MK 48 Mod 6 Torpedo into a MK 48 Mod 7 Torpedo. The pre-amp, guidance control box, EMI filter, and Broadband Sonar Analog Receiver (BSAR) are installed at the government Intermediate Maintenance Activity. The torpedo goes through a final integration test, is loaded with the operational software, and completes quality assurance checkout prior to issuing it as a warshot or exercise torpedo. Diminishing Manufacturing Sources (DMS) funds are provided to procure electronic parts, which are declared obsolete by the original equipment manufacturing. This is done to avoid the cost of an expensive redesign in the CBASS kit during execution of the production contract, prior to the transition to TI-1 kit production. The contractor will be required to procure, deliver, and store the MK 48 Mod 7 DMS material for these obsolete components. Non-Recurring Engineering (NRE) funds the procurement of Proof of Manufacturing (POM) units for government testing, first article testing, tooling and test equipment, procurement of technical data package updates, and start-up costs for the production contract.

[P5 / D1002 - MK48 TI-1 Hardware]: Program under this cost code provides for the procurement of Low Rate Initial Procurement (LRIP) for TI-1 Guidance & Control Section upgrade, which will supply a new Guidance and Control (G&C) including new Sonar Assembly (higher density array, transmitter, receiver), Guidance and Control Box (GCB), Tuning Box, and an Ethernet device switch. In addition to the G&C section, the TI-1 upgrade will also feature a new Warhead Electronics System (WES) to support improved fuzing and the Improved Post Launch Communications System (IPLCS), which will potentially replace the existing copper guidance wire with fiber optics. Improvements are needed in the presence of countermeasures, shallow water, low Doppler targets, fusing, Very Shallow Water (VSW), and Anti Surface Warfare (ASuW) performance. TI-1 upgrade allows full fleet introduction of the APB-6 and to meet requirements of MK 48 Improvements CDD (857-97-12).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 2: Mod of Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	
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		

[P5 / D1003 - Support and Ancillary Equipment]: Funding under this cost code provides procurement and maintenance of support and test equipment at Naval Undersea Warfare Centers (NUWC) Keyport and the contractor facility for assembly, testing, and integration.

[P5 / D1830 - Production Engineering (Contractor & In-House)]: Production Engineering (Contractor & In-House)]: Funding under this cost code provides for production tasks performed by NUWC NPT and KPT and includes review of contractor generated Engineering Change Proposals (ECP), review and resolution of contractor failures and proposed corrective action, configuration management activities, contractor monitoring, risk analysis, technical problem resolution, software engineering, safety, integrated logistics support, environmental engineering, and information systems. Funding maintains production specification in accordance with production processes, provides subject matter experts to support root cause analysis of failed contractor hardware, and monitor contractor defect reduction processes to ensure deficiencies are effectively addressed. Funding is also provided for program office acquisition support.

[P5 / D1840 - Quality Assurance]: Funding under this cost code provides for quality assurance (QA) tasks performed by NUWC DIV KPT and NPT including: QA review of the contractor and subcontractor's data, review of the documentation indicating conformity to product performance requirements, and review of objective quality evidence.

[P5 / D1860 - Acceptance T&E (Contractor & In-House)]: Funding under this cost code provides for Government production acceptance testing of contractor hardware.

[P5 / D1CA1 - Congressional Add - Obsolescence]: Funding under this cost code provides for production engineering tasks associated with MK-48 hardware obsolescence.

[P5 / D1CA2 - Congressional Add - Tech Insert]: Funding under this cost code provides for production engineering tasks associated with a technology refresh for the MK-48 sonar array and signal processor cards.

[P5 / D1CA3 - Congressional Add - ASW Enhancements]: Funding under this cost code provides for production engineering tasks associated with a technology refresh for the MK-48 sonar array.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 2: Mod of Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / MK-48 Torpedo ADCAP Mods	P-5a, P-21			58 / 1,224.800	- / 39.997	- / 39.508	- / 57.214	- / 0.000	- / 57.214
P-40	**Total Gross/Weapon System Cost**				**58 / 1,224.800**	**- / 39.997**	**- / 39.508**	**- / 57.214**	**- / 0.000**	**- / 57.214**

*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:
FY21 Program Changes:
D1001: CBASS Kits 1.1.2: Unit cost in FY21 increases due to lower quantity of CBASS kits from 54 in FY20 to 30 in FY21. Unit cost for the new contract is estimated based on stepladder prices from the previous contract and escalated at 2.5% to account for cost of materials and obsolescence.

D1001 CBASS Installation 1.1.4: Funding in FY21 increased due to increase in number of government installations of CBASS kits. The program will install procured kits delivered per the P-21 exhibit. In FY21 147 kits (plus an additional 27 kits procured with Replacement in Kind (RIK)) are scheduled to be installed from prior year procurements versus 114 kits installed in FY20.

D1001 (CBASS NRE 1.2.1): Non-Recurring Engineering (NRE) $17.5M is required in FY21 to support a new competitive contract (Base Year and 4 Options) will be awarded and will include Non-Recurring Engineering (NRE) funds for the procurement of 4 Pre-POM units and 2 POM units for government testing, first article testing, tooling and test equipment, procurement of technical data package updates and start-up costs for the production contract.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo ADCAP Mods
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	58	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,224.800	39.997	39.508	57.214	0.000	57.214
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,224.800	39.997	39.508	57.214	0.000	57.214
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,224.800**	**39.997**	**39.508**	**57.214**	**0.000**	**57.214**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	1.904	1.376	1.398	-	1.398
Gross/Weapon System Unit Cost *($ in Dollars)*	21,117K	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - D1001 Hardware Cost																		
Recurring Cost																		
1.1.1) ADCAP Mod Kits	-	-	228.988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2) CBASS Kits(†)	293,101.23	978	286.653	205,964.00	79	16.271	231,462.96	54	12.499	292,500.00	30	8.775	-	-	-	292,500.00	30	8.775
1.1.3) CBASS Engineering Services/ ECPs	-	-	32.953	-	-	5.404	-	-	5.065	-	-	5.332	-	-	-	-	-	5.332
1.1.4) CBASS Installation (1)	-	-	43.225	-	-	3.135	-	-	6.612	-	-	10.266	-	-	-	-	-	10.266
1.1.5) Diminishing Manufacturing Sources	-	-	1.322	-	-	0.200	-	-	0.200	-	-	0.206	-	-	-	-	-	0.206
Subtotal: Recurring Cost	-	-	*593.141*	-	-	*25.010*	-	-	*24.376*	-	-	*24.579*	-	-	-	-	-	*24.579*
Non Recurring Cost																		
1.2.1) CBASS NRE	-	-	50.497	-	-	-	-	-	-	-	-	17.506	-	-	-	-	-	17.506
Subtotal: Non Recurring Cost	-	-	*50.497*	-	-	-	-	-	-	-	-	*17.506*	-	-	-	-	-	*17.506*
Subtotal: Hardware - D1001 Hardware Cost	**-**	**-**	***643.638***	**-**	**-**	***25.010***	**-**	**-**	***24.376***	**-**	**-**	***42.085***	**-**	**-**	**-**	**-**	**-**	***42.085***
Support - D1003 - Support and Ancillary Equipment Cost																		
3.1) Support & Ancillary Equipment	-	-	54.827	-	-	1.651	-	-	1.684	-	-	1.718	-	-	-	-	-	1.718

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	P-1 Line Item Number / Title: 3225 / MK-48 Torpedo ADCAP Mods	Item Number / Title [DODIC]: 1 / MK-48 Torpedo ADCAP Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Subtotal: Support - D1003 - Support and Ancillary Equipment Cost	**-**	**-**	***54.827***	**-**	**-**	***1.651***	**-**	**-**	***1.684***	**-**	**-**	***1.718***	**-**	**-**	**-**	**-**	**-**	***1.718***
Support - D1830 - Production Engineering (Contractor & In-House) Cost																		
4.1) Production Enginnering (Contractor & In-House)	-	-	293.000	-	-	7.563	-	-	7.569	-	-	7.436	-	-	-	-	-	7.436
Subtotal: Support - D1830 - Production Engineering (Contractor & In-House) Cost	**-**	**-**	***293.000***	**-**	**-**	***7.563***	**-**	**-**	***7.569***	**-**	**-**	***7.436***	**-**	**-**	**-**	**-**	**-**	***7.436***
Support - D1840 - Quality Assurance Cost																		
5.1) Quality Assurance (In-House)	-	-	25.783	-	-	2.889	-	-	2.944	-	-	3.006	-	-	-	-	-	3.006
Subtotal: Support - D1840 - Quality Assurance Cost	**-**	**-**	***25.783***	**-**	**-**	***2.889***	**-**	**-**	***2.944***	**-**	**-**	***3.006***	**-**	**-**	**-**	**-**	**-**	***3.006***
Support - D1860 - Acceptance T&E (Contractor & In-House) Cost																		
6.1) Acceptance T&E (Contractor & In-House)	-	-	188.452	-	-	2.884	-	-	2.935	-	-	2.969	-	-	-	-	-	2.969
Subtotal: Support - D1860 - Acceptance T&E (Contractor & In-House) Cost	**-**	**-**	***188.452***	**-**	**-**	***2.884***	**-**	**-**	***2.935***	**-**	**-**	***2.969***	**-**	**-**	**-**	**-**	**-**	***2.969***
Support - D1CA1 - Congressional Add - Obsolescence Cost																		
7.1) Congressional Add - Obsolescence	-	-	10.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - D1CA1 - Congressional Add - Obsolescence Cost	**-**	**-**	***10.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - D1CA2 - Congressional Add - Tech Insert Cost																		
8.1) Congressional Add - Tech Insertion	-	-	2.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - D1CA2 - Congressional Add - Tech Insert Cost	**-**	**-**	***2.700***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - D1CA3 - Congressional Add - ASW Enhancements Cost																		
9.1) Congressional Add - ASW Enhancements	-	-	6.400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - D1CA3 - Congressional Add - ASW Enhancements Cost	**-**	**-**	***6.400***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**21,117K**	**58**	**1,224.800**	**-**	**-**	**39.997**	**-**	**-**	**39.508**	**-**	**-**	**57.214**	**-**	**-**	**0.000**	**-**	**-**	**57.214**

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo ADCAP Mods
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(†) indicates the presence of a P-5a

Footnotes:

(1) FY21 increased due to increase in number of government installations of CBASS kits. The program will install procured kits delivered per the P-21 exhibit. In FY21 147 kits (plus an additional 27 kits procured with RIK) are scheduled to be installed from prior year procurements.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	P-1 Line Item Number / Title: 3225 / MK-48 Torpedo ADCAP Mods	Item Number / Title [DODIC]: 1 / MK-48 Torpedo ADCAP Mods

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.2) CBASS Kits(†)		2012	LOCKHEED MARTIN/ SIPPICAN / Marion, MA	C / FPIF	NAVSEA	Aug 2012	Oct 2015	58	237,103.45	Y		
1.1.2) CBASS Kits(†)		2013	LOCKHEED MARTIN/ SIPPICAN / Marion, MA	C / FPIF	NAVSEA	Aug 2013	Mar 2016	114	214,026.32	Y		
1.1.2) CBASS Kits(†)		2014	LOCKHEED MARTIN/SIPPICAN FY14 Option / Marion, MA	C / FPIF	NAVSEA	Aug 2014	May 2017	108	226,351.85	Y		
1.1.2) CBASS Kits(†)		2015	LOCKHEED MARTIN/SIPPICAN FY15 Option / Marion, MA	C / FPIF	NAVSEA	Sep 2015	Oct 2017	44	290,496.00	Y		
1.1.2) CBASS Kits(†)		2016	LOCKHEED MARTIN/ SIPPICAN FY16 / Marion, MA	C / FFP	NAVSEA	May 2016	May 2019	81	241,517.00	Y		
1.1.2) CBASS Kits(†)		2017	LOCKHEED MARTIN/SIPPICAN FY17 Option / Marion, MA	C / FFP	NAVSEA	Sep 2017	May 2020	75	214,075.00	Y		
1.1.2) CBASS Kits(†)		2018	LOCKHEED MARTIN/SIPPICAN FY18 Option / Marion, MA	C / FFP	NAVSEA	Aug 2018	Sep 2020	79	204,193.00	Y		
1.1.2) CBASS Kits(†)		2019	LOCKHEED MARTIN/SIPPICAN FY19 Option / Marion, MA	C / FFP	NAVSEA	Jun 2019	Jan 2021	79	205,964.00	Y		
1.1.2) CBASS Kits(†)		2020 (2)	LOCKHEED MARTIN/SIPPICAN FY20 Option / Marion, MA	C / FFP	NAVSEA	May 2020	Nov 2021	54	231,462.96	Y		
1.1.2) CBASS Kits(†)		2021 (3)	TBD (Competitive Procurement) / TBD	C / FFP	NAVSEA	May 2021	May 2024	30	292,500.00	Y		

(†) indicates the presence of a P-21

Footnotes:

(2) Unit cost is based on the contract costs. Unit cost is determined by quantity planned for order. All the production contracts have stair step pricing, so as quantity increases and crosses a stair step, the price steps down. In FY20 the unit cost for 54 is in a lower cost step ladder than what we are predicting in FY21. FY21 is also the first year of a new competitive contract award which is why we have NRE and a lower quantity.

(3) New competitive contract award in FY 2021. Longer lead time due to delivery of Proof of Manufacturing (POM) units prior to FRP.

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo ADCAP Mods

Cost Elements (Units in Each)							Fiscal Year 2012												Fiscal Year 2013												BALANCE
										Calendar Year 2012												Calendar Year 2013									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2011	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) CBASS Kits																															
Prior Years Deliveries: 419																															
	1	2012	NAVY	58	0	58											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	58
	1	2013	NAVY	114	0	114																							A -	-	114
	2	2014	NAVY	108	0	108																									108
	3	2015	NAVY	44	0	44																									44
	4	2016	NAVY	81	0	81																									81
	5	2017	NAVY	75	0	75																									75
	6	2018	NAVY	79	0	79																									79
	7	2019	NAVY	79	0	79																									79
	8	2020	NAVY	54	0	54																									54
	9	2021	NAVY	30	0	30																									30
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo ADCAP Mods

Cost Elements (Units in Each)							Fiscal Year 2014												Fiscal Year 2015												BALANCE
							Calendar Year 2014												Calendar Year 2015												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) CBASS Kits																															
Prior Years Deliveries: 419																															
	1	2012	NAVY	58	0	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58
	1	2013	NAVY	114	0	114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	114
	2	2014	NAVY	108	0	108											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	108
	3	2015	NAVY	44	0	44																								A -	44
	4	2016	NAVY	81	0	81																									81
	5	2017	NAVY	75	0	75																									75
	6	2018	NAVY	79	0	79																									79
	7	2019	NAVY	79	0	79																									79
	8	2020	NAVY	54	0	54																									54
	9	2021	NAVY	30	0	30																									30
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2

P-1 Line Item Number / Title: 3225 / MK-48 Torpedo ADCAP Mods

Item Number / Title [DODIC]: 1 / MK-48 Torpedo ADCAP Mods

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
										Calendar Year 2016												Calendar Year 2017									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) CBASS Kits																															
Prior Years Deliveries: 419																															
	1	2012	NAVY	58	0	58	5	14	8	13	18																				0
	1	2013	NAVY	114	0	114	-	-	-	-	-	6	6	8	8	14	3	3	8	10	10	18	20								0
	2	2014	NAVY	108	0	108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	23	20	14	14	17
	3	2015	NAVY	44	0	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44
	4	2016	NAVY	81	0	81								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81
	5	2017	NAVY	75	0	75																								A -	75
	6	2018	NAVY	79	0	79																									79
	7	2019	NAVY	79	0	79																									79
	8	2020	NAVY	54	0	54																									54
	9	2021	NAVY	30	0	30																									30
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo ADCAP Mods

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) CBASS Kits																															
Prior Years Deliveries: 419																															
	1	2012	NAVY	58	58	0																									0
	1	2013	NAVY	114	114	0																									0
	2	2014	NAVY	108	91	17	17																								0
	3	2015	NAVY	44	0	44	2	2	17	17	6																				0
	4	2016	NAVY	81	0	81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	31
	5	2017	NAVY	75	0	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75
	6	2018	NAVY	79	0	79											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	79
	7	2019	NAVY	79	0	79																					A -	-	-	-	79
	8	2020	NAVY	54	0	54																									54
	9	2021	NAVY	30	0	30																									30
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo ADCAP Mods

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
										Calendar Year 2020												Calendar Year 2021									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) CBASS Kits																															
Prior Years Deliveries: 419																															
	1	2012	NAVY	58	58	0																									0
	1	2013	NAVY	114	114	0																									0
	2	2014	NAVY	108	108	0																									0
	3	2015	NAVY	44	44	0																									0
	4	2016	NAVY	81	50	31	10	10	11																						0
	5	2017	NAVY	75	0	75	-	-	-	-	-	-	-	13	13	13	13	13	10												0
	6	2018	NAVY	79	0	79	-	-	-	-	-	-	-	-	-	-	-	14	14	14	14	14	9								0
	7	2019	NAVY	79	0	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	8	8	8	8	8	8	8	7
	8	2020	NAVY	54	0	54								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54
	9	2021	NAVY	30	0	30																				A -	-	-	-	-	30
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo ADCAP Mods

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) CBASS Kits																															
Prior Years Deliveries: 419																															
	1	2012	NAVY	58	58	0																									0
	1	2013	NAVY	114	114	0																									0
	2	2014	NAVY	108	108	0																									0
	3	2015	NAVY	44	44	0																									0
	4	2016	NAVY	81	81	0																									0
	5	2017	NAVY	75	75	0																									0
	6	2018	NAVY	79	79	0																									0
	7	2019	NAVY	79	72	7	7																								0
	8	2020	NAVY	54	0	54	-	6	6	6	6	5	5	5	5	5	5														0
	9	2021	NAVY	30	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo ADCAP Mods

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
							Calendar Year 2024												Calendar Year 2025												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.2) CBASS Kits																															
Prior Years Deliveries: 419																															
	1	2012	NAVY	58	58	0																									0
	1	2013	NAVY	114	114	0																									0
	2	2014	NAVY	108	108	0																									0
	3	2015	NAVY	44	44	0																									0
	4	2016	NAVY	81	81	0																									0
	5	2017	NAVY	75	75	0																									0
	6	2018	NAVY	79	79	0																									0
	7	2019	NAVY	79	79	0																									0
	8	2020	NAVY	54	54	0																									0
	9	2021	NAVY	30	0	30	-	-	-	-	-	-	-	3	3	3	5	5	3	4	4										0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3225 / MK-48 Torpedo ADCAP Mods	**Item Number / Title [DODIC]:** 1 / MK-48 Torpedo ADCAP Mods

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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/ SIPPICAN - Marion, MA	89	148	240	0	3	25	28	0	3	23	26
2	LOCKHEED MARTIN/ SIPPICAN FY14 Option - Marion, MA	89	148	240	0	0	0	0	0	0	20	20
3	LOCKHEED MARTIN/ SIPPICAN FY15 Option - Marion, MA	89	148	240	0	0	0	0	0	0	25	25
4	LOCKHEED MARTIN/ SIPPICAN FY16 - Marion, MA			90	0	0	36	36	0	0	0	0
5	LOCKHEED MARTIN/ SIPPICAN FY17 Option - Marion, MA			90	0	0	32	32	0	0	0	0
6	LOCKHEED MARTIN/ SIPPICAN FY18 Option - Marion, MA			90	0	0	26	26	0	0	25	25
7	LOCKHEED MARTIN/ SIPPICAN FY19 Option - Marion, MA			90	0	0	26	26	0	0	19	19
8	LOCKHEED MARTIN/ SIPPICAN FY20 Option - Marion, MA			90	0	0	18	18	0	0	18	18
9	TBD (Competitive Procurement) - TBD			TBD	0	0	36	36	0	0	36	36

"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 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 2: Mod of Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3231 / Maritime Mines

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	69.220	9.733	5.183	5.832	0.000	5.832	8.681	9.292	44.966	46.291	-	199.198
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	69.220	9.733	5.183	5.832	0.000	5.832	8.681	9.292	44.966	46.291	-	199.198
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**69.220**	**9.733**	**5.183**	**5.832**	**0.000**	**5.832**	**8.681**	**9.292**	**44.966**	**46.291**	**-**	**199.198**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This funding procures all naval mines for use as anti-ship or anti-submarine subsurface weapons. The Naval mining capability consists of the QUICKSTRIKE (QS) mine, the Submarine Launched Mobile Mine (SLMM), the Clandestine Delivered Mine (CDM), and the Hammerhead Encapsulated Effector.

QUICKSTRIKE is a family of shallow water, aircraft laid mines used primarily against surface and subsurface craft. QUICKSTRIKE (QS) family of delivered mines has 3 variants based on size - the MK 62, MK 63, and MK 65. The MK 62 and MK 63 (500 lb. and 1000 lb.) QS are created by adding mine hardware to the MK 82 and MK 83 general purpose bomb (respectively) to form a mine. The MK 65 (2000 lb.) QS consists entirely of hardware designed for use as a mine. The Mod 0, 1, and 3 variants utilize various Target Detection Devices (TDD). The QS Mod 3 utilizes a TDD MK 71, which is a software-programmable device capable of being programmed to optimize detection of new threats. For the QS MK 62 and 63, the QS Mod 3 Kit consists of the TDD MK 71, MK 75 Safe/Arming (S&A) device, MK 176 battery, MK 163 TDD Adapter Ring, and miscellaneous hardware. For the QS MK 65, the Mod 3 Kit consists of the TDD MK 71, the existing S&A devices, the existing batteries (MK 131 or 132), MK 157 TDD Adapter, and miscellaneous hardware. Additional support hardware for the QS MK 62/63/65 Mod 3 includes MK 650 Test Set and MK 11 Programmer.

The MK 67 SLMM is the only submarine launched mine.

The CDM uses existing SLMM components to provide a mine which is delivered by unmanned maritime platforms. The CDM program is being developed and procured using an incremental approach to improve capability over time and to align with delivery platform availability. The first increment replicates the SLMM capability. The second increment provides a remote control capability and incorporates the MK 71 TDD used on the Quickstrike Mod 3. The third increment upgrades the fuzing system to allow reversible arming and disarming functions for multiple cycles.

Beginning in FY 2021, the engineering design, testing, aircraft certification, and procurement of QS Extended Range components for an all-up-round begins. The modular kit consists of existing JDAM tail kits, which provides a guidance system and standardized interfaces between the weapon and aircraft, plus a set of folding wings to increase the range of the weapon. The result is the ability to precisely emplace mines in a desired location from a distance with less risk to the delivery aircraft.

Beginning in FY 2024, procurement of primary hardware and support equipment begins for the Encapsulated Effector, aka Hammerhead, program. Primary hardware includes canisters and anchors for each mine as well as onboard sensing and processing. The Hammerhead program compliments current shallow-water mines, and expands the operational employment areas available to Fleet commanders. Each Hammerhead system uses a self-contained weapon which is released when a target is detected, using mobility to engage the target. The system uses modern sensing and processing technology to enable

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 2: Mod of Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3231 / Maritime Mines	
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		

accurate targeting at increased range. This procurement provides low rate initial production units following development and testing of engineering design models. Hammerhead development efforts are funded in PE 0604601N, Project 2993.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 2: Mod of Torpedoes and Related Equip	**P-1 Line Item Number / Title:** 3231 / Maritime Mines

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Quickstrike Mine				- / 69.220	- / 9.733	- / 5.183	- / 5.317	- / 0.000	- / 5.317
P-5	3 / Quickstrike Extended Range				- / 0.000	- / 0.000	- / 0.000	- / 0.515	- / 0.000	- / 0.515
P-40	**Total Gross/Weapon System Cost**				**- / 69.220**	**- / 9.733**	**- / 5.183**	**- / 5.832**	**- / 0.000**	**- / 5.832**

*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 2021 funding supports Quickstrike hardware procurements toward the inventory objective. This funding includes procurement of miscellaneous Quickstrike Extended Range support equipment, such as handling gear and interface adapters. This equipment will be required to support testing and will be transitioned to fleet assets upon initial delivery.

Efforts within this program support JEON PC-0012 Advanced Mining.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3231 / Maritime Mines	**Item Number / Title [DODIC]:** 1 / Quickstrike Mine
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	69.220	9.733	5.183	5.317	0.000	5.317
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	69.220	9.733	5.183	5.317	0.000	5.317
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**69.220**	**9.733**	**5.183**	**5.317**	**0.000**	**5.317**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) TDD MK-71	-	-	28.340	-	-	1.898	-	-	1.763	-	-	1.818	-	-	0.000	-	-	1.818
1.1.2) MK-65 Mod Kit	-	-	3.376	-	-	0.456	-	-	0.466	-	-	0.475	-	-	0.000	-	-	0.475
1.1.3) MK-62/63 Mod Kit	-	-	12.316	-	-	3.772	-	-	1.810	-	-	1.846	-	-	0.000	-	-	1.846
1.1.4) Support Equipment	-	-	5.853	-	-	0.352	-	-	0.359	-	-	0.367	-	-	0.000	-	-	0.367
1.1.5) Clandestine Delivered Mine (CDM)	-	-	2.000	-	-	2.538	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.6) Production ECP (HW/SW)	-	-	1.686	-	-	0.084	-	-	0.086	-	-	0.088	-	-	0.000	-	-	0.088
1.1.7) Data Recorder	-	-	0.879	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.8) SLMM	-	-	2.187	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*56.637*	-	-	*9.100*	-	-	*4.484*	-	-	*4.594*	-	-	*0.000*	-	-	*4.594*
Subtotal: Hardware Cost	**-**	**-**	***56.637***	**-**	**-**	***9.100***	**-**	**-**	***4.484***	**-**	**-**	***4.594***	**-**	**-**	***0.000***	**-**	**-**	***4.594***
Support Cost																		
2.1) Production Engineering	-	-	11.876	-	-	0.516	-	-	0.580	-	-	0.601	-	-	0.000	-	-	0.601
2.2) Integrated Logistics Support	-	-	0.707	-	-	0.117	-	-	0.119	-	-	0.122	-	-	0.000	-	-	0.122
Subtotal: Support Cost	**-**	**-**	***12.583***	**-**	**-**	***0.633***	**-**	**-**	***0.699***	**-**	**-**	***0.723***	**-**	**-**	***0.000***	**-**	**-**	***0.723***
Gross/Weapon System Cost	**-**	**-**	**69.220**	**-**	**-**	**9.733**	**-**	**-**	**5.183**	**-**	**-**	**5.317**	**-**	**-**	**0.000**	**-**	**-**	**5.317**

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3231 / Maritime Mines	**Item Number / Title [DODIC]:** 1 / Quickstrike Mine
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 2	**P-1 Line Item Number / Title:** 3231 / Maritime Mines	**Item Number / Title [DODIC]:** 3 / Quickstrike Extended Range
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.515	0.000	0.515
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.515	0.000	0.515
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.515**	**0.000**	**0.515**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.3) Support Equipment [1]	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.515	-	-	0.000	-	-	0.515
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.515*	-	-	*0.000*	-	-	*0.515*
Subtotal: Hardware Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.515***	**-**	**-**	***0.000***	**-**	**-**	***0.515***
Gross/Weapon System Cost	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.515**	**-**	**-**	**0.000**	**-**	**-**	**0.515**

Footnotes:

[1] Beginning in FY 2021, funding supports Quickstrike hardware procurements toward the inventory objective. This funding includes procurement of miscellaneous Quickstrike Extended Range support equipment, such as handling gear and interface adapters. This equipment will be required to support testing and will be transitioned to fleet assets upon initial delivery.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 3: Support Equipment	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	587.311	77.828	68.225	97.581	0.000	97.581	92.691	86.449	88.971	90.721	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	587.311	77.828	68.225	97.581	0.000	97.581	92.691	86.449	88.971	90.721	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**587.311**	**77.828**	**68.225**	**97.581**	**0.000**	**97.581**	**92.691**	**86.449**	**88.971**	**90.721**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Torpedo Support Equipment account procures various 4T and associated torpedo components required to ready weapons for Surface Ships, Submarines, Fixed Wing, and Rotary Wing to achieve and maintain a readiness posture sufficient to provide Anti-Submarine Warfare (ASW) and Anti-Surface Warfare (ASUW) readiness. The objective of this line is to provide the fleet with exercise weapons for conducting training maneuvers, which involves firing the torpedoes and maintaining warshot inventories in an operational ready-for-issue (RFI) status in support of combat ready deployment by ASW forces. After a torpedo is fired during a training exercise, it is recovered and all expendable components such as batteries, cables, and igniters (as well as various accessories required for air-launched torpedoes) must be replaced. These items, as well as components such as exercise heads, fuel tanks, and exhaust valves may be used more than one time, but they are worn out or lost in service and are procured each fiscal year in quantities dependent upon the fleet training requirements and tempo of operations. The torpedoes requiring support are the MK-46 Mod 5A(SW); MK-48 Mods 6 (legacy and ACOT) and 7; and MK-54.

[P5 / F8001 - LWT SUPPORT EQUIPMENT]: LIGHTWEIGHT (LWT) Support Equipment procures 4T components to support: (1) Exercise torpedo builds for Fleet Proficiency Surface Command Course and Tactical Development firings; (2) Warshot torpedo maintenance to sustain the fleet with an inventory of RFI warshot torpedoes as they come due for maintenance; (3) Assembly of new production MK-54 Warshots (4) Vertical Launch Anti-Submarine Rocket (ASROC) (VLA) Warshot and Exercise missile assemblies; and (5) Various air launch frame assemblies to support Fleet loadout. LWT 4T Components include the following: seawater batteries, pressure cylinders, thermal batteries, fuel shutoff valves, gas generator assemblies, igniters, containers, lanyard start assemblies, electrical initiators, suspension bands, VLA assembly kits, and propeller baffles.

[P5 / F8002 LIGHTWEIGHT OTHER EQUIPMENT INVESTMENT]: Procures, installs, and supports Engineering Change Proposal/Ordnance Alteration (ECP/ORDALT) material required for support and test equipment and to retrofit torpedoes and 4T components to the latest RFI configuration.

[P5 / F8830 LIGHTWEIGHT PRODUCTION ENGINEERING - IN HOUSE]: Provides for production support services at Naval Undersea Warfare Center (NUWC) Divisions Keyport/Newport (KPT/NPT) including program planning, funds management, budgeting, data management, acquisition engineering, software management, Integrated Logistiscs Support (ILS) and Government-Furnished Equipment (GFE) management, training equipment and configuration management.

[P5 / F8840 - LIGHTWEIGHT QUALITY ASSURANCE]: Provides material costs associated with failure analysis and site investigations for torpedo system component failures, product quality assurance (QA), and critical unique firing tests.

[P5 / F8860 - LIGHTWEIGHT ACCEPTANCE TEST AND EVALUATION]: Provides support for acceptance testing of LWT 4T components.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 3: Support Equipment	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	
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		

[P5 / F8900 - LIGHTWEIGHT PRODUCTION ENGINEERING - CONTRACTOR]: Provides for production support services including program planning, funds management, budgeting, and data management.

[P5 - 2 / F8003 LIGHTWEIGHT RECOVERABLE EXERCISE TORPEDO (REXTORP)]: Provides for the procurement of MK-54 REXTORPs. REXTORPs provide a reusable exercise inert torpedo shape for fixed wing, rotary, and surface launched platforms in support of Fleet ASW training and readiness.

[P5 - 3 / F8100 - HEAVYWEIGHT EXERCISE AND EXPENDABLES AND COMPONENT REPLACEMENT]: Procures 4T components to support: (1) exercise torpedo builds for fleet proficiency in the submarine and surface command course and tactical development firings; (2) warshot torpedo maintenance to sustain the fleet with an inventory of RFI warshot torpedoes as they come due for maintenance; and (3) assembly of modernized MK-48 Mod 7 components back to an All-Up-Round (AUR) configuration, either exercise or warshot. HWT 4T components include the following: wire coils, flex hoses, Otto Fuel, igniters, propellant, A-cables, A-cable inserts, A-cable receptacles, cylinder barrels, exercise fuel tanks, containers, and chamber and valves.

[P5 - 3 / F8101 - HEAVYWEIGHT OTHER EQUIPMENT INVESTMENT]: Procure modernized Automatic Test Equipment (ATE) to perform full-up automatic comprehensive system testing of all Torpedo MK 48 variants in an All-Up-Round (AUR) torpedo configuration. Support numerous additional testing evolutions, including factory acceptance testing, proofing, periodic maintenance, group testing, and weapon turnaround/conversion activities.

[P5 - 3 / F8843 - HEAVYWEIGHT QUALITY ASSURANCE]: Provides material costs associated with failure analysis and site investigations for torpedo system component failures and product QA and critical unique firing tests.

[P5 - 3 / F8833 - HEAVYWEIGHT PRODUCTION ENGINEERING - IN HOUSE]: Provides for production support services at NUWC Divisions KPT/NPT including program planning, funds management, budgeting, data management, acquisition engineering, software management, ILS, and GFE management, training equipment, and configuration management.

[P5 - 3 / F8863 - HEAVY WEIGHT ACCEPTANCE TEST AND EVALUATION]: Provides support for acceptance testing of HWT 4T components.

[P5 - 3 / F8893 - HEAVYWEIGHT PRODUCTION ENGINEERING - CONTRACTOR]: Provides for production support services including program planning, funds management, budgeting, and data management.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 3: Support Equipment	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Lightweight Torpedo Support Equipment	P-5a, P-21			- / 161.321	- / 33.661	- / 21.084	- / 32.323	- / 0.000	- / 32.323
P-5	2 / Recoverable Exercise Torpedo	P-5a			- / 12.706	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-5	3 / Heavyweight Torpedo Support Equipment	P-5a, P-21			- / 413.284	- / 44.167	- / 47.141	- / 65.258	- / 0.000	- / 65.258
P-40	**Total Gross/Weapon System Cost**				**- / 587.311**	**- / 77.828**	**- / 68.225**	**- / 97.581**	**- / 0.000**	**- / 97.581**

*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:
FY21 Program Changes:

Lightweight Torpedo Support Equipment
F8001: $10.8M increase from FY20 to FY21 in cost element 1.1.29 is for 22 Vertical Launch ASROC (Anti-Submarine Rocket) VLA Refurbishment kits required to maintain current VLA inventory.

Heavyweight Torpedo Support Equipment
F8100: $15M budget increase in FY21 provided to address a shortfall in Ready-For-Issue (RFI) combat-ready Heavyweight torpedoes for submarines. This funding procures replacement warshot afterbodies required to return warshot torpedoes to a RFI combat-ready status.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 1 / Lightweight Torpedo Support Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	161.321	33.661	21.084	32.323	0.000	32.323
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	161.321	33.661	21.084	32.323	0.000	32.323
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**161.321**	**33.661**	**21.084**	**32.323**	**0.000**	**32.323**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - F8001 - LWT SUPPORT EQUIPMENT Cost																		
Recurring Cost																		
1.1.1) F8001 MK46 Maintenance Kits	329.82	285	0.094	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) F8001 MK 54 Turnaround Kits (CWQB)(†)	124.49	2,225	0.277	104.53	400	0.042	107.50	400	0.043	108.75	400	0.044	-	-	0.000	108.75	400	0.044
1.1.3) F8001 MK54 Maintenance Kits (BWLW)(†)	451.70	735	0.332	449.79	200	0.090	460.00	200	0.092	467.96	200	0.094	-	-	0.000	467.96	200	0.094
1.1.4) F8001 MK54 Pinger Kits (BWLX)(†)	45.40	1,630	0.074	50.19	400	0.020	50.00	400	0.020	52.21	400	0.021	-	-	0.000	52.21	400	0.021
1.1.5) F8001 MK54 Lanyard Start Assembly (BWJA)(†)	1,825.43	2,635	4.810	1,691.32	400	0.677	1,725.00	400	0.690	1,759.65	400	0.704	-	-	0.000	1,759.65	400	0.704
1.1.6) F8001 Propeller Baffles (CWRJ)(†)	295.84	2,187	0.647	232.02	200	0.046	235.00	200	0.047	241.41	200	0.048	-	-	0.000	241.41	200	0.048
1.1.7) F8001 Thermal Battery (5W15)(†)	2,759.02	1,830	5.049	1,548.94	400	0.620	1,580.00	400	0.632	1,611.52	400	0.645	-	-	0.000	1,611.52	400	0.645
1.1.8) F8001 Battery, TDS (MK 54) (CWRP)(†)	182.40	1,875	0.342	187.95	400	0.075	192.50	400	0.077	195.54	400	0.078	-	-	0.000	195.54	400	0.078

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 1 / Lightweight Torpedo Support Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1.1.9) F8001 Battery, Scuttle (MK54) (CWRQ)(†)	210.53	950	0.200	209.81	400	0.084	215.00	400	0.086	218.28	400	0.087	-	-	0.000	218.28	400	0.087
1.1.10) F8001 MK54 Igniter (TH04)(†)	770.83	2,400	1.850	769.94	400	0.308	785.00	400	0.314	801.05	400	0.320	-	-	0.000	801.05	400	0.320
1.1.11) F8001 MK54 BSS Bags(†)	24,125.00	16	0.386	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.12) F8001 Electric Initiator(†)	1,840.00	200	0.368	1,475.00	200	0.295	1,505.00	400	0.602	1,535.00	400	0.614	-	-	0.000	1,535.00	400	0.614
1.1.13) F8001 Generator Assembly, Gas(†)	13,726.96	586	8.044	10,676.67	310	3.310	10,890.00	200	2.178	11,106.67	200	2.221	-	-	0.000	11,106.67	200	2.221
1.1.14) F8001 Valve Assembly , Fuel Shutoff (3W41)(†)	798.59	1,415	1.130	748.89	400	0.300	765.00	400	0.306	780.00	400	0.312	-	-	0.000	780.00	400	0.312
1.1.15) F8001 Pressure Cylinder, Warshot (YW09)(†)	1,014.64	1,434	1.455	1,025.85	200	0.205	1,046.67	300	0.314	1,066.67	300	0.320	-	-	0.000	1,066.67	300	0.320
1.1.16) F8001 Pressure Cylinder, Exercise (TW58)(†)	1,150.57	963	1.108	1,133.33	240	0.272	1,154.17	240	0.277	1,179.17	240	0.283	-	-	0.000	1,179.17	240	0.283
1.1.17) F8001 MK46 Seawater Batteries	1,162.50	400	0.465	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.18) F8001 MK31 Stabilizer (QW47)(†)	2,031.43	1,400	2.844	1,882.50	400	0.753	1,920.00	400	0.768	1,960.00	400	0.784	-	-	0.000	1,960.00	400	0.784
1.1.19) F8001 VLA Reassembly Kits(†)	3,246.71	304	0.987	2,800.00	30	0.084	2,833.33	30	0.085	2,900.00	30	0.087	-	-	0.000	2,900.00	30	0.087
1.1.20) F8001 VLA Thermal Battery (CWEC)(†)	1,621.28	235	0.381	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.21) F8001 VLA Separator Nut Initiator (MT99)(†)	1,197.73	880	1.054	960.00	50	0.048	980.00	50	0.049	1,000.00	50	0.050	-	-	0.000	1,000.00	50	0.050
1.1.22) F8001 MK792/0 Universal AUR Container	-	-	1.781	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.23) F8001 Universal REXTORP Containers	46,757.14	70	3.273	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 1 / Lightweight Torpedo Support Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1.1.24) F8001 Sonobuoys(†)	2,333.33	384	0.896	2,740.21	48	0.132	2,791.67	48	0.134	2,854.17	48	0.137	-	-	0.000	2,854.17	48	0.137
1.1.25) F8001 SWT Target Procurement	-	-	0.478	-	-	0.075	-	-	0.077	-	-	0.078	-	-	0.000	-	-	0.078
1.1.26) F8001 VLA Telemetry Kits(†)	103,250.00	24	2.478	102,390.00	4	0.410	104,500.00	4	0.418	106,500.00	4	0.426	-	-	0.000	106,500.00	4	0.426
1.1.27) F8001 Suspension Bands (T107)(†)	2,364.33	1,452	3.433	2,344.44	400	0.938	2,390.00	400	0.956	2,437.78	400	0.975	-	-	0.000	2,437.78	400	0.975
1.1.28) F8001 Otto Fuel Reclamation	-	-	4.282	-	-	0.444	-	-	0.453	-	-	0.462	-	-	0.000	-	-	0.462
1.1.29) F8001 VLA Refurbishment Kits(†)	663,709.09	55	36.504	555,227.27	22	12.215	-	-	0.000	491,818.18	22	10.820	-	-	0.000	491,818.18	22	10.820
1.1.30) F8001 ECP/ ORDALT	-	-	0.023	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.31) F8001 4T Procurement Support	-	-	0.059	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.32) F8001 MK 28 Stabilizer (TA68)(†)	4,471.58	475	2.124	4,626.67	300	1.388	4,720.00	300	1.416	4,813.33	300	1.444	-	-	0.000	4,813.33	300	1.444
Subtotal: Recurring Cost	-	-	*87.228*	-	-	*22.831*	-	-	*10.034*	-	-	*21.054*	-	-	*0.000*	-	-	*21.054*
Subtotal: Hardware - F8001 - LWT SUPPORT EQUIPMENT Cost	**-**	**-**	***87.228***	**-**	**-**	***22.831***	**-**	**-**	***10.034***	**-**	**-**	***21.054***	**-**	**-**	***0.000***	**-**	**-**	***21.054***
Hardware - F8002 LIGHTWEIGHT OTHER EQUIPMENT INVESTMENT Cost																		
Recurring Cost																		
2.1.1) F8002 Lightweight Other Equipment Investment	-	-	32.017	-	-	6.330	-	-	6.459	-	-	6.587	-	-	0.000	-	-	6.587
Subtotal: Recurring Cost	-	-	*32.017*	-	-	*6.330*	-	-	*6.459*	-	-	*6.587*	-	-	*0.000*	-	-	*6.587*
Subtotal: Hardware - F8002 LIGHTWEIGHT OTHER EQUIPMENT INVESTMENT Cost	**-**	**-**	***32.017***	**-**	**-**	***6.330***	**-**	**-**	***6.459***	**-**	**-**	***6.587***	**-**	**-**	***0.000***	**-**	**-**	***6.587***
Support - F8830 LIGHTWEIGHT PRODUCTION ENGINEERING - IN HOUSE Cost																		
3.1) F8830 Lightweight Production Engineering (In House)	-	-	33.024	-	-	3.930	-	-	4.009	-	-	4.089	-	-	0.000	-	-	4.089
Subtotal: Support - F8830 LIGHTWEIGHT	**-**	**-**	***33.024***	**-**	**-**	***3.930***	**-**	**-**	***4.009***	**-**	**-**	***4.089***	**-**	**-**	***0.000***	**-**	**-**	***4.089***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 1 / Lightweight Torpedo Support Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	**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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
PRODUCTION ENGINEERING - IN HOUSE Cost																		
Support - F8840 - LIGHTWEIGHT QUALITY ASSURANCE Cost																		
4.1) F8840 Lightweight Quality Assurance	-	-	0.297	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - F8840 - LIGHTWEIGHT QUALITY ASSURANCE Cost	**-**	**-**	***0.297***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - F8860 - LIGHTWEIGHT ACCEPTANCE TEST AND EVALUATION Cost																		
5.1) F8860 Lightweight Acceptance Test and Evaluation	-	-	5.572	-	-	0.270	-	-	0.276	-	-	0.281	-	-	0.000	-	-	0.281
Subtotal: Support - F8860 - LIGHTWEIGHT ACCEPTANCE TEST AND EVALUATION Cost	**-**	**-**	***5.572***	**-**	**-**	***0.270***	**-**	**-**	***0.276***	**-**	**-**	***0.281***	**-**	**-**	***0.000***	**-**	**-**	***0.281***
Support - F8900 - LIGHTWEIGHT PRODUCTION ENGINEERING - CONTRACTOR Cost																		
6.1) F8900 Lightweight Production Engineering - Contractor	-	-	3.183	-	-	0.300	-	-	0.306	-	-	0.312	-	-	0.000	-	-	0.312
Subtotal: Support - F8900 - LIGHTWEIGHT PRODUCTION ENGINEERING - CONTRACTOR Cost	**-**	**-**	***3.183***	**-**	**-**	***0.300***	**-**	**-**	***0.306***	**-**	**-**	***0.312***	**-**	**-**	***0.000***	**-**	**-**	***0.312***
Gross/Weapon System Cost	**-**	**-**	**161.321**	**-**	**-**	**33.661**	**-**	**-**	**21.084**	**-**	**-**	**32.323**	**-**	**-**	**0.000**	**-**	**-**	**32.323**

Remarks:
[Hardware] 4T material is consumed by the Fleet and IMAs each year, and must be replaced to maintain required inventory levels (2 year stock level). If funds are marked due to contract award delays, the next years funding is not adequate to replenish material consumed in the year prior, resulting in reduced inventory putting future torpedo builds at risk. All production deliveries, Fleet training, and Warshot maintenance builds depend on 4T material being readily available.

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 1 / Lightweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.2) F8001 MK 54 Turnaround Kits (CWQB)		2015	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Nov 2015	Apr 2016	350	102.86	Y		May 2015
1.1.2) F8001 MK 54 Turnaround Kits (CWQB)		2016	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Jan 2016	Jun 2016	400	115.13	Y		
1.1.2) F8001 MK 54 Turnaround Kits (CWQB)		2017	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Sep 2017	Apr 2018	400	98.52	Y		
1.1.2) F8001 MK 54 Turnaround Kits (CWQB)		2018	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Sep 2018	Feb 2019	450	105.46	Y		
1.1.2) F8001 MK 54 Turnaround Kits (CWQB)		2019	CMO Industries INC / Buffalo, MN	C / FFP	NAVSUP-WSS	Jul 2019	Dec 2019	400	104.53	Y		
1.1.2) F8001 MK 54 Turnaround Kits (CWQB)		2020	TBD / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2020	Oct 2020	400	107.50	Y		
1.1.2) F8001 MK 54 Turnaround Kits (CWQB)		2021	TBD / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2021	Oct 2021	400	108.75	Y		
1.1.3) F8001 MK54 Maintenance Kits (BWLW)		2015	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Nov 2015	Apr 2016	35	542.86	Y		May 2015
1.1.3) F8001 MK54 Maintenance Kits (BWLW)		2016	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	May 2016	Nov 2016	35	571.43	Y		
1.1.3) F8001 MK54 Maintenance Kits (BWLW)		2017	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Sep 2017	Mar 2018	300	423.97	Y		
1.1.3) F8001 MK54 Maintenance Kits (BWLW)		2018	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Sep 2018	Feb 2019	300	453.81	Y		
1.1.3) F8001 MK54 Maintenance Kits (BWLW)		2019	Wair Products / Minneapolis, MN	C / FFP	NAVSUP-WSS	Jul 2019	Jan 2020	200	449.79	Y		
1.1.3) F8001 MK54 Maintenance Kits (BWLW)		2020	UNKNOWN / NAVSUP GLS	C / FFP	NAVSUP-WSS	Apr 2020	Oct 2020	200	460.00	Y		
1.1.3) F8001 MK54 Maintenance Kits (BWLW)		2021	UNKNOWN / NAVSUP GLS	C / FFP	NAVSUP-WSS	Apr 2021	Oct 2021	200	467.96	Y		
1.1.4) F8001 MK54 Pinger Kits (BWLX)		2015	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Nov 2015	May 2016	320	35.18	Y		May 2015
1.1.4) F8001 MK54 Pinger Kits (BWLX)		2016	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Jan 2016	Jun 2016	320	37.50	Y		
1.1.4) F8001 MK54 Pinger Kits (BWLX)		2017	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Sep 2017	Mar 2018	200	47.31	Y		
1.1.4) F8001 MK54 Pinger Kits (BWLX)		2018	Wair Products / Minneapolis, MN	C / FFP	NAVSUP, GLS	Sep 2018	Feb 2019	300	50.64	Y		
1.1.4) F8001 MK54 Pinger Kits (BWLX)		2019	Wair Products / Minneapolis, MN	C / FFP	NAVSUP-WSS	Jul 2019	Jan 2020	400	50.19	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 1 / Lightweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.4) F8001 MK54 Pinger Kits (BWLX)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2020	Sep 2020	400	50.00	Y		
1.1.4) F8001 MK54 Pinger Kits (BWLX)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2021	Sep 2021	400	52.21	Y		
1.1.5) F8001 MK54 Lanyard Start Assembly (BWJA)		2015	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Feb 2015	Aug 2015	450	1,622.22	Y		Apr 2014
1.1.5) F8001 MK54 Lanyard Start Assembly (BWJA)		2016	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Nov 2015	May 2016	550	1,703.64	Y		
1.1.5) F8001 MK54 Lanyard Start Assembly (BWJA)		2017	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Feb 2017	Aug 2017	200	1,594.23	Y		
1.1.5) F8001 MK54 Lanyard Start Assembly (BWJA)		2018	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Jan 2018	Jul 2018	300	1,673.94	Y		
1.1.5) F8001 MK54 Lanyard Start Assembly (BWJA)		2019	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Dec 2018	Jun 2019	400	1,691.32	Y		
1.1.5) F8001 MK54 Lanyard Start Assembly (BWJA)	✓	2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2020	Sep 2020	400	0.00	Y		
1.1.5) F8001 MK54 Lanyard Start Assembly (BWJA)		2021	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP-WSS	Apr 2021	Oct 2021	400	1,759.65	Y		
1.1.6) F8001 Propeller Baffles (CWRJ)		2015	PRN ASSOCIATES / INDIANAPOLIS, IN	C / FFP	NAVSUP, GLS	Jun 2015	Dec 2015	200	275.00	Y		Apr 2015
1.1.6) F8001 Propeller Baffles (CWRJ)		2016	PRN ASSOCIATES / INDIANAPOLIS, IN	C / FFP	NAVSUP, GLS	Jul 2016	Jan 2017	300	290.00	Y		Nov 2015
1.1.6) F8001 Propeller Baffles (CWRJ)		2017	Electro Mechanical Specialists / Norwich, CT	C / FFP	NAVSUP, GLS	Jun 2017	Jan 2018	200	232.03	Y		
1.1.6) F8001 Propeller Baffles (CWRJ)		2018	Electro Mechanical Specialists / Norwich, CT	C / FFP	NAVSUP, GLS	Aug 2018	Mar 2019	200	316.39	Y		
1.1.6) F8001 Propeller Baffles (CWRJ)		2019	Electro Mechanical Specialists / Norwich, CT	C / FFP	NAVSUP, GLS	Jul 2019	Feb 2020	200	232.02	Y		
1.1.6) F8001 Propeller Baffles (CWRJ)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Jul 2020	Jan 2021	200	235.00	Y		
1.1.6) F8001 Propeller Baffles (CWRJ)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Jul 2021	Jan 2022	200	241.41	Y		
1.1.7) F8001 Thermal Battery (5W15)		2015	ADVANCED THERMAL BATTERIES / NAVSUP, LOC	C / FFP	NAVSUP, GLS	Nov 2015	May 2016	235	1,561.70	Y		Apr 2015
1.1.7) F8001 Thermal Battery (5W15)		2017	ADVANCED THERMAL BATTERIES / NAVSUP, LOC	C / FFP	NAVSUP, GLS	Mar 2018	Sep 2018	421	1,460.03	Y		
1.1.7) F8001 Thermal Battery (5W15)		2018	ADVANCED THERMAL BATTERIES, INC / COCKEYSVILLE, MD	C / FFP	NAVSUP, GLS	Jul 2018	Dec 2018	362	1,562.80	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 1 / Lightweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.7) F8001 Thermal Battery (5W15)		2019	ADVANCED THERMAL BATTERIES, INC / COCKEYSVILLE, MD	C / FFP	NAVSUP, GLS	Jul 2019	Dec 2019	400	1,548.94	Y		
1.1.7) F8001 Thermal Battery (5W15)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2020	Sep 2020	400	1,580.00	Y		
1.1.7) F8001 Thermal Battery (5W15)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2021	Sep 2021	400	1,611.52	Y		
1.1.8) F8001 Battery, TDS (MK 54) (CWRP)		2015	EUR-PAC CORP / WATERBURY, CT	C / FFP	NAVSUP, GLS	Mar 2015	Sep 2015	300	186.67	Y		Oct 2014
1.1.8) F8001 Battery, TDS (MK 54) (CWRP)		2016	EUR-PAC CORP / WATERBURY, CT	C / FFP	NAVSUP, GLS	May 2016	Nov 2016	300	196.67	Y		Nov 2015
1.1.8) F8001 Battery, TDS (MK 54) (CWRP)		2017	EUR-PAC CORP / WATERBURY, CT	C / FFP	NAVSUP, GLS	Sep 2017	Mar 2018	325	177.16	Y		
1.1.8) F8001 Battery, TDS (MK 54) (CWRP)		2018	EUR-PAC CORP / WATERBURY, CT	C / FFP	NAVSUP, GLS	Aug 2018	Feb 2019	250	189.63	Y		
1.1.8) F8001 Battery, TDS (MK 54) (CWRP)		2019	Airtronics / Tucson, AZ	C / FFP	NAVSUP, GLS	May 2019	Oct 2019	400	187.95	Y		
1.1.8) F8001 Battery, TDS (MK 54) (CWRP)		2020	Airtronics / Tucson, AZ	C / FFP	NAVSUP-WSS	May 2020	Oct 2020	400	192.50	Y		
1.1.8) F8001 Battery, TDS (MK 54) (CWRP)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	May 2021	Nov 2021	400	195.54	Y		
1.1.9) F8001 Battery, Scuttle (MK54) (CWRQ)		2015	EUR-PAC CORP / WATERBURY, CT	C / FFP	NAVSUP, GLS	Mar 2015	Sep 2015	150	220.00	Y		Oct 2014
1.1.9) F8001 Battery, Scuttle (MK54) (CWRQ)		2016	EUR-PAC CORP - FY-16 / WATERBURY, CT	C / FFP	NAVSUP, GLS	May 2016	Dec 2016	150	226.67	Y		Dec 2015
1.1.9) F8001 Battery, Scuttle (MK54) (CWRQ)		2017	EUR-PAC CORP / WATERBURY, CT	C / FFP	NAVSUP, GLS	Sep 2017	Mar 2018	200	197.76	Y		
1.1.9) F8001 Battery, Scuttle (MK54) (CWRQ)		2018	EUR-PAC CORP / WATERBURY, CT	C / FFP	NAVSUP, GLS	Aug 2018	Feb 2019	150	211.68	Y		
1.1.9) F8001 Battery, Scuttle (MK54) (CWRQ)		2019	Airtronics / Tucson, AZ	C / FFP	NAVSUP, GLS	Jul 2019	Jan 2020	400	209.81	Y		
1.1.9) F8001 Battery, Scuttle (MK54) (CWRQ)		2020	Airtronics / Tucson, AZ	C / FFP	NAVSUP-WSS	Apr 2020	Oct 2020	400	215.00	Y		
1.1.9) F8001 Battery, Scuttle (MK54) (CWRQ)		2021	UNKNOWN / TBD	C / FFP	NAVSUP-WSS	Apr 2021	Sep 2021	400	218.28	Y		
1.1.10) F8001 MK54 Igniter (TH04)		2015	PACIFIC SCIENTIFIC ENERGETIC MATERIALS / HOLLISTER, CA	C / FFP	NAVSUP, GLS	Sep 2015	Mar 2016	400	552.50	Y		Jan 2015
1.1.10) F8001 MK54 Igniter (TH04)		2017	PACIFIC SCIENTIFIC ENERGETIC MATERIALS / HOLLISTER, CA	C / FFP	NAVSUP, GLS	Mar 2017	Sep 2017	350	725.75	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 1 / Lightweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.10) F8001 MK54 Igniter (TH04)		2018	PACIFIC SCIENTIFIC ENERGETIC MATERIALS / HOLLISTER, CA	C / FFP	NAVSUP, GLS	Aug 2018	Feb 2019	350	791.92	Y		
1.1.10) F8001 MK54 Igniter (TH04)		2019	PACIFIC SCIENTIFIC ENERGETIC MATERIALS / HOLLISTER, CA	C / FFP	NAVSUP, GLS	May 2019	Nov 2019	400	769.94	Y		
1.1.10) F8001 MK54 Igniter (TH04)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Jun 2020	Dec 2020	400	785.00	Y		
1.1.10) F8001 MK54 Igniter (TH04)		2021	UNKNOWN / NAVSUP GLS	C / FFP	** NO PCO **	Jun 2021	Dec 2021	400	801.05	Y		
1.1.11) F8001 MK54 BSS Bags		2015	NUWC KEYPORT / KEYPORT WASHINGTON	C / FFP	NUWC, KEYPORT	Mar 2015	Jan 2016	6	27,666.67	Y		
1.1.12) F8001 Electric Initiator		2019	TBD / TBD	C / FFP	NAVSUP, GLS	Aug 2019	Feb 2020	200	1,475.00	Y		
1.1.12) F8001 Electric Initiator		2020	TBD / TBD	C / FFP	NAVSUP-WSS	May 2020	Nov 2020	400	1,505.00	Y		
1.1.12) F8001 Electric Initiator		2021	TBD / TBD	C / FFP	NAVSUP-WSS	May 2021	Nov 2021	400	1,535.00	Y		
1.1.13) F8001 Generator Assembly, Gas		2017	GEN DYNAMICS, RENTON, WA / NUWC, KEYPORT	C / FFP	NAVSUP, GLS	Oct 2016	Aug 2017	194	10,073.80	Y		
1.1.13) F8001 Generator Assembly, Gas		2019	GEN DYNAMICS, RENTON, WA / NUWC, KEYPORT	C / FFP	NAVSUP, GLS	Aug 2019	Jun 2020	310	10,676.67	Y		
1.1.13) F8001 Generator Assembly, Gas		2020	TBD / TBD	C / FFP	NAVSUP-WSS	May 2020	Nov 2020	200	10,890.00	Y		
1.1.13) F8001 Generator Assembly, Gas		2021	TBD / TBD	C / FFP	NAVSUP-WSS	May 2021	Nov 2021	200	11,106.67	Y		
1.1.14) F8001 Valve Assembly , Fuel Shutoff (3W41)		2015	GENERAL DYNAMICS FY15 / VIRGINIA	C / FFP	NAVSUP, GLS	Aug 2015	Mar 2016	325	711.42	Y		Apr 2015
1.1.14) F8001 Valve Assembly , Fuel Shutoff (3W41)		2016	GENERAL DYNAMICS - 2 / VIRGINIA	C / FFP	NAVSUP, GLS	Jan 2016	Jun 2016	300	746.67	Y		Oct 2015
1.1.14) F8001 Valve Assembly , Fuel Shutoff (3W41)		2018	GENERAL DYNAMICS - 2 / VIRGINIA	C / FFP	NAVSUP, GLS	Sep 2018	Feb 2019	240	755.94	Y		
1.1.14) F8001 Valve Assembly , Fuel Shutoff (3W41)		2019	GENERAL DYNAMICS - 2 / VIRGINIA	C / FFP	NAVSUP, GLS	Jul 2019	Dec 2019	400	748.89	Y		
1.1.14) F8001 Valve Assembly , Fuel Shutoff (3W41)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	May 2020	Oct 2020	400	765.00	Y		
1.1.14) F8001 Valve Assembly , Fuel Shutoff (3W41)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	May 2021	Oct 2021	400	780.00	Y		
1.1.15) F8001 Pressure Cylinder, Warshot (YW09)		2015	Cartridge Actuated Devices/ NAVSUP, GLS / Fairfield, NJ	C / FFP	NAVSUP, GLS	Nov 2015	May 2016	350	937.75	Y		
1.1.15) F8001 Pressure Cylinder, Warshot (YW09)		2018	Cartridge Actuated Devices/ NAVSUP, GLS / Fairfield, NJ	C / FFP	NAVSUP, GLS	Aug 2018	Mar 2019	150	1,025.51	Y		
1.1.15) F8001 Pressure Cylinder, Warshot (YW09)		2019	Cartridge Actuated Devices/ NAVSUP, GLS / Fairfield, NJ	C / FFP	NAVSUP, GLS	Aug 2019	Mar 2020	200	1,025.85	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 1 / Lightweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.15) F8001 Pressure Cylinder, Warshot (YW09)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	May 2020	Oct 2020	300	1,046.67	Y		
1.1.15) F8001 Pressure Cylinder, Warshot (YW09)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	May 2021	Oct 2021	300	1,066.67	Y		
1.1.16) F8001 Pressure Cylinder, Exercise (TW58)		2015	Cartridge Actuated Devices -1 / Fairfield, NJ	C / FFP	NAVSUP, GLS	Nov 2015	Jun 2016	200	1,075.00	Y		
1.1.16) F8001 Pressure Cylinder, Exercise (TW58)		2016	Cartridge Actuated Devices -2 / Fairfield, NJ	C / FFP	NAVSUP, GLS	Jan 2016	Jun 2016	200	1,125.00	Y		
1.1.16) F8001 Pressure Cylinder, Exercise (TW58)		2019	Cartridge Actuated Devices -1 / Fairfield, NJ	C / FFP	NAVSUP, GLS	Aug 2019	Mar 2020	240	1,133.33	Y		
1.1.16) F8001 Pressure Cylinder, Exercise (TW58)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Jun 2020	Nov 2020	240	1,154.17	Y		
1.1.16) F8001 Pressure Cylinder, Exercise (TW58)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Jun 2021	Nov 2021	240	1,179.17	Y		
1.1.18) F8001 MK31 Stabilizer (QW47)		2015	UNITED TEREX INC, NOR PA / FAIRVIEW VILLAGE, PA/NUWC, KEYPORT	C / FFP	NAVSUP, GLS	Jul 2015	Jan 2016	200	1,940.00	Y		Jan 2015
1.1.18) F8001 MK31 Stabilizer (QW47)		2017	UNITED TEREX INC, NOR PA / FAIRVIEW VILLAGE, PA/NUWC, KEYPORT	C / FFP	NAVSUP, GLS	Mar 2017	Sep 2017	500	1,775.03	Y		
1.1.18) F8001 MK31 Stabilizer (QW47)		2018	UNITED TEREX INC, NOR PA / FAIRVIEW VILLAGE, PA/NUWC, KEYPORT	C / FFP	NAVSUP, GLS	Aug 2018	Feb 2019	300	1,863.78	Y		
1.1.18) F8001 MK31 Stabilizer (QW47)		2019	UNITED TEREX INC, NOR PA / FAIRVIEW VILLAGE, PA/NUWC, KEYPORT	C / FFP	NAVSUP, GLS	Jul 2019	Jan 2020	400	1,882.50	Y		
1.1.18) F8001 MK31 Stabilizer (QW47)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	May 2020	Oct 2020	400	1,920.00	Y		
1.1.18) F8001 MK31 Stabilizer (QW47)		2021	UNITED TEREX INC, NOR PA / FAIRVIEW VILLAGE, PA/NUWC, KEYPORT	C / FFP	NAVSUP-WSS	May 2021	Nov 2021	400	1,960.00	Y		
1.1.19) F8001 VLA Reassembly Kits		2015	Sunbelt Design & Developement / NAVSUP, GLS	C / FFP	NAVSUP, GLS	Apr 2015	Oct 2015	45	1,488.89	Y		Jan 2015
1.1.19) F8001 VLA Reassembly Kits		2016	Sunbelt Design & Developement FY16 / NAVSUP, GLS	C / FFP	NAVSUP, GLS	Jan 2016	Jun 2016	45	1,555.56	Y		
1.1.19) F8001 VLA Reassembly Kits		2017	Sunbelt Design & Developement / NAVSUP, GLS	C / FFP	NAVSUP, GLS	Sep 2017	Mar 2018	30	2,633.47	Y		
1.1.19) F8001 VLA Reassembly Kits		2018	Sunbelt Design & Developement / NAVSUP, GLS	C / FFP	NAVSUP, GLS	Jul 2018	Jan 2019	30	2,818.83	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 1 / Lightweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.19) F8001 VLA Reassembly Kits		2019	Sunbelt Design & Developement / NAVSUP, GLS	C / FFP	NAVSUP, GLS	Aug 2019	Feb 2020	30	2,800.00	Y		
1.1.19) F8001 VLA Reassembly Kits		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Mar 2020	Aug 2020	30	2,833.33	Y		
1.1.19) F8001 VLA Reassembly Kits		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2021	Sep 2021	30	2,900.00	Y		
1.1.20) F8001 VLA Thermal Battery (CWEC)		2015	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Jul 2015	Jan 2016	50	1,621.58	Y		Jan 2015
1.1.20) F8001 VLA Thermal Battery (CWEC)		2016	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Nov 2015	Nov 2016	60	1,700.00	Y		
1.1.20) F8001 VLA Thermal Battery (CWEC)		2018	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Jul 2018	Jan 2019	25	1,877.17	Y		
1.1.21) F8001 VLA Separator Nut Initiator (MT99)		2015	Pacific Scientific / Chandler, AZ	C / FFP	NAVSUP, GLS	Sep 2015	Mar 2016	150	1,321.90	Y		Jan 2015
1.1.21) F8001 VLA Separator Nut Initiator (MT99)		2016	Pacific Scientific / Chandler, AZ	C / FFP	NAVSUP, GLS	Jan 2016	Jul 2016	150	1,386.67	Y		
1.1.21) F8001 VLA Separator Nut Initiator (MT99)		2017	Pacific Scientific / Chandler, AZ	C / FFP	NAVSUP, GLS	Jan 2018	Jul 2018	40	908.48	Y		
1.1.21) F8001 VLA Separator Nut Initiator (MT99)		2019	Pacific Scientific / Chandler, AZ	C / FFP	NAVSUP, GLS	Jul 2019	Jan 2020	50	960.00	Y		
1.1.21) F8001 VLA Separator Nut Initiator (MT99)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2020	Sep 2020	50	980.00	Y		
1.1.21) F8001 VLA Separator Nut Initiator (MT99)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2021	Sep 2021	50	1,000.00	Y		
1.1.24) F8001 Sonobuoys		2015	UNDERSEA SENSOR SYSTEMS INC / COLUMBIA CITY, IN	C / FFP	NUWC, KEYPORT	Jun 2015	Dec 2015	48	2,251.00	Y		Nov 2014
1.1.24) F8001 Sonobuoys		2016	UNDERSEA SENSOR SYSTEMS INC / COLUMBIA CITY, IN	C / FFP	NUWC, KEYPORT	Jan 2016	Jul 2016	48	2,354.17	Y		
1.1.24) F8001 Sonobuoys		2017	UNDERSEA SENSOR SYSTEMS INC / COLUMBIA CITY, IN	C / FFP	NUWC, KEYPORT	Jan 2017	Jul 2017	48	2,594.77	Y		
1.1.24) F8001 Sonobuoys		2018	UNDERSEA SENSOR SYSTEMS INC / COLUMBIA CITY, IN	C / FFP	NUWC, KEYPORT	Jul 2018	Jan 2019	48	2,666.42	Y		
1.1.24) F8001 Sonobuoys		2019	UNDERSEA SENSOR SYSTEMS INC / COLUMBIA CITY, IN	C / FFP	NUWC, KEYPORT	Jul 2019	Jan 2020	48	2,740.21	Y		
1.1.24) F8001 Sonobuoys		2020	UNKNOWN / TBD	C / FFP	NUWC, KEYPORT	Apr 2020	Oct 2020	48	2,791.67	Y		
1.1.24) F8001 Sonobuoys		2021	UNKNOWN / TBD	C / FFP	NUWC, KEYPORT	Apr 2021	Oct 2021	48	2,854.17	Y		
1.1.26) F8001 VLA Telemetry Kits		2015	VARIOUS / CHINA LAKE	C / FFP	CHINA LAKE	Jun 2015	Dec 2015	2	91,000.00	Y		Dec 2014
1.1.26) F8001 VLA Telemetry Kits		2016	VARIOUS / CHINA LAKE	C / FFP	CHINA LAKE	Jan 2016	Jul 2016	4	93,750.00	Y		Jan 2016

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 1 / Lightweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.26) F8001 VLA Telemetry Kits		2017	VARIOUS / CHINA LAKE	C / FFP	CHINA LAKE	Nov 2017	May 2018	4	96,512.50	Y		
1.1.26) F8001 VLA Telemetry Kits		2018	VARIOUS / CHINA LAKE	C / FFP	CHINA LAKE	Mar 2018	Sep 2018	4	99,407.75	Y		
1.1.26) F8001 VLA Telemetry Kits		2019	VARIOUS / CHINA LAKE	C / FFP	CHINA LAKE	May 2019	Nov 2019	4	102,390.00	Y		
1.1.26) F8001 VLA Telemetry Kits		2020	VARIOUS / CHINA LAKE	C / FFP	CHINA LAKE	Jun 2020	Dec 2020	4	104,500.00	Y		
1.1.26) F8001 VLA Telemetry Kits		2021	VARIOUS / CHINA LAKE	C / FFP	CHINA LAKE	Jun 2021	Dec 2021	4	106,500.00	Y		
1.1.27) F8001 Suspension Bands (T107)		2016	United Terex Inc., Fairfield Village, PA / New MFG - Loc	C / FFP	NAVSUP, GLS	Jul 2016	Dec 2016	350	2,602.86	Y		Dec 2015
1.1.27) F8001 Suspension Bands (T107)		2017	United Terex Inc., Fairfield Village, PA / New MFG - Loc	C / FFP	NAVSUP, GLS	Jan 2017	Jun 2017	702	2,209.00	Y		
1.1.27) F8001 Suspension Bands (T107)		2018	United Terex Inc., Fairfield Village, PA / New MFG - Loc	C / FFP	NAVSUP, GLS	May 2018	Oct 2018	400	2,428.58	Y		
1.1.27) F8001 Suspension Bands (T107)		2019	United Terex Inc., Fairfield Village, PA / New MFG - Loc	C / FFP	NAVSUP, GLS	Aug 2019	Jan 2020	400	2,344.44	Y		
1.1.27) F8001 Suspension Bands (T107)		2020	United Terex Inc., Fairfield Village, PA / New MFG - Loc	C / FFP	NAVSUP-WSS	May 2020	Oct 2020	400	2,390.00	Y		
1.1.27) F8001 Suspension Bands (T107)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	May 2021	Oct 2021	400	2,437.78	Y		
1.1.29) F8001 VLA Refurbishment Kits(†)		2016	LOCKHEED MARTIN - FY16 / Akron, OH	C / BOA	NAVSUP, GLS	Sep 2016	Mar 2018	11	690,909.09	Y		
1.1.29) F8001 VLA Refurbishment Kits(†)		2017	LOCKHEED MARTIN - FY17 / Akron, OH	C / BOA	NAVSUP, GLS	Jun 2017	Jan 2019	11	683,181.82	Y		
1.1.29) F8001 VLA Refurbishment Kits(†)		2018	LOCKHEED MARTIN / Akron, OH	SS / FFP	NAVSUP, GLS	Aug 2018	Mar 2020	33	426,939.39	Y		
1.1.29) F8001 VLA Refurbishment Kits(†)		2019	LOCKHEED MARTIN / Akron, OH	SS / FFP	NAVSUP	Aug 2019	Mar 2021	22	555,227.27	Y		
1.1.29) F8001 VLA Refurbishment Kits(†)		2021	LOCKHEED MARTIN / Akron, OH	SS / FFP	NAVSUP-WSS	May 2021	Dec 2022	22	491,818.18	Y		
1.1.32) F8001 MK 28 Stabilizer (TA68)		2017	United Terex, Inc / Fairfield Village, PA	C / FFP	NAVSUP, GLS	Sep 2017	Feb 2018	300	4,361.02	Y		
1.1.32) F8001 MK 28 Stabilizer (TA68)		2018	United Terex, Inc / Fairfield Village, PA	C / FFP	NAVSUP, GLS	Sep 2018	Mar 2019	175	4,662.86	Y		
1.1.32) F8001 MK 28 Stabilizer (TA68)		2019	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP, GLS	Aug 2019	Feb 2020	300	4,626.67	Y		
1.1.32) F8001 MK 28 Stabilizer (TA68)	✓	2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	May 2020	Nov 2020	300	4,720.00	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 1 / Lightweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.32) F8001 MK 28 Stabilizer (TA68)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Oct 2020	Apr 2021	300	4,813.33	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 1 / Lightweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2015												Fiscal Year 2016												BALANCE
										Calendar Year 2015												Calendar Year 2016									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.29) F8001 VLA Refurbishment Kits																															
	1	2016	NAVY	11	0	11																								A -	11
	2	2017	NAVY	11	0	11																									11
	3	2018	NAVY	33	0	33																									33
	3	2019	NAVY	22	0	22																									22
	3	2021	NAVY	22	0	22																									22
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 1 / Lightweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
										Calendar Year 2017												Calendar Year 2018									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.29) F8001 VLA Refurbishment Kits																															
	1	2016	NAVY	11	0	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11							0
	2	2017	NAVY	11	0	11									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
	3	2018	NAVY	33	0	33																							A -	-	33
	3	2019	NAVY	22	0	22																									22
	3	2021	NAVY	22	0	22																									22
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 1 / Lightweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.29) F8001 VLA Refurbishment Kits																															
	1	2016	NAVY	11	11	0																									0
	2	2017	NAVY	11	0	11	-	-	-	11																					0
	3	2018	NAVY	33	0	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	11	11					0
	3	2019	NAVY	22	0	22											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	22
	3	2021	NAVY	22	0	22																									22
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 1 / Lightweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
										Calendar Year 2021												Calendar Year 2022									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.29) F8001 VLA Refurbishment Kits																															
	1	2016	NAVY	11	11	0																									0
	2	2017	NAVY	11	11	0																									0
	3	2018	NAVY	33	33	0																									0
	3	2019	NAVY	22	0	22	-	-	-	-	-	11	-	11																	0
	3	2021	NAVY	22	0	22								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 1 / Lightweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
							Calendar Year 2023												Calendar Year 2024												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.29) F8001 VLA Refurbishment Kits																															
	1	2016	NAVY	11	11	0																									0
	2	2017	NAVY	11	11	0																									0
	3	2018	NAVY	33	33	0																									0
	3	2019	NAVY	22	22	0																									0
	3	2021	NAVY	22	0	22	-	-	11	11																					0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 1 / Lightweight Torpedo Support Equipment

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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 - FY16 - Akron, OH	11	22	33	0	0	18	18	0	0	0	0
2	LOCKHEED MARTIN - FY17 - Akron, OH	11	22	33	0	0	19	19	0	0	0	0
3	LOCKHEED MARTIN - Akron, OH	11	22	33	0	0	19	19	0	0	25	25

"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).

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 2 / Recoverable Exercise Torpedo
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	12.706	0.000	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	12.706	0.000	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**12.706**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - F8003 LIGHTWEIGHT RECOVERABLE EXERCISE TORPEDO (REXTORP) Cost																		
Recurring Cost																		
1.1.1) Lightweight REXTORP Bodies / Assembly & Test(†)	46,794.24	243	11.371	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) Lightweight REXTORP Fire Control Modules / Assembly & Test(†)	4,959.02	122	0.605	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.3) Lightweight REXTORP Containers / Assembly & Test	10,428.57	70	0.730	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*12.706*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - F8003 LIGHTWEIGHT RECOVERABLE EXERCISE TORPEDO (REXTORP) Cost	**-**	**-**	***12.706***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Gross/Weapon System Cost	**-**	**-**	**12.706**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 2 / Recoverable Exercise Torpedo

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Lightweight REXTORP Bodies / Assembly & Test		2015	B-K MFG, ARAB AL / NUWC, KEYPORT	C / FFP	NUWC, KEYPORT	Jan 2015	Jun 2015	40	23,925.00	Y		
1.1.2) Lightweight REXTORP Fire Control Modules / Assembly & Test		2015	B-K MFG, ARAB AL / NUWC, KEYPORT	C / FFP	NUWC, KEYPORT	Jun 2015	Nov 2015	40	5,250.00	Y		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 3 / Heavyweight Torpedo Support Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	413.284	44.167	47.141	65.258	0.000	65.258
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	413.284	44.167	47.141	65.258	0.000	65.258
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**413.284**	**44.167**	**47.141**	**65.258**	**0.000**	**65.258**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - F8100 - HEAVYWEIGHT EXERCISE AND EXPENDABLES AND COMPONENT REPLACEMENT Cost																		
Recurring Cost																		
1.1.1) F8100 Guidance and Control Assembly(†)	311,829.79	47	14.656	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) F8100 MK 62-1 A-Cable (CWFP)(†)	6,666.67	420	2.800	3,946.67	100	0.395	4,025.00	200	0.805	4,108.00	250	1.027	-	-	0.000	4,108.00	250	1.027
1.1.3) F8100 MK 62-1 A-Cable Insert (CWLE)(†)	262.94	5,450	1.433	266.67	100	0.027	270.00	200	0.054	276.00	250	0.069	-	-	0.000	276.00	250	0.069
1.1.4) F8100 MK 62-1 A-Cable Receptacle (CWLD)(†)	-	-	3.078	1,960.00	100	0.196	2,000.00	200	0.400	2,040.00	250	0.510	-	-	0.000	2,040.00	250	0.510
1.1.5) F8100 Flex Hose (Improved) (CWQC)(†)	5,611.59	2,070	11.616	2,515.00	400	1.006	2,564.44	450	1.154	2,616.84	475	1.243	-	-	0.000	2,616.84	475	1.243
1.1.6) F8100 Strong Flex Hose (WW97)(†)	1,690.48	630	1.065	1,520.00	200	0.304	1,550.00	200	0.310	1,580.00	250	0.395	-	-	0.000	1,580.00	250	0.395
1.1.7) F8100 Igniter (TH01)(†)	940.05	3,970	3.732	725.93	600	0.436	740.00	600	0.444	754.67	750	0.566	-	-	0.000	754.67	750	0.566
1.1.8) F8100 Propellant (WW98)(†)	2,682.00	4,500	12.069	1,846.00	400	0.738	1,882.50	400	0.753	1,920.00	750	1.440	-	-	0.000	1,920.00	750	1.440

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 3 / Heavyweight Torpedo Support Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	**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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1.1.9) F8100 Scuttle Valve (SW94)(†)	894.56	294	0.263	-	-	0.000	1,055.56	36	0.038	1,083.33	36	0.039	-	-	0.000	1,083.33	36	0.039
1.1.10) F8100 Sub Wire Coil (TW92)(†)	7,221.86	4,300	31.054	4,076.80	600	2.446	4,158.57	700	2.911	4,241.33	750	3.181	-	-	0.000	4,241.33	750	3.181
1.1.11) F8100 Torpedo Wire Coil (SW83)(†)	15,406.67	1,800	27.732	6,316.00	600	3.790	6,441.43	700	4.509	6,570.67	750	4.928	-	-	0.000	6,570.67	750	4.928
1.1.12) F8100 OTTO Fuel - Moser Plant Warm	-	-	7.600	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.13) F8100 Otto Fuel	-	-	38.966	-	-	7.024	-	-	7.164	-	-	7.308	-	-	0.000	-	-	7.308
1.1.14) F8100 Crossover Batteries (CWRG)(†)	3,298.85	3,925	12.948	2,748.80	600	1.649	2,802.86	700	1.962	2,860.00	750	2.145	-	-	0.000	2,860.00	750	2.145
1.1.15) F8100 Sonobuoys(†)	2,185.19	486	1.062	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.16) F8100 A/B Dampening Material	-	-	1.016	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.17) F8100 SWT Target Procurment	-	-	0.400	-	-	0.063	-	-	0.065	-	-	0.066	-	-	0.000	-	-	0.066
1.1.18) F8100 ORDALTS	-	-	3.494	-	-	0.430	-	-	0.438	-	-	0.447	-	-	0.000	-	-	0.447
1.1.19) F8100 Deep Proofer Kits 1(†)	4,236.84	570	2.415	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.20) F8100 Deep Proofer Kits 2(†)	4,462.22	450	2.008	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.21) F8100 Short Wire Coils (CWRT)(†)	3,984.38	1,600	6.375	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.22) F8100 Replacement Nose Arrays(†)	229,520.00	50	11.476	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.23) F8100 WES Expansion Box(†)	-	-	0.000	14,534.78	230	3.343	14,826.09	230	3.410	15,121.74	230	3.478	-	-	0.000	15,121.74	230	3.478
1.1.24) F8100 Replacement Warshot Afterbodies(†)	-	-	0.000	-	-	0.000	-	-	0.000	1,027K	15	15.409	-	-	0.000	1,027K	15	15.409
Subtotal: Recurring Cost	-	-	*197.258*	-	-	*21.847*	-	-	*24.417*	-	-	*42.251*	-	-	*0.000*	-	-	*42.251*

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 3 / Heavyweight Torpedo Support Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Subtotal: Hardware - F8100 - HEAVYWEIGHT EXERCISE AND EXPENDABLES AND COMPONENT REPLACEMENT Cost	**-**	**-**	***197.258***	**-**	**-**	***21.847***	**-**	**-**	***24.417***	**-**	**-**	***42.251***	**-**	**-**	***0.000***	**-**	**-**	***42.251***
Hardware - F8101 - HEAVYWEIGHT OTHER EQUIPMENT INVESTMENT Cost																		
Recurring Cost																		
2.1.1) Heavyweight Other Equipment Investment	-	-	141.098	-	-	14.663	-	-	14.914	-	-	15.042	-	-	0.000	-	-	15.042
Subtotal: Recurring Cost	-	-	*141.098*	-	-	*14.663*	-	-	*14.914*	-	-	*15.042*	-	-	*0.000*	-	-	*15.042*
Subtotal: Hardware - F8101 - HEAVYWEIGHT OTHER EQUIPMENT INVESTMENT Cost	**-**	**-**	***141.098***	**-**	**-**	***14.663***	**-**	**-**	***14.914***	**-**	**-**	***15.042***	**-**	**-**	***0.000***	**-**	**-**	***15.042***
Support - F8843 - HEAVYWEIGHT QUALITY ASSURANCE Cost																		
3.1) Heavyweight Quality Assurance	-	-	2.842	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - F8843 - HEAVYWEIGHT QUALITY ASSURANCE Cost	**-**	**-**	***2.842***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - F8833 - HEAVYWEIGHT PRODUCTION ENGINEERING - IN HOUSE Cost																		
4.1) Heavyweight Production Engineering (In-House)	-	-	53.175	-	-	5.900	-	-	6.018	-	-	6.138	-	-	0.000	-	-	6.138
Subtotal: Support - F8833 - HEAVYWEIGHT PRODUCTION ENGINEERING - IN HOUSE Cost	**-**	**-**	***53.175***	**-**	**-**	***5.900***	**-**	**-**	***6.018***	**-**	**-**	***6.138***	**-**	**-**	***0.000***	**-**	**-**	***6.138***
Support - F8863 - HEAVY WEIGHT ACCEPTANCE TEST AND EVALUATION Cost																		
5.1) Heavyweight Acceptance Test and Evaulation	-	-	7.497	-	-	0.857	-	-	0.874	-	-	0.891	-	-	0.000	-	-	0.891
Subtotal: Support - F8863 - HEAVY WEIGHT ACCEPTANCE TEST AND EVALUATION Cost	**-**	**-**	***7.497***	**-**	**-**	***0.857***	**-**	**-**	***0.874***	**-**	**-**	***0.891***	**-**	**-**	***0.000***	**-**	**-**	***0.891***
Support - F8893 - HEAVYWEIGHT PRODUCTION ENGINEERING - CONTRACTOR Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 3 / Heavyweight Torpedo Support Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	**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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
6.1) Heavyweight Production Engineering - Contractor	-	-	11.414	-	-	0.900	-	-	0.918	-	-	0.936	-	-	0.000	-	-	0.936
Subtotal: Support - F8893 - HEAVYWEIGHT PRODUCTION ENGINEERING - CONTRACTOR Cost	***-***	***-***	***11.414***	***-***	***-***	***0.900***	***-***	***-***	***0.918***	***-***	***-***	***0.936***	***-***	***-***	***0.000***	***-***	***-***	***0.936***
Gross/Weapon System Cost	**-**	**-**	**413.284**	**-**	**-**	**44.167**	**-**	**-**	**47.141**	**-**	**-**	**65.258**	**-**	**-**	**0.000**	**-**	**-**	**65.258**

Remarks:
[Hardware] 4T material is consumed by the Fleet and IMAs each year, and must be replaced to maintain required inventory levels (2 year stock level). If funds are marked due to contract award delays, the next years funding is not adequate to replenish material consumed in the year prior, resulting in reduced inventory putting future torpedo builds at risk. All production deliveries, Fleet training, and Warshot maintenance builds depend on 4T material being readily available.

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 3 / Heavyweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) F8100 Guidance and Control Assembly(†)		2014	Various / Various	C / FFP	NUWC, KEYPORT	Jul 2014	Jul 2016	47	311,829.79	Y		Apr 2012
1.1.2) F8100 MK 62-1 A-Cable (CWFP)		2015	DCX-CHOL / Chatsworth, CA	C / FFP	NAVSUP, GLS	Oct 2015	May 2016	60	3,200.00	Y		Apr 2015
1.1.2) F8100 MK 62-1 A-Cable (CWFP)		2016	Tyco Electronics Corporation, Boca Raton, Florida / NAVSUP GLS	C / FFP	NAVSUP, GLS	Jun 2016	Dec 2016	60	3,500.00	Y		Oct 2015
1.1.2) F8100 MK 62-1 A-Cable (CWFP)		2018	DCX-CHOL / Chatsworth, CA	C / FFP	NAVSUP, GLS	May 2018	Dec 2018	50	3,870.88	Y		
1.1.2) F8100 MK 62-1 A-Cable (CWFP)		2019	DCX-CHOL / Chatsworth, CA	C / FFP	NAVSUP, GLS	Aug 2019	Mar 2020	100	3,946.67	Y		
1.1.2) F8100 MK 62-1 A-Cable (CWFP)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2020	Oct 2020	200	4,025.00	Y		
1.1.2) F8100 MK 62-1 A-Cable (CWFP)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2021	Oct 2021	250	4,108.00	Y		
1.1.3) F8100 MK 62-1 A-Cable Insert (CWLE)		2015	SEACON PHOENIX, LLC / ASHAWAY, RI	C / FFP	NAVSUP, GLS	Apr 2015	Sep 2015	800	78.75	Y		Oct 2014
1.1.3) F8100 MK 62-1 A-Cable Insert (CWLE)		2016	SEACON PHOENIX, LLC / ASHAWAY, RI	C / FFP	NAVSUP, GLS	Jan 2016	Jun 2016	650	83.08	Y		Oct 2015
1.1.3) F8100 MK 62-1 A-Cable Insert (CWLE)		2019	SEACON PHOENIX, LLC / ASHAWAY, RI	C / FFP	NAVSUP	Nov 2018	Apr 2019	100	266.67	Y		Aug 2018
1.1.3) F8100 MK 62-1 A-Cable Insert (CWLE)		2020	TBD / TBD	C / FFP	NAVSUP-WSS	Apr 2020	Sep 2020	200	270.00	Y		
1.1.3) F8100 MK 62-1 A-Cable Insert (CWLE)		2021	SEACON PHOENIX, LLC / ASHAWAY, RI	C / FFP	NAVSUP-WSS	Apr 2021	Sep 2021	250	276.00	Y		
1.1.4) F8100 MK 62-1 A-Cable Receptacle (CWLD)		2019	Brantner and Associats, Inc. / Ashway, RI	C / FFP	NAVSUP, GLS	Aug 2019	Jan 2020	100	1,960.00	Y		
1.1.4) F8100 MK 62-1 A-Cable Receptacle (CWLD)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2020	Sep 2020	200	2,000.00	Y		
1.1.4) F8100 MK 62-1 A-Cable Receptacle (CWLD)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2021	Sep 2021	250	2,040.00	Y		
1.1.5) F8100 Flex Hose (Improved) (CWQC)		2015	HL Technologies LP / Stafford, TX	C / FFP	NAVSUP, GLS	Apr 2015	Nov 2015	400	2,397.50	Y		Oct 2014
1.1.5) F8100 Flex Hose (Improved) (CWQC)		2016	Cortland Company, Inc / Cortland, NY	C / FFP	NAVSUP, GLS	Apr 2016	Oct 2016	400	2,517.50	Y		Jan 2015
1.1.5) F8100 Flex Hose (Improved) (CWQC)		2017	Cortland Company, Inc / Cortland, NY	C / FFP	NAVSUP, GLS	Aug 2017	Feb 2018	360	2,348.83	Y		
1.1.5) F8100 Flex Hose (Improved) (CWQC)		2018	Umbilicals International Inc / Stafford, TX	C / FFP	NAVSUP, GLS	Nov 2018	Nov 2019	400	2,466.27	Y		Jul 2018

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 3 / Heavyweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.5) F8100 Flex Hose (Improved) (CWQC)		2019	Umbilicals International Inc / Stafford, TX	C / FFP	NAVSUP	Aug 2019	Aug 2020	400	2,515.00	Y		Oct 2018
1.1.5) F8100 Flex Hose (Improved) (CWQC)		2020	Umbilicals International Inc / Stafford, TX	C / FFP	NAVSUP-WSS	Apr 2020	Apr 2021	450	2,564.44	Y		
1.1.5) F8100 Flex Hose (Improved) (CWQC)		2021	TBD / TBD	C / FFP	NAVSUP-WSS	Apr 2021	Oct 2021	475	2,616.84	Y		
1.1.6) F8100 Strong Flex Hose (WW97)		2015	PRECISION HOSE INC. / STONE MOUNTAIN, GA	C / FFP	NAVSUP, GLS	Jan 2015	Jun 2015	100	1,230.00	Y		Oct 2014
1.1.6) F8100 Strong Flex Hose (WW97)		2016	PRECISION HOSE INC. / STONE MOUNTAIN, GA	C / FFP	NAVSUP, GLS	Jan 2016	Jun 2016	100	1,290.00	Y		Oct 2015
1.1.6) F8100 Strong Flex Hose (WW97)		2017	PRECISION HOSE INC. / STONE MOUNTAIN, GA	C / FFP	NAVSUP, GLS	Feb 2018	Jul 2018	150	1,420.51	Y		
1.1.6) F8100 Strong Flex Hose (WW97)		2018	PRECISION HOSE INC. / STONE MOUNTAIN, GA	C / FFP	NAVSUP, GLS	Sep 2018	Feb 2019	150	1,491.53	Y		Jun 2018
1.1.6) F8100 Strong Flex Hose (WW97)		2019	PRECISION HOSE INC. / STONE MOUNTAIN, GA	C / FFP	NAVSUP, GLS	Mar 2019	Aug 2019	200	1,520.00	Y		
1.1.6) F8100 Strong Flex Hose (WW97)		2020	TBD / TBD	C / FFP	NAVSUP-WSS	May 2020	Nov 2020	200	1,550.00	Y		
1.1.6) F8100 Strong Flex Hose (WW97)		2021	TBD / TBD	C / FFP	NAVSUP-WSS	May 2021	Nov 2021	250	1,580.00	Y		
1.1.7) F8100 Igniter (TH01)		2015	Pacific Scientific / Chandler, AZ	C / FFP	NAVSUP, GLS	Jan 2015	Jun 2015	504	545.63	Y		Oct 2014
1.1.7) F8100 Igniter (TH01)		2016	Pacific Scientific / Chandler, AZ	C / FFP	NAVSUP, GLS	Apr 2016	Sep 2016	550	572.73	Y		Jan 2016
1.1.7) F8100 Igniter (TH01)		2017	Pacific Scientific / Chandler, AZ	C / FFP	NAVSUP, GLS	Feb 2018	Jul 2018	504	678.37	Y		
1.1.7) F8100 Igniter (TH01)		2018	Pacific Scientific / Chandler, AZ	C / FFP	NAVSUP, GLS	Sep 2018	Feb 2019	504	712.29	Y		
1.1.7) F8100 Igniter (TH01)		2019	Pacific Scientific / Chandler, AZ	C / FFP	NAVSUP, GLS	Jun 2019	Nov 2019	600	725.93	Y		
1.1.7) F8100 Igniter (TH01)		2020	TBD / TBD	C / FFP	NAVSUP-WSS	Jun 2020	Nov 2020	600	740.00	Y		
1.1.7) F8100 Igniter (TH01)		2021	TBD / TBD	C / FFP	NAVSUP-WSS	Jun 2021	Nov 2021	750	754.67	Y		
1.1.8) F8100 Propellant (WW98)		2015	ALLIANT TECH / ELKTON, MD	C / FFP	NAVSUP, GLS	May 2015	Dec 2015	1,000	1,840.00	Y		Jan 2015
1.1.8) F8100 Propellant (WW98)		2016	ALLIANT TECH FY16 / ELKTON, MD	C / FFP	NAVSUP, GLS	Jan 2016	Jun 2016	500	1,932.00	Y		Oct 2015
1.1.8) F8100 Propellant (WW98)		2018	ALLIANT TECH / ELKTON, MD	C / FFP	NAVSUP, GLS	Nov 2017	Jun 2018	1,000	1,810.71	Y		
1.1.8) F8100 Propellant (WW98)		2019	ALLIANT TECH / ELKTON, MD	C / FFP	NAVSUP, GLS	Nov 2018	Jun 2019	400	1,846.00	Y		
1.1.8) F8100 Propellant (WW98)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Mar 2020	Sep 2020	400	1,882.50	Y		
1.1.8) F8100 Propellant (WW98)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Mar 2021	Sep 2021	750	1,920.00	Y		
1.1.9) F8100 Scuttle Valve (SW94)		2015	Cartridge Actuated Devices / Fairfield, NJ	C / FFP	NAVSUP, GLS	Nov 2015	Jul 2016	30	966.67	Y		May 2015

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 3 / Heavyweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.9) F8100 Scuttle Valve (SW94)		2016	Cartridge Actuated Devices FY16 / Fairfield, NJ	C / FFP	NAVSUP, GLS	Jan 2016	Jun 2016	30	1,000.00	Y		Oct 2015
1.1.9) F8100 Scuttle Valve (SW94)		2017	Cartridge Actuated Devices / Fairfield, NJ	C / FFP	NAVSUP, GLS	Jan 2018	Sep 2018	84	999.40	Y		
1.1.9) F8100 Scuttle Valve (SW94)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2020	Sep 2020	36	1,055.56	Y		
1.1.9) F8100 Scuttle Valve (SW94)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Apr 2021	Sep 2021	36	1,083.33	Y		
1.1.10) F8100 Sub Wire Coil (TW92)		2015	Entwistle Company / Hudson, MA	C / FFP	NAVSUP, GLS	Jan 2015	Jun 2015	600	3,770.00	Y		Oct 2014
1.1.10) F8100 Sub Wire Coil (TW92)		2016	Eagle Pitcher Technologies / Joplin, MO	C / FFP	NAVSUP, GLS	May 2016	Nov 2016	500	3,986.00	Y		Jan 2016
1.1.10) F8100 Sub Wire Coil (TW92)		2017	Entwistle Company / Hudson, MA	C / FFP	NAVSUP, GLS	Sep 2017	Feb 2018	500	3,806.19	Y		
1.1.10) F8100 Sub Wire Coil (TW92)		2018	Entwistle Company / Hudson, MA	C / FFP	NAVSUP, GLS	Jul 2018	Dec 2018	625	3,996.50	Y		
1.1.10) F8100 Sub Wire Coil (TW92)		2019	Entwistle Company / Hudson, MA	C / FFP	NAVSUP, GLS	Aug 2019	Jan 2020	600	4,076.80	Y		
1.1.10) F8100 Sub Wire Coil (TW92)		2020	UNKNOWN / NAVSUP GLS	C / FFP	NAVSUP-WSS	Jun 2020	Jan 2021	700	4,158.57	Y		
1.1.10) F8100 Sub Wire Coil (TW92)		2021	UNKNOWN / NAVSUP GLS	C / FFP	NAVSUP-WSS	Jun 2021	Jan 2022	750	4,241.33	Y		
1.1.11) F8100 Torpedo Wire Coil (SW83)		2015	ENTWISTLE / HUDSON, MA	C / FFP	NAVSUP, GLS	Jan 2015	Jun 2015	500	4,652.00	Y		Oct 2014
1.1.11) F8100 Torpedo Wire Coil (SW83)		2018	ENTWISTLE / HUDSON, MA	C / FFP	NAVSUP-WSS	Jul 2018	Dec 2018	550	6,191.81	Y		
1.1.11) F8100 Torpedo Wire Coil (SW83)		2019	ENTWISTLE / HUDSON, MA	C / FFP	NAVSUP, GLS	Aug 2019	Jan 2020	600	6,316.00	Y		Oct 2018
1.1.11) F8100 Torpedo Wire Coil (SW83)		2020	TBD / TBD	C / FFP	NAVSUP-WSS	Jun 2020	Dec 2020	700	6,441.43	Y		
1.1.11) F8100 Torpedo Wire Coil (SW83)		2021	TBD / TBD	C / FFP	NAVSUP-WSS	Jun 2021	Dec 2021	750	6,570.67	Y		
1.1.14) F8100 Crossover Batteries (CWRG)		2015	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Aug 2015	Jan 2016	400	2,742.50	Y		May 2015
1.1.14) F8100 Crossover Batteries (CWRG)		2017	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Oct 2016	Mar 2017	700	2,566.74	Y		
1.1.14) F8100 Crossover Batteries (CWRG)		2018	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Oct 2017	Mar 2018	625	2,695.08	Y		
1.1.14) F8100 Crossover Batteries (CWRG)		2019	EAGLEPICHER TECH / JOPLIN, MO	C / FFP	NAVSUP, GLS	Aug 2019	Jan 2020	600	2,748.80	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3301 / Torpedo Support Equipment	Item Number / Title [DODIC]: 3 / Heavyweight Torpedo Support Equipment

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.14) F8100 Crossover Batteries (CWRG)		2020	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Mar 2020	Aug 2020	700	2,802.86	Y		
1.1.14) F8100 Crossover Batteries (CWRG)		2021	UNKNOWN / NAVSUP, GLS	C / FFP	NAVSUP-WSS	Mar 2021	Aug 2021	750	2,860.00	Y		
1.1.15) F8100 Sonobuoys		2015	UNDERSEA SENSOR SYSTEMS INC / COLUMBIA CITY, IN	C / FFP	NUWC, KEYPORT	May 2015	Nov 2015	96	2,251.00	Y		Feb 2015
1.1.19) F8100 Deep Proofer Kits 1		2015	Ordnance Technology Service Inc. / NUWC, Newport	C / FFP	NUWC, NEWPORT	Oct 2015	Mar 2016	150	2,460.00	Y		May 2015
1.1.19) F8100 Deep Proofer Kits 1		2016	Ordnance Technology Service Inc. / NUWC, Newport	C / FFP	NUWC, NEWPORT	Jan 2016	Jun 2016	120	2,533.33	Y		Oct 2015
1.1.20) F8100 Deep Proofer Kits 2		2015	Ordnance Technology Service Inc. / NUWC, Newport	C / FFP	NUWC, NEWPORT	Jan 2015	Jun 2015	150	3,500.00	Y		Oct 2014
1.1.21) F8100 Short Wire Coils (CWRT)		2015	Entwistle Company / Hudson, MA	C / FFP	NAVSUP, GLS	Nov 2015	Mar 2016	650	2,741.54	Y		Jun 2015
1.1.21) F8100 Short Wire Coils (CWRT)		2016	Eagle Pitcher Technologies / Joplin, MO	C / FFP	NAVSUP, GLS	Jul 2016	Dec 2016	550	4,210.91	Y		Dec 2015
1.1.21) F8100 Short Wire Coils (CWRT)		2017	Eagle Pitcher Technologies / Joplin, MO	C / FFP	NAVSUP, GLS	Jan 2018	Jun 2018	400	5,692.50	Y		
1.1.22) F8100 Replacement Nose Arrays		2016	NORTHROP GRUMMAN SYSTEMS CORPORATION / NEWPORT	C / FFP	NUWC, NEWPORT	Mar 2017	Nov 2017	50	229,520.00	Y		Oct 2015
1.1.23) F8100 WES Expansion Box		2019	TBD / TBD	C / FFP	NAVSEA	Aug 2019	Aug 2020	230	14,534.78	Y		
1.1.23) F8100 WES Expansion Box		2020	TBD / TBD	C / FFP	NAVSEA	Jun 2020	Jun 2021	230	14,826.09	Y		
1.1.23) F8100 WES Expansion Box		2021	TBD / TBD	C / FFP	NAVSEA	Jun 2021	Jun 2022	230	15,121.74	Y		
1.1.24) F8100 Replacement Warshot Afterbodies(†)		2021	SCIENCE APPLICATIONS INTERNATIONAL CORPORATION / Bedford, IN	C / FFP	NAVSEA	May 2021	May 2024	15	1,027K	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 3 / Heavyweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2014												Fiscal Year 2015												BALANCE
							Calendar Year 2014												Calendar Year 2015												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) F8100 Guidance and Control Assembly																															
	1	2014	NAVY	47	0	47										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47
1.1.24) F8100 Replacement Warshot Afterbodies																															
	2	2021	NAVY	15	0	15																									15
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 3 / Heavyweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
										Calendar Year 2016												Calendar Year 2017									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) F8100 Guidance and Control Assembly																															
	1	2014	NAVY	47	0	47	-	-	-	-	-	-	-	-	-	10	10	10	10	7											0
1.1.24) F8100 Replacement Warshot Afterbodies																															
	2	2021	NAVY	15	0	15																									15
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 3 / Heavyweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
										Calendar Year 2018												Calendar Year 2019									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) F8100 Guidance and Control Assembly																															
	1	2014	NAVY	47	47	0																									0
1.1.24) F8100 Replacement Warshot Afterbodies																															
	2	2021	NAVY	15	0	15																									15
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 3 / Heavyweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
										Calendar Year 2020												Calendar Year 2021									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) F8100 Guidance and Control Assembly																															
	1	2014	NAVY	47	47	0																									0
1.1.24) F8100 Replacement Warshot Afterbodies																															
	2	2021	NAVY	15	0	15																			A -	-	-	-	-		15
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 3 / Heavyweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
										Calendar Year 2022												Calendar Year 2023									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) F8100 Guidance and Control Assembly																															
	1	2014	NAVY	47	47	0																									0
1.1.24) F8100 Replacement Warshot Afterbodies																															
	2	2021	NAVY	15	0	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 3 / Heavyweight Torpedo Support Equipment

Cost Elements (Units in Each)							Fiscal Year 2024												Fiscal Year 2025												BALANCE
										Calendar Year 2024												Calendar Year 2025									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) F8100 Guidance and Control Assembly																															
	1	2014	NAVY	47	47	0																									0
1.1.24) F8100 Replacement Warshot Afterbodies																															
	2	2021	NAVY	15	0	15	-	-	-	-	-	-	-	15																	0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	**P-1 Line Item Number / Title:** 3301 / Torpedo Support Equipment	**Item Number / Title [DODIC]:** 3 / Heavyweight Torpedo Support Equipment

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	Various - Various			TBD	0	0	24	24	0	0	24	24
2	SCIENCE APPLICATIONS INTERNATIONAL CORPORATION - Bedford, IN			100	0	0	36	36	0	0	17	17

"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).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 3: Support Equipment	**P-1 Line Item Number / Title:** 3302 / ASW Range Support

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	55.737	3.872	3.890	4.159	0.000	4.159	4.096	4.174	4.246	4.324	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	55.737	3.872	3.890	4.159	0.000	4.159	4.096	4.174	4.246	4.324	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**55.737**	**3.872**	**3.890**	**4.159**	**0.000**	**4.159**	**4.096**	**4.174**	**4.246**	**4.324**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Anti-Submarine Warfare (ASW) Range program provides test and training tracking equipment for both Contiguous United States (CONUS) and Outside Contiguous United States (OCONUS). This equipment is used for ground truth tracking of participants during Fleet training exercises and torpedo firings and directly supports reconstruction and analysis for Undersea Warfare (USW) proficiency assessment and test, evaluation & analysis. The infrastructure supported includes: Southern California Offshore Range (SCORE), Barking Sands Tactical Underwater Range/Barking Sands Underwater Range Extension (BARSTUR/BSURE), Pacific Northwest Range Complex (Dabob and Nanoose), Atlantic Undersea Test and Evaluation Center (AUTEC), Portable Offshore Training Range (POTR), Portable Undersea Training Range (PUTR) and other portable capabilities abroad in support of Forward Deployed Naval Forces (FDNF) training requirements.

[P5 / F4001 - UTRE/PINGER EXERCISE EQUIPMENT]: Underwater tracking equipment is placed in weapons and other underwater vehicles for tracking during training and Test and Evaluation (T&E) exercises, and to ensure safe operation and movement of all craft and weapons on fixed and portable ranges for the Underwater Tracking Range Equipment (UTRE)/Pinger program. Funding is used to procure equipment for T&E exercises in addition to improvement and modernization projects.

[P5 / F4006 - STATIONARY TARGET EQUIPMENT MK28]: The stationary target equipment includes the MK 28 Targets and all equipment used for conducting Service Weapons Tests (SWT) on in-service and advanced war-shot torpedoes. The SWT is the only test the Navy has to verify the explosive train of lightweight and heavyweight torpedoes. Funding is used to procure target systems and equipment for SWT in addition to improvement and modernization projects.

[P5 / F4830 - PRODUCTION ENGINEERING - UTRE]: Funds for production engineering efforts performed by a field activity or contractor during the production phase of these projects.

[P5 / F4850 - PRODUCT IMPROVEMENT - UTRE]: Product improvement for fixed and portable range and fleet equipment.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy			Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 3: Support Equipment		**P-1 Line Item Number / Title:** 3302 / ASW Range Support	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A		**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A			

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / ASW Range Support [F4001]				- / 55.737	- / 3.872	- / 3.890	- / 4.159	- / 0.000	- / 4.159
P-40	**Total Gross/Weapon System Cost**				**- / 55.737**	**- / 3.872**	**- / 3.890**	**- / 4.159**	**- / 0.000**	**- / 4.159**

*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 Anti-Submarine Warfare (ASW) Range program provides underwater tracking equipment and fleet equipment for use on underwater fixed and portable ranges.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 3	P-1 Line Item Number / Title: 3302 / ASW Range Support	Item Number / Title [DODIC]: 1 / ASW Range Support [F4001]
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	55.737	3.872	3.890	4.159	0.000	4.159
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	55.737	3.872	3.890	4.159	0.000	4.159
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**55.737**	**3.872**	**3.890**	**4.159**	**0.000**	**4.159**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) F4001 - UTRE/ PINGER EXERCISE EQUIPMENT	-	-	26.848	-	-	1.832	-	-	1.913	-	-	2.219	-	-	-	-	-	2.219
1.1.2) F4006 - STATIONARY TARGET EQUIPMENT MK28	-	-	16.850	-	-	1.340	-	-	1.277	-	-	1.240	-	-	-	-	-	1.240
Subtotal: Recurring Cost	-	-	*43.698*	-	-	*3.172*	-	-	*3.190*	-	-	*3.459*	-	-	-	-	-	*3.459*
Subtotal: Hardware Cost	**-**	**-**	***43.698***	**-**	**-**	***3.172***	**-**	**-**	***3.190***	**-**	**-**	***3.459***	**-**	**-**	**-**	**-**	**-**	***3.459***
Support Cost																		
2.1) F4830 - PRODUCTION ENGINEERING - UTRE	-	-	6.492	-	-	0.350	-	-	0.350	-	-	0.350	-	-	-	-	-	0.350
2.2) F4850 - PRODUCT IMPROVEMENT - UTRE	-	-	5.547	-	-	0.350	-	-	0.350	-	-	0.350	-	-	-	-	-	0.350
Subtotal: Support Cost	**-**	**-**	***12.039***	**-**	**-**	***0.700***	**-**	**-**	***0.700***	**-**	**-**	***0.700***	**-**	**-**	**-**	**-**	**-**	***0.700***
Gross/Weapon System Cost	**-**	**-**	**55.737**	**-**	**-**	**3.872**	**-**	**-**	**3.890**	**-**	**-**	**4.159**	**-**	**-**	**0.000**	**-**	**-**	**4.159**

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 4: Destination Transportation	**P-1 Line Item Number / Title:** 2410 / First Destination Transportation

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	29.796	3.726	3.803	4.106	0.000	4.106	4.343	4.462	4.552	4.642	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	29.796	3.726	3.803	4.106	0.000	4.106	4.343	4.462	4.552	4.642	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**29.796**	**3.726**	**3.803**	**4.106**	**0.000**	**4.106**	**4.343**	**4.462**	**4.552**	**4.642**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

First Destination Transportation (FDT) delivers material from a procurement source to the first point of use or storage which may be in the Continental United States or overseas. The procurement source may be a supplier outside of the Department of Defense (DoD) supply system or a DoD activity which fabricates new material. FDT also includes transportation from point of origin to point of use or storage when Navy-owned material or equipment is provided to a contractor incident to a Research and Development project or a system/equipment acquisition or modification.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 03: Torpedoes and Related Equipment / BSA 4: Destination Transportation	**P-1 Line Item Number / Title:** 2410 / First Destination Transportation

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / FIRST DESTINATION TRANSPORTATION (FDT)				- / 29.796	- / 3.726	- / 3.803	- / 4.106	- / 0.000	- / 4.106
P-40	**Total Gross/Weapon System Cost**				**- / 29.796**	**- / 3.726**	**- / 3.803**	**- / 4.106**	**- / 0.000**	**- / 4.106**

*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 2021 funds are required for transportation costs for shipments of WPN-procured weapons related equipment and material to the first point of use or storage, or as Government Furnished Equipment/ Government Furnished Material (GFE/GFM) provided to a contractor incident to a WPN-funded system/equipment acquisition or modification.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 03 / 4	**P-1 Line Item Number / Title:** 2410 / First Destination Transportation	**Item Number / Title [DODIC]:** 1 / FIRST DESTINATION TRANSPORTATION (FDT)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	29.796	3.726	3.803	4.106	0.000	4.106
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	29.796	3.726	3.803	4.106	0.000	4.106
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**29.796**	**3.726**	**3.803**	**4.106**	**0.000**	**4.106**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Support Cost																		
1.1) First Destination Transportation-NAVSUP	-	-	11.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) First Destination Transportation - NAVAIR	-	-	8.646	-	-	1.679	-	-	1.716	-	-	1.750	-	-	-	-	-	1.750
1.3) First Destination Transportation - NAVSEA	-	-	4.416	-	-	0.915	-	-	0.933	-	-	0.952	-	-	-	-	-	0.952
1.4) First Destination Transportation - SSP [1]	-	-	5.700	-	-	1.132	-	-	1.154	-	-	1.404	-	-	-	-	-	1.404
Subtotal: Support Cost	***-***	***-***	***29.796***	***-***	***-***	***3.726***	***-***	***-***	***3.803***	***-***	***-***	***4.106***	***-***	***-***	***-***	***-***	***-***	***4.106***
Gross/Weapon System Cost	**-**	**-**	**29.796**	**-**	**-**	**3.726**	**-**	**-**	**3.803**	**-**	**-**	**4.106**	**-**	**-**	**0.000**	**-**	**-**	**4.106**

Footnotes:

[1] SSP's First Destination Transportation budget increases above inflation from FY20 to FY21 are due to fluctuating quantities of 1st and 2nd stage motor (new production and stored motors) shipments and Guidance material shipments.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 1: Guns and Gun Mounts	**P-1 Line Item Number / Title:** 4129 / Small Arms and Weapons

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	127.099	16.607	13.607	16.030	0.000	16.030	15.517	15.749	16.072	15.949	-	236.630
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	127.099	16.607	13.607	16.030	0.000	16.030	15.517	15.749	16.072	15.949	-	236.630
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**127.099**	**16.607**	**13.607**	**16.030**	**0.000**	**16.030**	**15.517**	**15.749**	**16.072**	**15.949**	**-**	**236.630**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	0.037	-	0.037	-	-	-	-	-	0.037
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY 2021 funding includes $16.030M for Base Budget Requirements in support of the National Defense Strategy.

This line item procures the initial issue of weapons, as well as the modernization, standardization and stock replenishment of a wide variety of Small Arms and weapons (caliber .50 and below) to meet Small Arms allowances and inventory objectives, including required gun mounts and associated support components.

This line also provides sufficient types and quantities of weapons to support training, afloat security forces and shore missions of approximately 1,300 ship/ashore activities Navy-wide including the Naval Mobile Construction Battalions, Naval Construction Force Support Units, Construction Battalion Maintenance Units, Mobile Security Force, Marine Corps Security Force Battalion and Master at Arms. Quantities of weapons procured with the above funding are to meet Small Arms allowances and inventory objectives.

This line item also procures a range of weapons and small arms considered service common equipment for Naval Special Warfare (NSW) such as assault and sniper rifles, handguns, machine guns, mortar firing systems, and a variety of components including gun sights, gun mounts, combat and thermal optics and other related equipment. This funding supports the inventory objectives and service-common Small Arms allowances for NSW.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 1: Guns and Gun Mounts	**P-1 Line Item Number / Title:** 4129 / Small Arms and Weapons

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / EXPEDITIONARY WARFARE	P-5a, P-21			- / 64.140	- / 10.454	- / 8.363	- / 10.201	- / 0.000	- / 10.201
P-5	2 / SURFACE WARFARE	P-5a			- / 53.652	- / 6.153	- / 5.244	- / 5.829	- / 0.000	- / 5.829
P-5	3 / STRATEGIC SYSTEMS PROGRAMS (SSP)	P-5a			- / 9.307	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**- / 127.099**	**- / 16.607**	**- / 13.607**	**- / 16.030**	**- / 0.000**	**- / 16.030**

*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:
Funding of $16,030,000 in FY 2021 supports meeting Navy inventory objectives, including the M18 combat pistol, the M4A1 5.56mm combat rifle, the M500 shotgun, and the M2A1 .50 caliber heavy machine gun. Funding also supports Naval Special Warfare common inventory allowance and includes the Advanced Sniper Rifle (ASR, .300 PRC MRAD), M320A1 grenade launchers, M3E1 Carl Gustaf 84mm Recoilless Rifles, and the MK50MOD1 Stabilized Small Arms Mounts. Overall funding supports the procurement of M18, M4A1, M500, MK48, M2A1, M3E1, MK50MOD1 and CROWS II as well as the associated transportation and production engineering for US Navy small arms.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	P-1 Line Item Number / Title: 4129 / Small Arms and Weapons	Item Number / Title [DODIC]: 1 / EXPEDITIONARY WARFARE
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	64.140	10.454	8.363	10.201	0.000	10.201
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	64.140	10.454	8.363	10.201	0.000	10.201
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**64.140**	**10.454**	**8.363**	**10.201**	**0.000**	**10.201**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - EXPEDITIONARY WARFARE Cost																		
Recurring Cost																		
1.1.1) SSAM/MK50(†)	555,333.33	9	4.998	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) MK48(†)	8,729.41	85	0.742	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.3) MK48 REFURB(†)	5,942.86	35	0.208	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.4) M107 .50 CAL SNIPER RIFLE(†)	12,500.00	2	0.025	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.5) MOSS 500A1 SHOT GUN M590	-	-	0.000	-	-	0.000	-	-	0.000	500.00	500	0.250	-	-	0.000	500.00	500	0.250
1.1.6) M11 9MM PISTOL(†)	700.00	40	0.028	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.7) M9 9MM PISTOL(†)	21,876.40	89	1.947	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.8) MK44 7.62MM MINIGUN(†)	1,218K	2	2.436	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.9) MK44 REFURB(†)	40,666.67	3	0.122	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.10) EXPEDITIONARY MOUNTS(†)	2,750.00	40	0.110	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.11) MK-19 MOD 3 40MM GMG(†)	17,222.22	9	0.155	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	P-1 Line Item Number / Title: 4129 / Small Arms and Weapons	Item Number / Title [DODIC]: 1 / EXPEDITIONARY WARFARE
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1.1.12) M4A1 5.56MM CARBINE(†)	14,926.10	636	9.493	750.00	750	0.563	750.00	200	0.150	750.00	200	0.150	-	-	0.000	750.00	200	0.150
1.1.13) M240B 7.62MM MG(†)	60,984.62	130	7.928	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.14) M2HB .50 CAL MG	-	-	21.640	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.15) M2A1(†)	14,589.21	241	3.516	14,000.00	48	0.672	14,000.00	50	0.700	-	-	0.000	-	-	0.000	-	-	0.000
1.1.16) M2A1 COMPONENTS	-	-	7.277	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.17) M18 MHS, XM17(†)	-	-	0.000	200.00	2,100	0.420	200.00	2,000	0.400	200.00	3,000	0.600	-	-	0.000	200.00	3,000	0.600
1.1.18) M224 60MM MORTAR(†)	100,000.00	1	0.100	70,000.00	51	3.570	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.19) M252 81MM MORTAR(†)	50,454.55	55	2.775	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.21) M3E1 Carl Gustaf(†)	-	-	0.000	72,000.00	64	4.608	57,000.00	60	3.420	57,000.00	10	0.570	-	-	0.000	57,000.00	10	0.570
1.1.22) M3E1 20mm sub caliber adapter(†)	-	-	0.000	-	-	0.000	6,813.00	90	0.613	6,813.00	20	0.136	-	-	0.000	6,813.00	20	0.136
1.1.23) ASR: MRAD .300 PRC(†)	-	-	0.000	-	-	0.000	12,000.00	90	1.080	12,000.00	80	0.960	-	-	0.000	12,000.00	80	0.960
1.1.24) URG 14.5	-	-	0.000	-	-	0.163	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.25) MK50/ MK50MOD1/ CROWS II(†)	-	-	0.000	-	-	0.000	-	-	0.000	350,000.00	20	7.000	-	-	0.000	350,000.00	20	7.000
Subtotal: Recurring Cost	-	-	*63.500*	-	-	*9.996*	-	-	*6.363*	-	-	*9.666*	-	-	*0.000*	-	-	*9.666*
Subtotal: Hardware - EXPEDITIONARY WARFARE Cost	**-**	**-**	***63.500***	**-**	**-**	***9.996***	**-**	**-**	***6.363***	**-**	**-**	***9.666***	**-**	**-**	***0.000***	**-**	**-**	***9.666***
Hardware - TRANSPORTATION ACCOUNT CODE (TAC) Cost																		
Recurring Cost																		
2.1.1) SMALL ARMS TAC	-	-	0.104	-	-	0.100	-	-	0.200	-	-	0.300	-	-	0.000	-	-	0.300
Subtotal: Recurring Cost	-	-	*0.104*	-	-	*0.100*	-	-	*0.200*	-	-	*0.300*	-	-	*0.000*	-	-	*0.300*
Subtotal: Hardware - TRANSPORTATION ACCOUNT CODE (TAC) Cost	**-**	**-**	***0.104***	**-**	**-**	***0.100***	**-**	**-**	***0.200***	**-**	**-**	***0.300***	**-**	**-**	***0.000***	**-**	**-**	***0.300***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	P-1 Line Item Number / Title: 4129 / Small Arms and Weapons	Item Number / Title [DODIC]: 1 / EXPEDITIONARY WARFARE
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Support - EXPEDITIONARY WARFARE Cost																		
3.1) Production Engineering	-	-	0.536	-	-	0.358	-	-	0.162	-	-	0.235	-	-	0.000	-	-	0.235
3.2) 14.5 URG KIT	-	-	0.000	-	-	0.000	780.00	2,100	1.638	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - EXPEDITIONARY WARFARE Cost	***-***	***-***	***0.536***	***-***	***-***	***0.358***	***-***	***-***	***1.800***	***-***	***-***	***0.235***	***-***	***-***	***0.000***	***-***	***-***	***0.235***
Gross/Weapon System Cost	**-**	**-**	**64.140**	**-**	**-**	**10.454**	**-**	**-**	**8.363**	**-**	**-**	**10.201**	**-**	**-**	**0.000**	**-**	**-**	**10.201**

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	P-1 Line Item Number / Title: 4129 / Small Arms and Weapons	Item Number / Title [DODIC]: 1 / EXPEDITIONARY WARFARE

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) SSAM/MK50		2017	Kongsberg Protech / Johnstown, PA	C / FFP	PICATINNY	May 2017	Jun 2017	3	298,039.00	N		Jan 2017
1.1.1) SSAM/MK50		2018	Kongsberg Protech / Johnstown, PA	C / FFP	PICATINNY	Mar 2018	Aug 2018	6	284,000.00	N		Jan 2018
1.1.2) MK48		2017	NSWC / CRANE, IN	C / IDDQ	NSWC CRANE	Apr 2017	Sep 2017	25	8,075.00	N		Jan 2017
1.1.2) MK48		2018	NSWC / CRANE, IN	C / IDDQ	NSWC CRANE	Apr 2018	Sep 2018	60	9,000.00	N		Jan 2018
1.1.3) MK48 REFURB		2017	NSWC / CRANE, IN	WR	NSWC CRANE	Jun 2017	Nov 2017	35	5,930.00	N		
1.1.4) M107 .50 CAL SNIPER RIFLE		2017	BARRETT / CHRISTIANA, TN	C / IDDQ	NSWC CRANE	Jun 2017	Jun 2017	2	12,500.00	N		Oct 2016
1.1.6) M11 9MM PISTOL		2017	SIGARMS / EXTER, NH	C / FFP	TACOM LCMC	Jun 2017	Jan 2018	40	695.00	N		Oct 2016
1.1.7) M9 9MM PISTOL		2016	BERETTA / ACCOKEEK, MD	C / FFP	ROCK ISLAND ARSENAL	Jun 2016	Oct 2016	89	685.39	N		Jan 2016
1.1.8) MK44 7.62MM MINIGUN		2017	DILLION / SCOTTSDALE, AZ	C / FFP	NSWC CRANE	Mar 2017	Jul 2017	2	72,500.00	N		Jan 2016
1.1.9) MK44 REFURB		2017	NSWC / CRANE, IN	WR	NSWC CRANE	Mar 2017	Aug 2017	3	40,800.00	N		
1.1.10) EXPEDITIONARY MOUNTS		2017	FRASER / LEXINGTON, MI	C / IDIQ	NSWC CRANE	Jun 2017	Jul 2017	40	2,748.00	N		Jan 2017
1.1.11) MK-19 MOD 3 40MM GMG		2017	FN / COLUMBIA, SC	C / IDIQ	PICATINNY	Jun 2017	Jun 2019	9	17,206.00	N		Oct 2016
1.1.12) M4A1 5.56MM CARBINE		2016	COLT / HARTFORD, CT	C / FFP	TACOM LCMC	Mar 2016	Apr 2017	374	1,451.87	N		Oct 2015
1.1.12) M4A1 5.56MM CARBINE		2017	COLT / HARTFORD, CT	C / FFP	TACOM LCMC	Aug 2017	Sep 2018	262	800.00	N		May 2017
1.1.12) M4A1 5.56MM CARBINE		2019	COLT / HARTFORD, CT	C / FFP	TACOM LCMC	Jan 2019	Feb 2020	750	750.00	N		Oct 2018
1.1.13) M240B 7.62MM MG		2016	FN / COLUMBIA, SC	C / IDIQ	TACOM LCMC	Dec 2015	Jan 2018	73	6,392.86	N		Oct 2015
1.1.13) M240B 7.62MM MG		2017	FN / COLUMBIA, SC	C / IDIQ	TACOM LCMC	Jun 2017	Jul 2019	57	7,700.00	N		Oct 2016
1.1.15) M2A1		2017	US Ordinance / McCarran, NV	C / FFP	PICATINNY	Dec 2017	Dec 2018	146	14,975.00	N		Oct 2017
1.1.15) M2A1		2018	US Ordinance / McCarran, NV	C / FFP	PICATINNY	Dec 2017	Dec 2018	95	14,000.00	N		Oct 2017
1.1.15) M2A1		2019	US Ordinance / McCarran, NV	C / FFP	PICATINNY	Oct 2018	Oct 2019	48	14,000.00	N		
1.1.15) M2A1		2020	US Ordinance / McCarran, NV	C / TBD	PICATINNY	Mar 2020	Mar 2021	50	14,000.00	N		
1.1.17) M18 MHS, XM17		2019	SIGARMS / EXTER, NH	C / FFP	PICATINNY	Dec 2018	Dec 2018	2,100	200.00	N		Oct 2018
1.1.17) M18 MHS, XM17		2020	SIGARMS / EXTER, NH	C / FFP	PICATINNY	Mar 2020	Mar 2020	2,000	200.00	N		
1.1.17) M18 MHS, XM17		2021	SIGARMS / EXTER, NH	C / TBD	PICATINNY	Mar 2021	Mar 2021	3,000	200.00	N		
1.1.18) M224 60MM MORTAR		2018	Connectec Co. Inc / Irvin, CA	C / IDIQ	PICATINNY	Jan 2018	Jan 2018	1	99,830.00	Y		Oct 2017
1.1.18) M224 60MM MORTAR		2019	Connectec Co. Inc / Irvin, CA	C / IDIQ	PICATINNY	Jan 2019	Jan 2019	29	70,000.00	Y		Oct 2018
1.1.18) M224 60MM MORTAR	✓	2019	Connectec Co. Inc / Irvin, CA	C / IDIQ	PICATINNY	Jan 2019	Jan 2019	22	70,000.00	N		Oct 2018
1.1.19) M252 81MM MORTAR		2018	Connectec Co. Inc / Irvin, CA	C / FFP	PICATINNY	Jan 2018	Jan 2018	25	51,000.00	Y		Oct 2017
1.1.19) M252 81MM MORTAR	✓	2018	Connectec Co. Inc / Irvin, CA	C / FFP	PICATINNY	Jan 2018	Jan 2018	30	50,000.00	Y		Oct 2017
1.1.21) M3E1 Carl Gustaf		2019	Saab Bofors Dynamics / Sweden	C / CPFF	PICATINNY	Dec 2018	Jun 2019	64	72,000.00	Y		
1.1.21) M3E1 Carl Gustaf		2020	Saab Bofors Dynamics / Sweden	C / CPFF	PICATINNY	Dec 2019	Jun 2020	60	57,000.00	Y		
1.1.22) M3E1 20mm sub caliber adapter		2020	Saab Bofors Dynamics / Sweden	C / TBD	PICATINNY	Mar 2021	Sep 2022	90	6,813.00	N	Jan 2022	

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	P-1 Line Item Number / Title: 4129 / Small Arms and Weapons	Item Number / Title [DODIC]: 1 / EXPEDITIONARY WARFARE

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.22) M3E1 20mm sub caliber adapter		2021	Saab Bofors Dynamics / Sweden	C / TBD	PICATINNY	Feb 2021	Feb 2021	20	6,813.00	N		
1.1.23) ASR: MRAD .300 PRC		2020	Barrett Manufacturing / Murfreesboro, TN	C / CPFF	PICATINNY	May 2020	Nov 2021	90	12,000.00	N		
1.1.23) ASR: MRAD .300 PRC		2021	Barrett Manufacturing / Murfreesboro, TN	C / TBD	PICATINNY	May 2021	Nov 2022	80	12,000.00	N	Aug 2023	
1.1.25) MK50/ MK50MOD1/ CROWS II(†)		2021	KONSBERG / VIRGINIA	C / TBD	PICATINNY	Feb 2021	Aug 2022	20	350,000.00	N	Aug 2023	

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	**P-1 Line Item Number / Title:** 4129 / Small Arms and Weapons	**Item Number / Title [DODIC]:** 1 / EXPEDITIONARY WARFARE

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
										Calendar Year 2016												Calendar Year 2017									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.25) MK50/ MK50MOD1/ CROWS II																															
	1	2021	NAVY	20	0	20																									20
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	**P-1 Line Item Number / Title:** 4129 / Small Arms and Weapons	**Item Number / Title [DODIC]:** 1 / EXPEDITIONARY WARFARE

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
										Calendar Year 2018												Calendar Year 2019									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.25) MK50/ MK50MOD1/ CROWS II																															
	1	2021	NAVY	20	0	20																									20
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	**P-1 Line Item Number / Title:** 4129 / Small Arms and Weapons	**Item Number / Title [DODIC]:** 1 / EXPEDITIONARY WARFARE

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
										Calendar Year 2020												Calendar Year 2021									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.25) MK50/ MK50MOD1/ CROWS II																															
	1	2021	NAVY	20	0	20																	A -	-	-	-	-	-	-	-	20
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	**P-1 Line Item Number / Title:** 4129 / Small Arms and Weapons	**Item Number / Title [DODIC]:** 1 / EXPEDITIONARY WARFARE

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
										Calendar Year 2022												Calendar Year 2023									
COO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.25) MK50/ MK50MOD1/ CROWS II																															
	1	2021	NAVY	20	0	20	-	-	-	-	-	-	-	-	-	-	20														0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	**P-1 Line Item Number / Title:** 4129 / Small Arms and Weapons	**Item Number / Title [DODIC]:** 1 / EXPEDITIONARY WARFARE

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	KONSBERG - VIRGINIA			TBD	0	0	18	18	0	0	18	18

"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).

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	**P-1 Line Item Number / Title:** 4129 / Small Arms and Weapons	**Item Number / Title [DODIC]:** 2 / SURFACE WARFARE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	53.652	6.153	5.244	5.829	0.000	5.829
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	53.652	6.153	5.244	5.829	0.000	5.829
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**53.652**	**6.153**	**5.244**	**5.829**	**0.000**	**5.829**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - SURFACE WARFARE Cost																		
Recurring Cost																		
1.1.1) MK44 REFURB(†)	41,000.00	1	0.041	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) MOSS 500A1 12G SHOTGUN	-	-	0.000	-	-	0.000	500.00	4,000	2.000	500.00	3,500	1.750	-	-	0.000	500.00	3,500	1.750
1.1.3) M4A1 5.56MM CARBINE(†)	4,236.43	1,345	5.698	750.00	500	0.375	750.00	200	0.150	750.00	200	0.150	-	-	0.000	750.00	200	0.150
1.1.4) M240B 7.62MM MG(†)	75,653.74	361	27.311	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.5) M9 9MM PISTOL(†)	9,717.39	230	2.235	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.6) M2HB REFURB/M2A1 QCB CONVO KITS(†)	5,072.20	277	1.405	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.7) M2A1 COMPONENTS	34,076.29	367	12.506	14,000.00	178	2.492	14,000.00	10	0.140	14,000.00	100	1.400	-	-	0.000	14,000.00	100	1.400
1.1.8) M18 MHS, XM17(†)	200.00	14,000	2.800	200.00	12,900	2.580	200.00	13,000	2.600	200.00	9,000	1.800	-	-	0.000	200.00	9,000	1.800
1.1.10) 40MM M320A1 (rqmt doc) LAUNCHER GRENADE(†)	-	-	0.000	-	-	0.000	-	-	0.000	2,000.00	200	0.400	-	-	0.000	2,000.00	200	0.400
Subtotal: Recurring Cost	-	-	*51.996*	-	-	*5.447*	-	-	*4.890*	-	-	*5.500*	-	-	*0.000*	-	-	*5.500*

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	P-1 Line Item Number / Title: 4129 / Small Arms and Weapons	Item Number / Title [DODIC]: 2 / SURFACE WARFARE
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Subtotal: Hardware - SURFACE WARFARE Cost	**-**	**-**	***51.996***	**-**	**-**	***5.447***	**-**	**-**	***4.890***	**-**	**-**	***5.500***	**-**	**-**	***0.000***	**-**	**-**	***5.500***
Hardware - TRANSPORTATION ACCOUNT CODE (TAC) Cost																		
Recurring Cost																		
2.1.1) SMALL ARMS TAC	-	-	0.000	-	-	0.000	-	-	0.300	-	-	0.300	-	-	0.000	-	-	0.300
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*0.300*	-	-	*0.300*	-	-	*0.000*	-	-	*0.300*
Subtotal: Hardware - TRANSPORTATION ACCOUNT CODE (TAC) Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.300***	**-**	**-**	***0.300***	**-**	**-**	***0.000***	**-**	**-**	***0.300***
Support - SURFACE WARFARE Cost																		
3.1) PRODUCTION ENGINEERING	-	-	1.656	-	-	0.706	-	-	0.054	-	-	0.029	-	-	0.000	-	-	0.029
Subtotal: Support - SURFACE WARFARE Cost	**-**	**-**	***1.656***	**-**	**-**	***0.706***	**-**	**-**	***0.054***	**-**	**-**	***0.029***	**-**	**-**	***0.000***	**-**	**-**	***0.029***
Gross/Weapon System Cost	**-**	**-**	**53.652**	**-**	**-**	**6.153**	**-**	**-**	**5.244**	**-**	**-**	**5.829**	**-**	**-**	**0.000**	**-**	**-**	**5.829**

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	P-1 Line Item Number / Title: 4129 / Small Arms and Weapons	Item Number / Title [DODIC]: 2 / SURFACE WARFARE

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) MK44 REFURB		2017	NSWC / CRANE, IN	WR	NSWC CRANE	Mar 2017	Mar 2017	1	40,800.00	N		
1.1.3) M4A1 5.56MM CARBINE		2016	COLT / HARTFORD, CT	C / FFP	TACOM LCMC	May 2017	Jun 2018	345	1,451.87	N		Oct 2016
1.1.3) M4A1 5.56MM CARBINE		2018	COLT / HARTFORD, CT	C / FFP	TACOM LCMC	Jan 2018	Feb 2019	1,000	750.00	N		Oct 2017
1.1.3) M4A1 5.56MM CARBINE		2019	COLT / HARTFORD, CT	C / FFP	TACOM LCMC	Jan 2019	Feb 2020	500	750.00	N		Oct 2018
1.1.4) M240B 7.62MM MG		2016	FN / COLUMBIA, SC	C / IDIQ	TACOM LCMC	Dec 2015	Jan 2018	192	6,392.86	N		Oct 2015
1.1.4) M240B 7.62MM MG		2017	FN / COLUMBIA, SC	C / IDIQ	PICATINNY	Jun 2017	Jul 2019	169	7,700.00	N		Oct 2016
1.1.5) M9 9MM PISTOL		2016	BERETTA / ACCOKEEK, MD	C / FFP	TACOM LCMC	Jun 2016	Oct 2016	230	685.39	N		Jan 2016
1.1.6) M2HB REFURB/M2A1 QCB CONVO KITS		2017	NSWC / CRANE, IN	WR	NSWC CRANE	Jun 2017	Oct 2017	277	5,073.00	N		
1.1.8) M18 MHS, XM17		2018	SIGARMS / EXTER, NH	C / FFP	PICATINNY	Dec 2017	Dec 2017	14,000	200.00	N		Oct 2017
1.1.8) M18 MHS, XM17		2019	SIGARMS / EXTER, NH	C / FFP	PICATINNY	Dec 2018	Dec 2018	12,900	200.00	N		Oct 2018
1.1.8) M18 MHS, XM17		2020	SIGARMS / EXTER, NH	C / FFP	PICATINNY	Dec 2019	Dec 2019	13,000	200.00	N		Oct 2019
1.1.8) M18 MHS, XM17		2021	SIGARMS / EXTER, NH	C / TBD	PICATINNY	Apr 2021	Apr 2021	9,000	200.00	N		
1.1.10) 40MM M320A1 (rqmt doc) LAUNCHER GRENADE		2021	TBB / TBD	C / TBD	PICATINNY	Jul 2021	Jan 2023	200	2,000.00	N	Aug 2023	

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	**P-1 Line Item Number / Title:** 4129 / Small Arms and Weapons	**Item Number / Title [DODIC]:** 3 / STRATEGIC SYSTEMS PROGRAMS (SSP)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	9.307	0.000	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	9.307	0.000	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**9.307**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - STRATEGIC SYSTEMS PROGRAMS Cost																		
Recurring Cost																		
1.1.1) M4A1 Supressor(†)	1,120.19	1,040	1.165	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) M4A1 Accessories	-	-	0.196	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.3) AN/PVQ-31B (RCOM4)(†)	888.83	1,889	1.679	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.4) AN/PEQ-16(†)	1,856.54	1,889	3.507	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.5) M240B Machine Gun Accessories	-	-	0.091	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.6) M9A1 Pistol Accessories/ Components	-	-	0.020	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.7) AN/PVS-14(†)	3,752.84	352	1.321	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.8) AN/PVS-14 Conversion Kits	-	-	0.039	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.9) AN/PAS-13G (V) 1(†)	8,158.23	158	1.289	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*9.307*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - STRATEGIC SYSTEMS PROGRAMS Cost	**-**	**-**	***9.307***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	**P-1 Line Item Number / Title:** 4129 / Small Arms and Weapons	**Item Number / Title [DODIC]:** 3 / STRATEGIC SYSTEMS PROGRAMS (SSP)
ID Code (A=Service Ready, B=Not Service Ready) :	**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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Gross/Weapon System Cost	-	-	9.307	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 1	P-1 Line Item Number / Title: 4129 / Small Arms and Weapons	Item Number / Title [DODIC]: 3 / STRATEGIC SYSTEMS PROGRAMS (SSP)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) M4A1 Supressor		2017	USMC / Quantico, VA	MIPR	Quantico, VA	May 2017	Jan 2019	1,040	1,120.19	N		
1.1.3) AN/PVQ-31B (RCOM4)		2016	USMC / Quantico, VA	MIPR	Quantico, VA	Jun 2016	Jun 2017	849	872.79	N		
1.1.3) AN/PVQ-31B (RCOM4)		2017	USMC / Quantico, VA	MIPR	Quantico, VA	May 2017	May 2018	1,040	902.03	N		
1.1.4) AN/PEQ-16		2016	USMC / Quantico, VA	MIPR	Quantico, VA	Jun 2016	Jun 2017	849	1,836.74	N		
1.1.4) AN/PEQ-16		2017	USMC / Quantico, VA	MIPR	Quantico, VA	May 2017	May 2018	1,040	1,873.08	N		
1.1.7) AN/PVS-14		2017	USMC / Quantico, VA	MIPR	Quantico, VA	May 2017	May 2018	352	3,752.72	N		
1.1.9) AN/PAS-13G (V) 1		2017	USMC / Quantico, VA	MIPR	Quantico, VA	May 2017	May 2018	158	8,160.31	N		

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4205 / Close-In Wpns Sys (CIWS) Mods

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,696.967	63.318	44.126	37.147	0.000	37.147	6.420	2.885	2.946	3.003	94.881	1,951.693
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,696.967	63.318	44.126	37.147	0.000	37.147	6.420	2.885	2.946	3.003	94.881	1,951.693
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,696.967**	**63.318**	**44.126**	**37.147**	**0.000**	**37.147**	**6.420**	**2.885**	**2.946**	**3.003**	**94.881**	**1,951.693**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Phalanx Close-In Weapon System (CIWS) is an autonomous combat system that searches, detects, tracks (radar and electro-optic), and engages threats with a 20mm Gatling gun capable of firing 4,500 tungsten penetrator rounds per minute. Integral to ship self-defense and the anti-air warfare "defense-in-depth" concept, CIWS provides terminal defense against anti-ship missiles and high-speed aircraft penetrating other fleet defenses. Phalanx CIWS can operate autonomously or be integrated with a ship's combat system.

The Block 1B configuration provides further defense against asymmetric threats such as small, fast surface craft, low slow-flying fixed and rotary-winged aircraft, and unmanned aerial vehicles through the addition of an integrated Forward-Looking Infra-Red (FLIR) sensor. Block 1B also incorporates an Optimized Gun Barrel (OGB) for tighter ordnance dispersion. Enhanced Lethality Cartridges (ELC) can be used with the OGB for improved target penetration.

The CIWS SeaRAM is a CIWS Phalanx Block 1B with the 20mm Gatling gun removed and replaced by an eleven round guide that utilizes the Rolling Airframe Missile (RAM) Block 1A or Block 2 missiles for extended Anti-Ship Missile coverage. The resulting system is designated MK 15 Mod 31/32 CIWS SeaRAM and shares a minimum of 85% hardware and software commonality of the CIWS Phalanx system. CIWS SeaRAM is installed on LCS Independence class and 8 ROTA based DDGs.

[DT6IN/DT8IN]Installation funding includes all planning and execution requirements for ship installations. Planning efforts include Design Service Allocation (DSA) efforts associated with the planning yard ship checks, Ship Installation Drawing (SID) development, installation on-site support and Ship Selected Record (SSR) updates. Execution efforts include shipyard planning, shipyard support services, installation material procurement, and Alteration Installation Team (AIT) efforts. (Installations include the Rota DDG SeaRAM installs on DDGs 51,64,71,75,78,79,80 and 84; and the installation efforts also support for the Navy Type Navy Owned (NTNO) Coast Guard WMSLs.)

[P5 / DT001 CIWS BLOCK 1B]: In FY21 this budget provides for procurement/install of CRDC (CIWS RAM Defense Capability) to improve sensor capability. The CRDC is fielded aboard CVN class ships. This line provides for Hardware procurement, installation hardware and labor for AIT, In Service Engineering Agent (ISEA), contractor support and initial Integrated Logistics Support (ILS). This budget provides for development and fielding of future ECPs and ORDALTS.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4205 / Close-In Wpns Sys (CIWS) Mods

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / Close-In Wpns Sys (CIWS) Mods				- / 385.026	- / 55.268	- / 40.676	- / 28.147	- / 0.000	- / 28.147
P-3a	1 / Block 1B Baseline 2 Radar Upgrades (ECP/ORDALT)				- / 187.359	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	2 / CIWS Block 1 B (Phalanx CIWS Block 1)				- / 1,124.582	- / 8.050	- / 3.450	- / 9.000	- / 0.000	- / 9.000
P-40	**Total Gross/Weapon System Cost**				**- / 1,696.967**	**- / 63.318**	**- / 44.126**	**- / 37.147**	**- / 0.000**	**- / 37.147**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	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-5	1 / Close-In Wpns Sys (CIWS) Mods				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / Block 1B Baseline 2 Radar Upgrades (ECP/ORDALT)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 187.359
P-3a	2 / CIWS Block 1 B (Phalanx CIWS Block 1)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1,145.082
P-40	**Total Gross/Weapon System Cost**				**- / 6.420**	**- / 2.885**	**- / 2.946**	**- / 3.003**	**- / 94.881**	**- / 1,951.693**

*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:
There are 241 U.S. (USN/USCG) shipboard systems, 4 trainers, 3 Engineering Development Module (EDM)/Periodic Conformance Inspection (PCI) mounts procured in the Program of Record.

FY21 Funding provides for procurement/install of CRDC (CIWS RAM Defense Capability) to improve sensor capability. The CRDC is fielded aboard CVN class ships. This line provides for Hardware procurement, installation hardware and labor for AIT, In Service Engineering Agent (ISEA), contractor support and initial Integrated Logistics Support (ILS). This budget provides for development and fielding of future ECP's and ORDALTs.

FY2021 Installation funding includes SEARAM installations on ROTA DDG's procured under separate budget line items.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4205 / Close-In Wpns Sys (CIWS) Mods	**Item Number / Title [DODIC]:** 1 / Close-In Wpns Sys (CIWS) Mods
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	385.026	55.268	40.676	28.147	0.000	28.147
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	385.026	55.268	40.676	28.147	0.000	28.147
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**385.026**	**55.268**	**40.676**	**28.147**	**0.000**	**28.147**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - DT001 CIWS BLOCK 1B Cost																		
Recurring Cost																		
1.1.1) Trainer Installation	74,250.00	4	0.297	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) ECP/ORDALT (1)	-	-	39.530	-	-	3.179	-	-	3.241	-	-	3.305	-	-	0.000	-	-	3.305
1.1.3) TRAINER UPGRADE/ CONVERSION	1,908K	4	7.633	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.4) TRAINER	1,916K	4	7.666	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.5) BLOCK 1B RM&A ROADMAP (2)	-	-	77.016	-	-	23.952	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.6) GRAY RADOMES	-	-	1.880	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.7) PRODUCTION ENGINEERING (3)	-	-	121.544	-	-	3.883	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.8) Sensor Upgrades (4)	-	-	63.700	-	-	24.254	-	-	26.535	-	-	24.842	-	-	0.000	-	-	24.842
1.1.9) SeaRAM ROTA DDG	-	-	65.760	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.10) CG Modernization	-	-	0.000	-	-	0.000	-	-	10.900	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*385.026*	-	-	*55.268*	-	-	*40.676*	-	-	*28.147*	-	-	*0.000*	-	-	*28.147*
Subtotal: Hardware - DT001 CIWS BLOCK 1B Cost	**-**	**-**	***385.026***	**-**	**-**	***55.268***	**-**	**-**	***40.676***	**-**	**-**	***28.147***	**-**	**-**	***0.000***	**-**	**-**	***28.147***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4205 / Close-In Wpns Sys (CIWS) Mods	Item Number / Title [DODIC]: 1 / Close-In Wpns Sys (CIWS) Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Gross/Weapon System Cost	-	-	385.026	-	-	55.268	-	-	40.676	-	-	28.147	-	-	0.000	-	-	28.147

Footnotes:

(1) Software BL 2.17 completed and being fielded for the enhancement of counter Unmanned Aerial Vehicle (UAV) capability.

(2) Block 1B RM&A procurements cancelled.

(3) Production Engineering efforts associated with RM&A procurements cancelled.

(4) The CIWS RAM Defense Capability (CRDC) is fielded aboard CVN 68 NIMITZ class ships to improve sensor capability. This line provides for hardware procurement, installation hardware and labor for AIT, ISEA, contractor support and initial ILS support. FY 2021 funding supports the procurement of ship set of sensors and enclosures hardware for CVN 71 and installation efforts.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4205 / Close-In Wpns Sys (CIWS) Mods	**Modification Number / Title:** 1 / Block 1B Baseline 2 Radar Upgrades
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	187.359	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	187.359
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	187.359	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	187.359
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**187.359**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**187.359**
(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 Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The CIWS Block 1B Baseline 2 Radar Upgrade (RUG) Kit is required for CGs, CVNs, DDGs, LCCs, LHAs, LHDs, LPDs, LSDs and WMSLs platforms. The CIWS Block IB Baseline 2 RUG kit is new state of the art digital radar that provides improved performance and increased reliability. It mitigates 200 obsolete components inherent in the existing analog radar by introducing advanced COTS-based signal processing coupled with new low noise signal source. It provides a 2x sensitivity increase along with expanded Doppler (velocity) coverage required for detection and tracking of advanced ASCM and asymmetric threats, provides a 10% increase in system level reliability and provides a 15% reduction in sailor man-hours required for CIWS planned system maintenance.

FY 2016 was the last year of procurement for Radar Upgrade (RUG) Kits.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4205 / Close-In Wpns Sys (CIWS) Mods	**Modification Number / Title:** 1 / Block 1B Baseline 2 Radar Upgrades
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CIWS Block 1B Block 1B Baseline 2 Radar Upgrades	**Modification Type:** ECP/ORDALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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												
Modification Item 1 of 1: Block 1B Baseline 2 Radar Upgrades												
B Kits												
Recurring												
1.1.1) Block 1B Baseline 2 Radar Upgrades - Organic	259 / 187.359	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	259 / 187.359
Subtotal: Recurring	*- / 187.359*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 187.359*
Subtotal: Block 1B Baseline 2 Radar Upgrades	*259 / 187.359*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*259 / 187.359*
Subtotal: Procurement, All Modification Items	*- / 187.359*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 187.359*
Installation												
Subtotal: Installation	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*
Total												
Total Cost (Procurement + Support + Installation)	**187.359**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**187.359**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4205 / Close-In Wpns Sys (CIWS) Mods	**Modification Number / Title:** 1 / Block 1B Baseline 2 Radar Upgrades
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Block 1B Baseline 2 Radar Upgrades

Manufacturer Information

Manufacturer Name: Raytheon CO	Manufacturer Location: Louisville KY
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4205 / Close-In Wpns Sys (CIWS) Mods	**Modification Number / Title:** 2 / CIWS Block 1 B
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,124.582	8.050	3.450	9.000	0.000	9.000	0.000	0.000	0.000	0.000	0.000	1,145.082
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,124.582	8.050	3.450	9.000	0.000	9.000	0.000	0.000	0.000	0.000	0.000	1,145.082
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,124.582**	**8.050**	**3.450**	**9.000**	**0.000**	**9.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**1,145.082**
(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 Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Block 1B mount includes the addition of a thermal imager, an automatic acquisition video tracker, and stabilization system for the tracker. The upgrade is essential to provide the Fleet capability against small high speed surface threats and low speed air threats.

[CIWS Block 1B] Installation schedule reflects the installation of the CIWS Block 1B and the modification kits CIWS Block 1B conversion upgrade. These 2 cost elements are incorporated into the mount at the factory and the complete mount is installed. It also includes four (4) SeaRAM installation for Rota-based DDGs (in FY19-FY21) procured under separate budget line items. The budget also provides for the Design Service Allocation (DSA) efforts associated with the planning yard ship checks, Ship Installation Drawing (SID) development, installation on-site support and Ship Selected Record (SSR) updates.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4205 / Close-In Wpns Sys (CIWS) Mods	**Modification Number / Title:** 2 / CIWS Block 1 B
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: DT001 CIWS Block 1B CIWS Block 1B	**Modification Type:** Phalanx CIWS Block 1	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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												
Modification Item 1 of 1: CIWS Block 1 B												
B Kits												
Non-Recurring												
1.1.1) CIWS Block 1B - NonOrganic	239 / 505.717	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	239 / 505.717
1.1.2) Modifications Kits CIWS Block 1B Conversion and Upgrade - Organic	- / 464.686	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 464.686
Subtotal: Non-Recurring	*- / 970.403*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 970.403*
Subtotal: CIWS Block 1 B	*239 / 970.403*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*239 / 970.403*
Subtotal: Procurement, All Modification Items	*- / 970.403*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 970.403*
Installation												
Modification Item 1 of 1: CIWS Block 1 B	- / 154.179	- / 8.050	- / 3.450	- / 9.000	- / 0.000	- / 9.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 174.679
Subtotal: Installation	*- / 154.179*	*- / 8.050*	*- / 3.450*	*- / 9.000*	*- / -*	*- / 9.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 174.679*
Total												
Total Cost (Procurement + Support + Installation)	**1,124.582**	**8.050**	**3.450**	**9.000**	**0.000**	**9.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**1,145.082**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4205 / Close-In Wpns Sys (CIWS) Mods	**Modification Number / Title:** 2 / CIWS Block 1 B

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

Modification Item 1 of 1: CIWS Block 1 B

Manufacturer Information

Manufacturer Name: Raytheon Co | Manufacturer Location: Louisville KY

Administrative Leadtime *(in Months)*: 0 | Production Leadtime *(in Months)*: 24

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Aug 2019		Mar 2021				
Delivery Dates	Aug 2021		Mar 2023				

Installation Information

Method of Implementation: Non-Recurring:: Installation Name: BKits

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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	243 / 154.179	2 / 8.050	0 / 3.450	2 / 9.000	0 / 0.000	2 / 9.000	- / -	- / -	- / -	- / -	0 / 0.000	247 / 174.679
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	243 / 154.179	2 / 8.050	0 / 3.450	2 / 9.000	0 / 0.000	2 / 9.000	- / -	- / -	- / -	- / -	0 / 0.000	247 / 174.679

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				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	235	-	1	-	1	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	239
Out	235	-	1	-	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	239

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	175.533	40.823	43.927	45.804	0.000	45.804	46.458	47.409	48.375	49.342	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	175.533	40.823	43.927	45.804	0.000	45.804	46.458	47.409	48.375	49.342	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**175.533**	**40.823**	**43.927**	**45.804**	**0.000**	**45.804**	**46.458**	**47.409**	**48.375**	**49.342**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.388	0.722	0.634	-	0.634	0.696	0.710	0.724	0.739	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Coast Guard Weapons line funds the Navy-Type/Navy-Owned Coast Guard gun weapons system and combat system suite for the United States Coast Guard (USCG) cutters under the Coast Guard surface asset acquisition program. Under inter-service agreement (delineated in OPNAVINST 4000.79C), DON plans, programs, and budgets for specific Navy military equipment, systems and logistic support are required for USCG units to ensure the USCG is prepared to execute naval warfare tasks in consonance with United States Navy (USN) units. Ship construction and installation costs are funded under the Department of Homeland Security appropriation.

The MK110 57MM Gun is the primary weapon system of the Offshore Patrol Cutter (OPC) and National Security Cutter (NSC), and the MK160 Gun Control System is a mandatory component of each MK110 57MM Gun. The MK-38 Machine Gun System is the primary weapon systems of the Fast Response Cutter (FRC) and Medium Range Endurance Cutters (WMEC). These weapon systems, as well as their integration with the combat systems and sensors of each supported hull, are critical to their self-defense and offensive capabilities.

The combat systems and weapons suite is aligned with future naval ship building programs to support commonality among the two service's systems and meet national fleet objectives. The combat system suite shall complement and integrate with Navy combat systems, enabling the USCG to accomplish the assigned naval warfare tasks in concert with USN units.

[P5 / CG002 MK 110 GUN]: Provides the MK 110 gun to engage surface threats, independently or in cooperation with other forces, achieving mission kill on high-speed coastal patrol craft beyond small and intermediate caliber gunfire effective range. Includes gun mount, equipment procurement, recurring engineering, and ILS support for the United States Coast Guard National Security Cutter (NSC), aka the Maritime Security Cutter, Large (WMSL), and the Offshore Patrol Cutter (OPC), aka the Maritime Security Cutter, Medium (WMSM), in accordance with OPNAVINST 4000.79(Series) and the Naval Operational Capabilities (NOC) document.

[P5 / CG003 MK 160 GCS]: Provides the MK 160 Mod 12 Gun Computer System (GCS) including equipment procurement, production support, systems engineering, data, and software and test support for the National Security Cutter (NSC), aka the Maritime Security Cutter, Large (WMSL), and the Offshore Patrol Cutter (OPC), aka the Maritime Security Cutter, Medium (WMSM). The MK 160 GCS is required to plan and direct surface threat engagements including the capability to fire warning shots, disabling fire and achieve mission kill against these threats in accordance with National Fleet Policy, OPNAVINST 4000.79(Series), and the NOC.

[P5 / CG004 MK 38 MACHINE GUN SYSTEMS]: Provides the MK 38 Mod 2/3 Machine Gun System (MGS) to plan and engage surface threats, achieving missions kill on high speed patrol craft beyond minor caliber gunfire effective range in accordance with OPNAVINST 4000.79(Series) and the NOC. The MK 38 Mod 3 (vice Mod 2), which began production in FY 2015, permits greater effective range, greater

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons	
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		

range of elevation to engage air targets, and an improved Toplite electro-optical (EO) system. The MK 38 MGS increases shipboard self-defense against small boat threats and is the main gun of the Fast Response Cutter (FRC), the Offshore Patrol Cutter (OPC), and the WMEC 270' classes. Includes the MK 38 gun mount, Toplite, cannon, and ancillary components, recurring engineering, outfitting spares, and integrated logistics support (ILS). The MK 38 MGS for the OPC Class will include a 7.62mm MK 52 MOD 0 Coaxial Automatic Gun (COAX ORDALT) for Anti-terrorism / Force Protection (AT/FP) missions in narrow waterways and in-port.

[P5 / MK38 COAXIAL GUN UPGRADE]: The MK 38 MGS for the OPC Class requirement has been updated to include an attached 7.62mm MK 52 MOD 0 Coaxial Automatic Gun (COAX ORDALT) for Anti-terrorism / Force Protection (AT/FP) missions in narrow waterways and in-port.

[P5 / CG005 GUN WEAPON SYSTEM INTEGRATION]: Ensures successful integration and system interoperability of Navy type equipment that affects the gun weapon systems of USCG National Security Cutter (NSC), aka the Maritime Security Cutter, Large (WMSL), the Offshore Patrol Cutter (OPC), aka the Maritime Security Cutter, Medium (WMSM), and Fast Response Cutters (FRCs). Includes gun weapon system integration support for the OPC ATHENA Control, Correlation & Display (CCD) System which provides target queuing for Gun Weapon System engagements.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / Coast Guard Weapons	P-5a, P-21			- / 175.533	- / 40.823	- / 43.927	- / 45.804	- / 0.000	- / 45.804
P-40	**Total Gross/Weapon System Cost**				**- / 175.533**	**- / 40.823**	**- / 43.927**	**- / 45.804**	**- / 0.000**	**- / 45.804**

*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 2021 funding supports the procurement of Navy Type/Navy Owned (NT/NO) gun weapon systems, integrated logistics support (ILS), technical documentation, software, test and production support for USCG National Security Cutters (WMSLs), Fast Response Cutters (FRCs), Medium Range Endurance Cutters (WMECs), and Offshore Patrol Cutters (OPC) being constructed under the Coast Guard Surface Asset Acquisition Program.

FY 2021 funds the following Coast Guard Weapon items for USCG cutters: procurement of MK 110 57MM Guns and associated ILS; procurement of MK 160 Gun Computer Systems and associated support; procurement of MK38 Machine Gun Systems, associated spares/equipment, MK38 Upgrade to attach a 7.62 MM MK52 Mod 0 Coaxial Gun, and associated ILS support; provide integration of Gun Weapon Systems with Combat Systems and Sensors (Gun Weapon System Integration) for all supported hull classes; procure and integrate the ATHENA Control, Correlation & Display (CCD) System on OPCs, which provides target queuing for Gun Weapon System engagements.

FY 2021 through FY 2023, as well as in FY 2020, reflects a change in requirement for the WMEC 270' Modification to procure one MK38 per WMEC hull instead of one MK110 57MM Gun per hull. MK110 57 MM Gun integrated logistics support (ILS) Support has been reduced in proportion to the reduction in procurement. ILS Support for the MK38 for WMEC is therefore added in FY 2020 and continuing through the end of the FYDP.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons	**Item Number / Title [DODIC]:** 1 / Coast Guard Weapons
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	175.533	40.823	43.927	45.804	0.000	45.804
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	175.533	40.823	43.927	45.804	0.000	45.804
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**175.533**	**40.823**	**43.927**	**45.804**	**0.000**	**45.804**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	0.388	0.722	0.634	-	0.634
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - CG002 MK 110 GUN Cost																		
Recurring Cost																		
1.1.1) 57MM GUN(†) (1)	8,372K	9	75.346	9,023K	2	18.046	9,195K	2	18.390	9,370K	2	18.740	-	-	-	9,370K	2	18.740
1.1.2) ILS SUPPORT (2)	-	-	14.304	-	-	2.363	-	-	2.713	-	-	3.395	-	-	-	-	-	3.395
Subtotal: Recurring Cost	-	-	*89.650*	-	-	*20.409*	-	-	*21.103*	-	-	*22.135*	-	-	-	-	-	*22.135*
Subtotal: Hardware - CG002 MK 110 GUN Cost	**-**	**-**	***89.650***	**-**	**-**	***20.409***	**-**	**-**	***21.103***	**-**	**-**	***22.135***	**-**	**-**	**-**	**-**	**-**	***22.135***
Hardware - CG003 MK 160 GCS Cost																		
Recurring Cost																		
2.1.1) SYSTEM ENGINEERING SUPPORT	-	-	1.340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.2) PRODUCTION SUPPORT	-	-	3.748	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.3) DATA	-	-	1.277	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.4) SOFTWARE & TEST SUPPORT	-	-	1.927	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.5) ANCILLARY EQUIPMENT(†)	522,500.00	2	1.045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.6) GUN COMPUTER SYSTEM(†)	1,599K	5	7.993	1,564K	3	4.692	1,594K	2	3.188	1,624K	2	3.248	-	-	-	1,624K	2	3.248

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4206 / Coast Guard Weapons	Item Number / Title [DODIC]: 1 / Coast Guard Weapons
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
2.1.7) MK160 GCS SOFTWARE UPDATE OPC	-	-	1.900	-	-	0.648	-	-	-	-	-	-	-	-	-	-	-	-
2.1.8) ILS SUPPORT (3)	-	-	1.424	-	-	0.468	-	-	0.564	-	-	0.704	-	-	-	-	-	0.704
Subtotal: Recurring Cost	-	-	*20.654*	-	-	*5.808*	-	-	*3.752*	-	-	*3.952*	-	-	-	-	-	*3.952*
Subtotal: Hardware - CG003 MK 160 GCS Cost	**-**	**-**	***20.654***	**-**	**-**	***5.808***	**-**	**-**	***3.752***	**-**	**-**	***3.952***	**-**	**-**	**-**	**-**	**-**	***3.952***
Hardware - CG004 MK 38 MACHINE GUN SYSTEMS Cost																		
Recurring Cost																		
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC(†)	978,046.51	43	42.056	1,278K	6	7.668	1,302K	6	7.812	1,327K	6	7.962	-	-	-	1,327K	6	7.962
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC(†)	1,242K	2	2.484	1,278K	1	1.278	1,302K	2	2.604	1,327K	2	2.654	-	-	-	1,327K	2	2.654
3.1.3) MACHINE GUN SYSTEM EQUIPMENT WMEC(†) (4)	-	-	-	-	-	-	1,302K	1	1.302	1,327K	1	1.327	-	-	-	1,327K	1	1.327
3.1.4) MK38 COAXIAL GUN UPGRADE (5)	-	-	-	-	-	0.413	-	-	0.420	-	-	0.428	-	-	-	-	-	0.428
3.1.5) ILS SUPPORT FRC	-	-	10.252	-	-	2.376	-	-	2.418	-	-	2.466	-	-	-	-	-	2.466
3.1.6) ILS SUPPORT OPC (6)	-	-	0.780	-	-	0.396	-	-	0.606	-	-	0.822	-	-	-	-	-	0.822
3.1.7) ILS Support WMEC (7)	-	-	-	-	-	-	-	-	0.390	-	-	0.390	-	-	-	-	-	0.390
Subtotal: Recurring Cost	-	-	*55.572*	-	-	*12.131*	-	-	*15.552*	-	-	*16.049*	-	-	-	-	-	*16.049*
Subtotal: Hardware - CG004 MK 38 MACHINE GUN SYSTEMS Cost	**-**	**-**	***55.572***	**-**	**-**	***12.131***	**-**	**-**	***15.552***	**-**	**-**	***16.049***	**-**	**-**	**-**	**-**	**-**	***16.049***
Support - CG005 GUN WEAPON SYSTEM INTEGRATION Cost																		
4.1) Gun Weapon System Integration (8)	-	-	9.657	-	-	2.475	-	-	3.520	-	-	3.668	-	-	-	-	-	3.668
Subtotal: Support - CG005 GUN WEAPON SYSTEM INTEGRATION Cost	**-**	**-**	***9.657***	**-**	**-**	***2.475***	**-**	**-**	***3.520***	**-**	**-**	***3.668***	**-**	**-**	**-**	**-**	**-**	***3.668***
Gross/Weapon System Cost	**-**	**-**	**175.533**	**-**	**-**	**40.823**	**-**	**-**	**43.927**	**-**	**-**	**45.804**	**-**	**-**	**0.000**	**-**	**-**	**45.804**

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons	**Item Number / Title [DODIC]:** 1 / Coast Guard Weapons
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Remarks:
[Support Cost] Item name changed from Combat System Integration to Gun Weapon System Integration beginning in FY2020 at direction of Resource Sponsor.

(†) indicates the presence of a P-5a

Footnotes:
(1) Reductions of one 57MM Gun per year in FY 2020 through FY 2023 are due to removal of the requirement to outfit WMEC with the 57MM GUN during the 270' Modernization project. The WMEC 270' Modernization requirement has been updated to procure a MK38 Gun on each hull in place of the 57MM Gun.
(2) FY 2020 to FY2021 increase of $.682 attributed to initial outfitting of ILS package for MK110 Gun on each hull. In FY21 and out, cost growth is forecasted to be only marginal, approximating inflation.
(3) FY 2020 to FY2021 increase of $.14 M attributed to initial outfitting of ILS package for MK160 Gun on each hull. In FY21 and out, cost growth is forecasted to be only marginal, approximating inflation
(4) The WMEC 270 Modernization requirement has been updated to procure a MK38 Gun on each hull in place of the 57MM Gun starting in FY 2020.
(5) The MK38 will be upgraded with an attached MK 52 Mod 0 Coaxial Automatic Gun.
(6) FY 2020 to FY2021 increase of $.216 M. attributed to initial outfitting of ILS package for MK160 Gun on each hull. In FY21 and out, cost growth is forecasted to be only marginal, approximating inflation.
(7) ILS Support for the WMEC 270 Modernization is added to support the updated requirement to procure a MK38 Gun on each WMEC hull in replacement of the 57MM Gun requirement.
(8) FY 2020 to FY 2021 increase attributed to system integration of the MK48 Gun Weapon System to the Aegis Athena Combat System.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4206 / Coast Guard Weapons	Item Number / Title [DODIC]: 1 / Coast Guard Weapons

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) 57MM GUN(†)		2013	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NAVSEA	Sep 2014	Sep 2016	1	8,600K	Y		Jun 2010
1.1.1) 57MM GUN(†)		2015	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NAVSEA	Oct 2015	Oct 2017	1	8,097K	Y		Oct 2013
1.1.1) 57MM GUN(†)		2016	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NAVSEA	Dec 2015	Dec 2017	1	8,528K	Y		Oct 2013
1.1.1) 57MM GUN(†)		2017	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NAVSEA	Aug 2017	Aug 2019	2	8,490K	Y		Aug 2016
1.1.1) 57MM GUN(†)		2018	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NAVSEA	Jun 2018	Jun 2020	2	8,855K	Y		Aug 2016
1.1.1) 57MM GUN(†)		2019 (9)	BAE SYSTEMS / MINNEAPOLIS, MN	C / FFP	NAVSEA	Jun 2019	Sep 2021	2	9,023K	Y		Aug 2016
1.1.1) 57MM GUN		2020 (10)	BAE SYSTEMS / MINNEAPOLIS, MN	C / FFP	NAVSEA	Apr 2020	Jul 2022	2	9,195K	N		
1.1.1) 57MM GUN		2021 (11)	BAE SYSTEMS / MINNEAPOLIS, MN	C / FFP	NAVSEA	Apr 2021	Apr 2023	2	9,370K	Y		Aug 2016
2.1.5) ANCILLARY EQUIPMENT		2016	US Army Contracting Command / Picatinny Arsenal, NJ	MIPR	Picatinny, NJ	Aug 2016	Aug 2017	2	522,500.00	Y		Mar 2016
2.1.6) GUN COMPUTER SYSTEM		2017	LOCKHEED MARTIN / MANASSAS, VA	C / FFP	NAVSEA	Mar 2017	Dec 2017	1	1,506K	Y		Jan 2016
2.1.6) GUN COMPUTER SYSTEM		2018	LOCKHEED MARTIN / MANASSAS, VA	C / FFP	NAVSEA	Mar 2018	Dec 2018	3	1,535K	Y		Jan 2016
2.1.6) GUN COMPUTER SYSTEM		2019 (12)	LOCKHEED MARTIN / MANASSAS, VA	C / FFP	NAVSEA	Jun 2019	Dec 2020	3	1,564K	Y		Jan 2016
2.1.6) GUN COMPUTER SYSTEM		2020 (13)	LOCKHEED MARTIN / MANASSAS, VA	C / FFP	NAVSEA	Jun 2020	Dec 2021	2	1,594K	N		Jan 2016
2.1.6) GUN COMPUTER SYSTEM		2021 (14)	LOCKHEED MARTIN / MANASSAS, VA	C / FFP	NAVSEA	Jun 2021	Dec 2022	2	1,624K	Y		Jan 2016
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC(†)		2015	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NSWC IHD	Oct 2015	Oct 2016	4	1,185K	Y		Aug 2015
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC(†)		2017	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NSWC IHD	Sep 2017	Sep 2018	1	1,230K	Y		Aug 2016
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC(†)		2018	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NSWC IHD	Jun 2018	Jun 2019	11	1,254K	Y		Aug 2016
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC(†)		2019	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NSWC IHD	Jun 2019	Jun 2020	6	1,278K	Y		Aug 2016
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC		2020	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NSWC IHD	Jun 2020	Jun 2021	6	1,302K	N		Aug 2016
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC		2021	BAE SYSTEMS / MINNEAPOLIS, MN	C / TBD	** NO PCO **	Oct 2020	Oct 2021	6	1,327K	N		
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC(†)		2017	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NSWC IHD	Mar 2017	Mar 2018	1	1,230K	Y		Aug 2015

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4206 / Coast Guard Weapons	Item Number / Title [DODIC]: 1 / Coast Guard Weapons

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC(†)		2018	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NSWC IHD	Jun 2018	Jun 2019	1	1,254K	Y		Aug 2015
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC		2019	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NSWC IHD	Jun 2019	Jun 2020	1	1,278K	Y		Aug 2015
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC		2020	BAE SYSTEMS / MINNEAPOLIS, MN	SS / FP	NSWC IHD	Jun 2021	Jun 2022	2	1,302K	N		Aug 2015
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC		2021	BAE SYSTEMS / MINNEAPOLIS, MN	C / TBD	** NO PCO **	Oct 2020	Oct 2021	2	1,327K	N		
3.1.3) MACHINE GUN SYSTEM EQUIPMENT WMEC		2020	BAE SYSTEMS / MINNEAPOLIS, MN	C / TBD	** NO PCO **	Oct 2019	Oct 2020	1	1,302K	N		
3.1.3) MACHINE GUN SYSTEM EQUIPMENT WMEC		2021	BAE SYSTEMS / MINNEAPOLIS, MN	C / TBD	** NO PCO **	Oct 2020	Oct 2021	1	1,327K	N		

(†) indicates the presence of a P-21

Footnotes:

(9) 27 month manufacturing lead time.

(10) 27 month manufacturing lead time.

(11) 24 month manufacturing lead time for OPC 6 MK110 Gun, 27 month manufacturing lead time for OPC 7 MK110 Gun.

(12) Manufacturing lead time will be 18 months.

(13) Manufacturing lead time will be 18 months.

(14) Manufacturing lead time will be 18 months.

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2 | **P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons | **Item Number / Title [DODIC]:** 1 / Coast Guard Weapons

Cost Elements (Units in Each)							Fiscal Year 2014												Fiscal Year 2015												BALANCE
										Calendar Year 2014												Calendar Year 2015									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) 57MM GUN (1)																															
Prior Years Deliveries: 2																															
	1	2013	NAVY	1	0	1												A -	-	-	-	-	-	-	-	-	-	-	-	-	1
	1	2015	NAVY	1	0	1																									1
	1	2016	NAVY	1	0	1																									1
	1	2017	NAVY	2	0	2																									2
	1	2018	NAVY	2	0	2																									2
	1	2019	NAVY	2 (15)	0	2																									2
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC																															
Prior Years Deliveries: 27																															
	2	2015	NAVY	4	0	4																									4
	2	2017	NAVY	1	0	1																									1
	2	2018	NAVY	11	0	11																									11
	2	2019	NAVY	6	0	6																									6
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC																															
	3	2017	NAVY	1	0	1																									1
	3	2018	NAVY	1	0	1																									1
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2 | **P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons | **Item Number / Title [DODIC]:** 1 / Coast Guard Weapons

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
										Calendar Year 2016												Calendar Year 2017									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) 57MM GUN (1)																															
Prior Years Deliveries: 2																															
	1	2013	NAVY	1	0	1	-	-	-	-	-	-	-	-	-	-	-	1													0
	1	2015	NAVY	1	0	1	A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	1	2016	NAVY	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	1	2017	NAVY	2	0	2																							A -	-	2
	1	2018	NAVY	2	0	2																									2
	1	2019	NAVY	2 (15)	0	2																									2
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC																															
Prior Years Deliveries: 27																															
	2	2015	NAVY	4	0	4	A -	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	1	-	-	1			0
	2	2017	NAVY	1	0	1																								A -	1
	2	2018	NAVY	11	0	11																									11
	2	2019	NAVY	6	0	6																									6
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC																															
	3	2017	NAVY	1	0	1																		A -	-	-	-	-	-	-	1
	3	2018	NAVY	1	0	1																									1
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2 | **P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons | **Item Number / Title [DODIC]:** 1 / Coast Guard Weapons

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) 57MM GUN (1)																															
Prior Years Deliveries: 2																															
	1	2013	NAVY	1	1	0																									0
	1	2015	NAVY	1	0	1	1																								0
	1	2016	NAVY	1	0	1	-	-	1																						0
	1	2017	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	1	2018	NAVY	2	0	2									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	1	2019	NAVY	2 (15)	0	2																					A -	-	-	-	2
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC																															
Prior Years Deliveries: 27																															
	2	2015	NAVY	4	4	0																									0
	2	2017	NAVY	1	0	1	-	-	-	-	-	-	-	-	-	-	-	1													0
	2	2018	NAVY	11	0	11									A -	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	9
	2	2019	NAVY	6	0	6																					A -	-	-	-	6
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC																															
	3	2017	NAVY	1	0	1	-	-	-	-	-	1																			0
	3	2018	NAVY	1	0	1									A -	-	-	-	-	-	-	-	-	-	-	-	1				0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2 | **P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons | **Item Number / Title [DODIC]:** 1 / Coast Guard Weapons

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) 57MM GUN (1)																															
Prior Years Deliveries: 2																															
	1	2013	NAVY	1	1	0																									0
	1	2015	NAVY	1	1	0																									0
	1	2016	NAVY	1	1	0																									0
	1	2017	NAVY	2	1	1	-	1																							0
	1	2018	NAVY	2	0	2	-	-	-	-	-	-	-	-	1	-	-	1													0
	1	2019	NAVY	2 (15)	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC																															
Prior Years Deliveries: 27																															
	2	2015	NAVY	4	4	0																									0
	2	2017	NAVY	1	1	0																									0
	2	2018	NAVY	11	2	9	1	-	1	-	1	1	1	1	-	1	-	1	-	1											0
	2	2019	NAVY	6	0	6	-	-	-	-	-	-	-	-	1	-	1	-	1	-	1	-	1	-	1						0
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC																															
	3	2017	NAVY	1	1	0																									0
	3	2018	NAVY	1	1	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2 | **P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons | **Item Number / Title [DODIC]:** 1 / Coast Guard Weapons

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) 57MM GUN [1]																															
Prior Years Deliveries: 2																															
	1	2013	NAVY	1	1	0																									0
	1	2015	NAVY	1	1	0																									0
	1	2016	NAVY	1	1	0																									0
	1	2017	NAVY	2	2	0																									0
	1	2018	NAVY	2	2	0																									0
	1	2019	NAVY	2 [15]	1	1	-	-	1																						0
3.1.1) MACHINE GUN SYSTEM EQUIPMENT FRC																															
Prior Years Deliveries: 27																															
	2	2015	NAVY	4	4	0																									0
	2	2017	NAVY	1	1	0																									0
	2	2018	NAVY	11	11	0																									0
	2	2019	NAVY	6	6	0																									0
3.1.2) MACHINE GUN SYSTEM EQUIPMENT OPC																															
	3	2017	NAVY	1	1	0																									0
	3	2018	NAVY	1	1	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4206 / Coast Guard Weapons	**Item Number / Title [DODIC]:** 1 / Coast Guard Weapons

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	BAE SYSTEMS - MINNEAPOLIS, MN	1	2	4	9	3	30	33	3	3	24	27
2	BAE SYSTEMS - MINNEAPOLIS, MN	10	24	60	6	3	18	21	3	3	12	15
3	BAE SYSTEMS - MINNEAPOLIS, MN	10	24	60	6	3	18	21	3	3	12	15

"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:
(15) Data not yet available

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4217 / Gun Mount Mods

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	788.066	74.633	62.579	74.427	0.000	74.427	75.035	76.533	78.049	79.607	8.381	1,317.310
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	788.066	74.633	62.579	74.427	0.000	74.427	75.035	76.533	78.049	79.607	8.381	1,317.310
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**788.066**	**74.633**	**62.579**	**74.427**	**0.000**	**74.427**	**75.035**	**76.533**	**78.049**	**79.607**	**8.381**	**1,317.310**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	1.013	1.102	3.437	-	3.437	3.777	3.852	3.929	4.007	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Gun Mount Mods supports various types of Gun Weapon Systems, sub-system modifications and upgrade requirements.

[P5 / E5001 MK45 MODS 1&2]: Funding was realigned to E5011.

[P5 / E5002 MEDIUM CALIBER GUN MODS]: Medium Caliber Gun Mounts (MK110 57mm) installed on United States Coast Guard (USCG) Maritime Security Cutters, Large (WMSL), and USCG Medium Endurance Cutters (WMEC) as well as land based training/test units. The gun mounts provide an anti-surface warfare and anti-air warfare capability for outfitted ships. Funds procure Ordnance Alterations (ORDALT kits), and provide Integrated Logistics Support (ILS) and production engineering for system improvements that affect safety, reliability and maintainability.

[P5 / E5004 MK45 MOD 4]: Funding was realigned to E5011.

[P5 / E5006 MINOR CALIBER GUN MODS]: Minor Caliber Gun Mounts (MK38 MOD or MK46 MOD) are installed on Amphibious Assault Ships (AS), Aircraft Carrier (nuclear propulsion) (CVN), Guided Missile Cruisers (CG), Destroyer Designated Guided ships (DDG), Littoral Combat Ships (LCS), Landing Ship Dock amphibious assault ships (LSD), Landing Helicopter Assault ships (LHA), Landing Helicopter Dock amphibious assault ships (LHD), Patrol Crafts Coastal (PC), United States Coast Guard (USCG) Fast Response Cutters (FRC), USCG Offshore Patrol Cutters (OPC), USCG Medium Endurance Cutters (WMEC), Amphibious Command Ships (LCC), MK VI Patrol Boats and land based training/test units. The gun mounts provide an anti-surface warfare and anti-air warfare capability for outfitted ships. Funds procure ORDALT kits, and provide ILS and production engineering for system improvements that affect safety, reliability and maintainability.

[P5 / E5011 MAJOR CALIBER GUN MODS]: The 5-Inch MK45 MOD Gun Mounts are automated, lightweight, single-barrel gun mounts that provide an anti-surface warfare, anti-air warfare, and naval surface fire support capability for outfitted ships. The MK45 is installed on CG47 and DDG51 Class surface ships and land based training/test units. Funds procure ORDALTs kits, and provide ILS and production engineering for system improvements that affect safety, reliability and maintainability.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4217 / Gun Mount Mods

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / Gun Mount Mods				- / 313.569	- / 47.420	- / 43.698	- / 55.168	- / 0.000	- / 55.168
P-3a	1 / E5006 MINOR CALIBER GUN MODS MK38 GUN KITS (TBD)				- / 474.497	- / 27.213	- / 18.881	- / 19.259	- / 0.000	- / 19.259
P-40	**Total Gross/Weapon System Cost**				**- / 788.066**	**- / 74.633**	**- / 62.579**	**- / 74.427**	**- / 0.000**	**- / 74.427**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	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-5	1 / Gun Mount Mods				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / E5006 MINOR CALIBER GUN MODS MK38 GUN KITS (TBD)				- / 13.740	- / 14.842	- / 15.252	- / 17.370	- / 8.381	- / 609.435
P-40	**Total Gross/Weapon System Cost**				**- / 75.035**	**- / 76.533**	**- / 78.049**	**- / 79.607**	**- / 8.381**	**- / 1,317.310**

*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 2021 E5002 MEDIUM CALIBER GUN MODS 2.1.1 increase due to increase in number of in-service guns to address obsolescence and reliability. The increase in FY21 accounts for 4 additional ships that have gone in-service since line establishment.

MK38 Machine Gun System kits will continue procurement of MK38 MOD 3 configuration with multiple capability upgrades: 7.62mm coaxially mounted machine gun, improved Electro-Optical Infrared Sensor (EOIR) for target identification, improved main computer unit, and aerial target detection/tracking/engagement capability. These capabilities will improve ship-based solutions for close range Fast Attack Craft/Fast In-shore Attack Craft (FAC/FIAC) Counter-Swarm and Counter Unmanned Aerial Systems (C-UAS).

Installations for large deck include aircraft carrier (nuclear propulsion) (CVN) installations, submarine tenders (AS), Landing Helicopter Assault Ships (LHA), and Landing Helicopter Dock Ships (LHD). CVN installation costs are much higher than the amphibious ships previously executed (longer cable runs, larger sponsons, and floating crane requirements). Unit costs for installation in FY19-FY24 are based on actuals per installation on CVNs in FY18.

FY 2021 E5006 MINOR CALIBER GUN MODS 4.1.3 increase in Gun Kits ILS/Test/Production due to concurrent installations on CVN, LHD, and LHA class ships, which increased production, installation and test costs.

FY 2021 E5006 MINOR CALIBER GUN MODS 4.1.6 increase is due to ramp up of procurements and installs for upgrade kits for the MK 38 Mod 2 and Mod 3 gun systems. The increase in FY21 accounts for addition of 3 more DDG 51 class ships.

FY 2021 E5006 MINOR CALIBER GUN MODS 4.1.9 increase in MK 38 backfit kit due to ramp-up in MK 38 MOD 3 ORDALTs to upgrade high population of deployed MK 38 MOD 2 systems (>250 units) to enable Counter-Unmanned Aerial Systems (C-UAS) capability per Joint Urgent Operational Need Statement (CC-0558). The increase accounts for 7 more DDG 51 class ships.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4217 / Gun Mount Mods	Item Number / Title [DODIC]: 1 / Gun Mount Mods
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	313.569	47.420	43.698	55.168	0.000	55.168
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	313.569	47.420	43.698	55.168	0.000	55.168
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**313.569**	**47.420**	**43.698**	**55.168**	**0.000**	**55.168**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - E5001 MK45 MODS 1&2 Cost																		
Non Recurring Cost																		
1.1.1) MK45 MODS 1&2 KITS	-	-	16.708	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*16.708*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - E5001 MK45 MODS 1&2 Cost	**-**	**-**	***16.708***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - E5002 MEDIUM CALIBER GUN MODS Cost																		
Recurring Cost																		
2.1.1) MEDIUM CALIBER KITS (1)	-	-	13.732	-	-	2.210	-	-	2.370	-	-	3.708	-	-	0.000	-	-	3.708
2.1.2) MEDIUM CALIBER GUN	-	-	12.875	-	-	9.146	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*26.607*	-	-	*11.356*	-	-	*2.370*	-	-	*3.708*	-	-	*0.000*	-	-	*3.708*
Subtotal: Hardware - E5002 MEDIUM CALIBER GUN MODS Cost	**-**	**-**	***26.607***	**-**	**-**	***11.356***	**-**	**-**	***2.370***	**-**	**-**	***3.708***	**-**	**-**	***0.000***	**-**	**-**	***3.708***
Hardware - E5004 MK45 MOD 4 Cost																		
Non Recurring Cost																		
3.1.1) DDG MODERNIZATION WEAPONS	-	-	8.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
3.1.2) MK45 MOD 4 KITS	-	-	55.912	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4217 / Gun Mount Mods	Item Number / Title [DODIC]: 1 / Gun Mount Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
3.1.3) MK45 MOD 4 KITS-INSTALL / ILS / PRODUCTION	-	-	4.203	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*68.115*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - E5004 MK45 MOD 4 Cost	**-**	**-**	***68.115***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - E5006 MINOR CALIBER GUN MODS Cost																		
Recurring Cost																		
4.1.1) MK38 GUN ENGINEERING CHANGE ORDERS	-	-	11.928	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.1.2) SPS DE-INSTALLATION	-	-	1.416	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.1.3) MK38 GUN KITS ILS / TEST / PRODUCTION SUPT (Surface Warfare) (2)	-	-	31.248	-	-	2.113	-	-	2.243	-	-	2.382	-	-	0.000	-	-	2.382
4.1.4) MK38 GUN KITS ILS / TEST / PRODUCTION SUPT (Expeditionary Warfare)	-	-	1.438	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.1.5) MK38 COAXIAL GUN UPGRADE	-	-	5.034	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.1.6) MK38 UPGRADE KITS (3)	-	-	23.105	-	-	13.716	-	-	9.077	-	-	11.781	-	-	0.000	-	-	11.781
4.1.7) MK38 UPGRADE KIT INSTALL	-	-	4.500	-	-	2.000	-	-	4.400	-	-	3.400	-	-	0.000	-	-	3.400
4.1.8) MK38 UPGRADE LOGISTICS SUPT	-	-	10.828	-	-	1.918	-	-	1.462	-	-	1.454	-	-	0.000	-	-	1.454
4.1.9) MK38 BACKFIT KIT (4)	-	-	0.000	-	-	4.880	-	-	8.626	-	-	17.831	-	-	0.000	-	-	17.831
4.1.10) MK38 TECH REFRESH	-	-	0.000	-	-	0.000	-	-	2.112	-	-	2.154	-	-	0.000	-	-	2.154
4.1.11) MK46 GWS KITS	-	-	13.558	-	-	3.500	-	-	3.472	-	-	2.750	-	-	0.000	-	-	2.750
4.1.12) MK46 GWS KIT INSTALL	-	-	1.830	-	-	0.550	-	-	0.616	-	-	0.684	-	-	0.000	-	-	0.684

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4217 / Gun Mount Mods	Item Number / Title [DODIC]: 1 / Gun Mount Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
4.1.13) MK46 GUN SCHOOL HOUSE	-	-	8.893	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*113.778*	-	-	*28.677*	-	-	*32.008*	-	-	*42.436*	-	-	*0.000*	-	-	*42.436*
Subtotal: Hardware - E5006 MINOR CALIBER GUN MODS Cost	**-**	**-**	***113.778***	**-**	**-**	***28.677***	**-**	**-**	***32.008***	**-**	**-**	***42.436***	**-**	**-**	***0.000***	**-**	**-**	***42.436***
Hardware - E5007 FORCE PROTECTION WEAPONS (ATFP) Cost																		
Non Recurring Cost																		
5.1.1) FORCE PROTECTION WEAPONS (ATFP)	-	-	5.308	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*5.308*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - E5007 FORCE PROTECTION WEAPONS (ATFP) Cost	**-**	**-**	***5.308***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - E5008 STABILIZED MK38 MOD 2 GUNS - ESVS Cost																		
Non Recurring Cost																		
6.1.1) STABILIZED MK38 MOD 2 GUNS - ESVS	-	-	10.438	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*10.438*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - E5008 STABILIZED MK38 MOD 2 GUNS - ESVS Cost	**-**	**-**	***10.438***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - E5009 TRANSIT PROTECTION SYSTEMS Cost																		
Non Recurring Cost																		
7.1.1) PALLETIZED PROTECTION SYSTEMS	-	-	1.100	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
7.1.2) PRE-PRODUCTION COSTS	-	-	1.691	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*2.791*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - E5009 TRANSIT PROTECTION SYSTEMS Cost	**-**	**-**	***2.791***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - MK110 (57MM) NAVAL GUN Cost																		
Non Recurring Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4217 / Gun Mount Mods	Item Number / Title [DODIC]: 1 / Gun Mount Mods
ID Code (A=Service Ready, B=Not Service Ready) :	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 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
8.1.1) LAND BASED ENGINEERING SITE	-	-	7.800	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*7.800*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - MK110 (57MM) NAVAL GUN Cost	**-**	**-**	***7.800***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - E5011 MAJOR CALIBER GUN MODS Cost																		
Recurring Cost																		
9.1.1) MK45 MOD 1, 2 & 4 KITS	-	-	40.235	-	-	4.396	-	-	6.240	-	-	5.882	-	-	0.000	-	-	5.882
9.1.2) MK45 MOD 1 , 2 & 4 INSTALL / ILS / PROD SUPT	-	-	21.789	-	-	2.991	-	-	3.080	-	-	3.142	-	-	0.000	-	-	3.142
Subtotal: Recurring Cost	-	-	*62.024*	-	-	*7.387*	-	-	*9.320*	-	-	*9.024*	-	-	*0.000*	-	-	*9.024*
Subtotal: Hardware - E5011 MAJOR CALIBER GUN MODS Cost	**-**	**-**	***62.024***	**-**	**-**	***7.387***	**-**	**-**	***9.320***	**-**	**-**	***9.024***	**-**	**-**	***0.000***	**-**	**-**	***9.024***
Gross/Weapon System Cost	**-**	**-**	**313.569**	**-**	**-**	**47.420**	**-**	**-**	**43.698**	**-**	**-**	**55.168**	**-**	**-**	**0.000**	**-**	**-**	**55.168**

Footnotes:

(1) FY 2021 E5002 MEDIUM CALIBER GUN MODS 2.1.1 increase is due to increase in number of in-service guns to address obsolescence and reliability. The increase in FY21 accounts for 4 additional ships that have gone in-service since line establishment.

(2) FY 2021 E5006 MINOR CALIBER GUN MODS 4.1.3 increase in Gun Kits ILS/Test/Production due to concurrent installations on CVN, LHD, and LHA class ships, which increased production, installation and test costs.

(3) FY 2021 E5006 MINOR CALIBER GUN MODS 4.1.6 increase is due to ramp up of procurements and installs for upgrade kits for the MK 38 Mod 2 and Mod 3 gun systems. The increase in FY21 accounts for addition of 3 more DDG 51 class ships.

(4) FY 2021 E5006 MINOR CALIBER GUN MODS 4.1.9 increase in MK 38 backfit kit due to ramp-up in MK 38 MOD 3 ORDALTs to upgrade high population of deployed MK 38 MOD 2 systems (>250 units) to enable Counter-Unmanned Aerial Systems (C-UAS) capability per Joint Urgent Operational Need Statement (CC-0558). The increase accounts for 7 more DDG 51 class ships.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4217 / Gun Mount Mods	**Modification Number / Title:** 1 / E5006 MINOR CALIBER GUN MODS MK38 GUN KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	474.497	27.213	18.881	19.259	0.000	19.259	13.740	14.842	15.252	17.370	8.381	609.435
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	474.497	27.213	18.881	19.259	0.000	19.259	13.740	14.842	15.252	17.370	8.381	609.435
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**474.497**	**27.213**	**18.881**	**19.259**	**0.000**	**19.259**	**13.740**	**14.842**	**15.252**	**17.370**	**8.381**	**609.435**
(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 Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Minor Caliber Gun Mounts (MK38 MOD or MK46 MOD) are installed on AS, CVN, CG, DDG, LCS, LSD, LHA, LHD, PC, USCG FRC, USCG OPC, USCG WMEC, LCC, MK VI Patrol Boats and land based training/test units. The gun mounts provide an anti-surface warfare and anti-air warfare capability for outfitted ships. Funds procure ORDALTs kits, and provide ILS and production engineering for system improvements that affect safety, reliability and maintainability.

[MINOR CAL. GUN MK38 GUN KITS (Surface Warfare) Standard]

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4217 / Gun Mount Mods	**Modification Number / Title:** 1 / E5006 MINOR CALIBER GUN MODS MK38 GUN KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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												
Modification Item 1 of 1: E5006 MINOR CALIBER GUN MODS MK38 GUN KITS												
B Kits												
Recurring												
1.1.1) MINOR CAL. GUN MK38 GUN KITS (Surface Warfare) Standard - NonOrganic	271 / 232.626	- / -	- / -	6 / 9.192	- / -	6 / 9.192	2 / 3.126	- / -	- / -	- / -	- / -	279 / 244.944
1.1.2) MINOR CAL. GUN MK38 GUN KITS (Surface Warfare) Large Deck - NonOrganic (5)	44 / 56.877	6 / 8.832	6 / 9.012	- / -	- / -	- / -	4 / 6.252	4 / 6.376	5 / 8.130	5 / 8.290	- / -	74 / 103.769
1.1.3) MINOR CAL. GUN MODS MK38 GUN KITS (Expeditionary Warfare) - NonOrganic	10 / 11.966	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 11.966
Subtotal: Recurring	*- / 301.469*	*- / 8.832*	*- / 9.012*	*- / 9.192*	*- / -*	*- / 9.192*	*- / 9.378*	*- / 6.376*	*- / 8.130*	*- / 8.290*	*- / 0.000*	*- / 360.679*
Subtotal: E5006 MINOR CALIBER GUN MODS MK38 GUN KITS	*325 / 301.469*	*6 / 8.832*	*6 / 9.012*	*6 / 9.192*	*- / -*	*6 / 9.192*	*6 / 9.378*	*4 / 6.376*	*5 / 8.130*	*5 / 8.290*	*- / -*	*363 / 360.679*
Subtotal: Procurement, All Modification Items	*- / 301.469*	*- / 8.832*	*- / 9.012*	*- / 9.192*	*- / -*	*- / 9.192*	*- / 9.378*	*- / 6.376*	*- / 8.130*	*- / 8.290*	*- / 0.000*	*- / 360.679*
Installation												
Modification Item 1 of 1: E5006 MINOR CALIBER GUN MODS MK38 GUN KITS	- / 173.028	- / 18.381	- / 9.869	- / 10.067	- / 0.000	- / 10.067	- / 4.362	- / 8.466	- / 7.122	- / 9.080	- / 8.381	- / 248.756
Subtotal: Installation	*- / 173.028*	*- / 18.381*	*- / 9.869*	*- / 10.067*	*- / -*	*- / 10.067*	*- / 4.362*	*- / 8.466*	*- / 7.122*	*- / 9.080*	*- / 8.381*	*- / 248.756*
Total												
Total Cost (Procurement + Support + Installation)	**474.497**	**27.213**	**18.881**	**19.259**	**0.000**	**19.259**	**13.740**	**14.842**	**15.252**	**17.370**	**8.381**	**609.435**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4217 / Gun Mount Mods	**Modification Number / Title:** 1 / E5006 MINOR CALIBER GUN MODS MK38 GUN KITS

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

Modification Item 1 of 1: E5006 MINOR CALIBER GUN MODS MK38 GUN KITS

Manufacturer Information

Manufacturer Name: BAE SYSTEMS | Manufacturer Location: Minneapolis, MN

Administrative Leadtime *(in Months)*: 6 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	May 2019	May 2020	May 2021	Mar 2022	May 2023	Mar 2024	
Delivery Dates	May 2020	May 2021	May 2022	Mar 2023	May 2024	Mar 2025	

Installation Information

Method of Implementation: [none specified]:: Installation Name: MINOR CAL. GUN MK38 GUN KITS (Surface Warfare) Standard

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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	270 / 131.955	8 / 5.480	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	278 / 137.435
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	6 / 4.362	- / -	- / -	- / -	0 / 0.000	6 / 4.362
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.484	- / -	- / -	0 / 0.000	2 / 1.484
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	270 / 131.955	8 / 5.480	- / -	- / -	- / -	- / -	6 / 4.362	2 / 1.484	- / -	- / -	0 / 0.000	286 / 143.281

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	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	TC	Tot
In	270	-	3	3	2	-	-	-	-	-	-	-	-	-	2	3	1	-	2	-	-	-	-	-	-	-	-	-	-	-	286
Out	261	9	-	3	3	2	-	-	-	-	-	-	-	-	-	2	3	1	-	-	2	-	-	-	-	-	-	-	-	-	286

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4217 / Gun Mount Mods	**Modification Number / Title:** 1 / E5006 MINOR CALIBER GUN MODS MK38 GUN KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: E5006 MINOR CALIBER GUN MODS MK38 GUN KITS

Installation Information

Method of Implementation: [none specified]:: Installation Name: MINOR CAL. GUN MK38 GUN KITS (Surface Warfare) Large Deck

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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	29 / 36.291	8 / 12.901	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	37 / 49.192
FY 2019	- / -	- / -	6 / 9.869	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 9.869
FY 2020	- / -	- / -	- / -	6 / 10.067	0 / 0.000	6 / 10.067	- / -	- / -	- / -	- / -	0 / 0.000	6 / 10.067
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 6.982	- / -	- / -	0 / 0.000	4 / 6.982
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 7.122	- / -	0 / 0.000	4 / 7.122
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 8.381	5 / 8.381
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 9.080	0 / 0.000	5 / 9.080
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	29 / 36.291	8 / 12.901	6 / 9.869	6 / 10.067	0 / 0.000	6 / 10.067	- / -	4 / 6.982	4 / 7.122	5 / 9.080	5 / 8.381	67 / 100.693

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	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	TC	Tot
In	29	-	-	3	5	-	-	2	4	-	3	3	-	-	-	-	-	-	-	4	-	-	-	4	-	-	2	3	-	5	67
Out	29	-	-	-	3	5	-	-	2	4	-	3	3	-	-	-	-	-	-	-	4	-	-	-	4	-	-	2	3	5	67

Method of Implementation: [none specified]:: Installation Name: MINOR CAL. GUN MODS MK38 GUN KITS (Expeditionary Warfare)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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	10 / 4.782	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 4.782
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4217 / Gun Mount Mods	**Modification Number / Title:** 1 / E5006 MINOR CALIBER GUN MODS MK38 GUN KITS

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

Modification Item 1 of 1: E5006 MINOR CALIBER GUN MODS MK38 GUN KITS

Installation Information

Method of Implementation: [none specified]:: Installation Name: MINOR CAL. GUN MODS MK38 GUN KITS (Expeditionary Warfare)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	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)*
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	10 / 4.782	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 4.782

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	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	TC	Tot
In	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Out	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10

Footnotes:

(5) MK38 Machine Gun System kits will continue procurement of MK38 MOD 3 configuration with multiple capability upgrades: 7.62mm coaxially mounted machine gun, improved Electro-Optical Infrared Sensor (EOIR) for target identification, improved main computer unit, and aerial target detection/tracking/engagement capability. These capabilities will improve ship-based solutions for close range Fast Attack Craft/ Fast In-shore Attack Craft (FAC/FIAC) Counter-Swarm and Counter Unmanned Aerial Systems (C-UAS). Installations for large deck include CVN installations. CVN installation costs are much higher than the amphibious ships previously executed (longer cable runs, larger sponsons, and floating crane requirements).

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4221 / LCS Module Weapons

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	112	90	90	32	-	32	30	30	30	30	-	444
Gross/Weapon System Cost *($ in Millions)*	13.386	11.350	10.998	4.253	0.000	4.253	3.961	4.039	4.120	4.268	54.190	110.565
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	13.386	11.350	10.998	4.253	0.000	4.253	3.961	4.039	4.120	4.268	54.190	110.565
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**13.386**	**11.350**	**10.998**	**4.253**	**0.000**	**4.253**	**3.961**	**4.039**	**4.120**	**4.268**	**54.190**	**110.565**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	119,517.86	126,111.11	122,200.00	132,906.25	-	132,906.25	132,033.33	134,633.33	137,333.33	142,266.67	-	249,020.27

Description:

The Surface Warfare (SUW) Mission Package (MP) increases firepower and offensive/defensive capabilities against large numbers of highly maneuverable, fast, small craft threats, giving Littoral Combat Ship (LCS) the ability to protect the sea lanes and move a force quickly through a choke point or other strategic waterway. With the SUW MP embarked, LCS has enhanced detection and engagement capability against enemy small craft and similar littoral surface threats.

Other Related Budgets: BLIs: OPN 1603 LCS SUW Mission Modules, RDT&E 0603596N LCS Mission Modules

[P5 / Longbow Hellfire Missile]: The Longbow Hellfire missile is a fire and forget, millimeter-wave seeker missile for autonomous engagement. It has a 12.39 lb warhead, a single stage motor and a 6-8 km range when vertically launched. The Navy procures replacement in kind missiles from the Army inventory, completes shipboard modifications and certifications to deliver to the Fleet.

[P5 / Consulting Services]: Provides program management support, engineering and technical support, studies, analysis and evaluation on mission module systems.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4221 / LCS Module Weapons	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / LCS Module Weapons	P-5a, P-21			112 / 13.386	90 / 11.350	90 / 10.998	32 / 4.253	- / 0.000	32 / 4.253
P-40	**Total Gross/Weapon System Cost**				**112 / 13.386**	**90 / 11.350**	**90 / 10.998**	**32 / 4.253**	**- / 0.000**	**32 / 4.253**

*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 2021 procurements of Longbow Hellfire missiles supports LCS SUW Division Ships deploying in FY 2023. The Navy's inventory objective is 845 missiles.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4221 / LCS Module Weapons	**Item Number / Title [DODIC]:** 1 / LCS Module Weapons
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	112	90	90	32	-	32
Gross/Weapon System Cost *($ in Millions)*	13.386	11.350	10.998	4.253	0.000	4.253
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	13.386	11.350	10.998	4.253	0.000	4.253
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**13.386**	**11.350**	**10.998**	**4.253**	**0.000**	**4.253**
(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 Dollars)*	119,517.86	126,111.11	122,200.00	132,906.25	-	132,906.25

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) Longbow Hellfire Missile(†)	114,866.07	112	12.865	117,490.91	90	10.574	119,583.00	90	10.762	122,281.25	32	3.913	-	-	-	122,281.25	32	3.913
Subtotal: Recurring Cost	-	-	*12.865*	-	-	*10.574*	-	-	*10.762*	-	-	*3.913*	-	-	-	-	-	*3.913*
Subtotal: Hardware Cost	**-**	**-**	***12.865***	**-**	**-**	***10.574***	**-**	**-**	***10.762***	**-**	**-**	***3.913***	**-**	**-**	**-**	**-**	**-**	***3.913***
Support Cost																		
2.1) Consulting Services	-	-	0.521	-	-	0.776	-	-	0.236	-	-	0.340	-	-	-	-	-	0.340
Subtotal: Support Cost	**-**	**-**	***0.521***	**-**	**-**	***0.776***	**-**	**-**	***0.236***	**-**	**-**	***0.340***	**-**	**-**	**-**	**-**	**-**	***0.340***
Gross/Weapon System Cost	**119,517.86**	**112**	**13.386**	**126,111.11**	**90**	**11.350**	**122,200.00**	**90**	**10.998**	**132,906.25**	**32**	**4.253**	**-**	**-**	**0.000**	**132,906.25**	**32**	**4.253**

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4221 / LCS Module Weapons	Item Number / Title [DODIC]: 1 / LCS Module Weapons

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Longbow Hellfire Missile(†)		2019	US Army / Huntsville, AL	MIPR	JAMS PO Huntsville	May 2019	Apr 2020	90	117,490.91	Y		
1.1.1) Longbow Hellfire Missile(†)	✓	2020	US Army / Huntsville, AL	MIPR	JAMS PO Huntsville	Mar 2020	Feb 2021	90	119,583.00	Y		
1.1.1) Longbow Hellfire Missile(†)		2021	US Army / Huntsville, AL	MIPR	JAMS PO Huntsville	Dec 2020	Nov 2021	32	122,281.25	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4221 / LCS Module Weapons	**Item Number / Title [DODIC]:** 1 / LCS Module Weapons

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
										Calendar Year 2019												Calendar Year 2020									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Longbow Hellfire Missile																															
Prior Years Deliveries: 112																															
	1	2019	NAVY	90	0	90								A -	-	-	-	-	-	-	-	-	-	-	16	16	16	12	10	10	10
✓	1	2020	NAVY	90	0	90																		A -	-	-	-	-	-	-	90
	1	2021	NAVY	32	0	32																									32
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4221 / LCS Module Weapons	**Item Number / Title [DODIC]:** 1 / LCS Module Weapons

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) Longbow Hellfire Missile																															
Prior Years Deliveries: 112																															
	1	2019	NAVY	90	80	10	10																								0
✓	1	2020	NAVY	90	0	90	-	-	-	-	16	16	16	16	16	10															0
	1	2021	NAVY	32	0	32			A -	-	-	-	-	-	-	-	-	-	-	16	16										0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4221 / LCS Module Weapons	**Item Number / Title [DODIC]:** 1 / LCS Module Weapons

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	US Army - Huntsville, AL	10	110	168	0	0	11	11	0	0	11	11

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

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4225 / Airborne Mine Neutralization Systems

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	151.186	18.024	7.160	6.662	0.000	6.662	15.016	11.982	12.174	10.122	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	151.186	18.024	7.160	6.662	0.000	6.662	15.016	11.982	12.174	10.122	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**151.186**	**18.024**	**7.160**	**6.662**	**0.000**	**6.662**	**15.016**	**11.982**	**12.174**	**10.122**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.041	0.225	0.177	-	0.177	0.270	0.251	0.143	0.100	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2021 funding request was reduced by $6.755M to account for the availability of prior year balances.

Airborne Mine Countermeasures (AMCM) Equipment is currently used by MH-53E helicopters to counter the threat of sea mines. The MH-60S helicopter will be adapted for the AMCM mission in support of the development of an Organic Fleet AMCM program. The equipment is divided into three categories -- minesweeping, minehunting, and mine neutralization. (1) Minesweeping is performed by mechanical or influence sweeps. In mechanical sweeping, the mine mooring is severed by the sweep gear allowing the mine to float to the surface where it is destroyed. In influence sweeping, a magnetic or acoustic field, which simulates the magnetic/acoustic signature of a ship, is introduced into the water. This field causes the mine mechanism to actuate. (2) In mine hunting, the objective is to locate, identify, and classify mine like objects (usually by means of high resolution sonar). (3) Finally, in mine neutralization, previously identified/classified mine like objects are reacquired and neutralized using explosive devices.

[P5 / ARCHERFISH Destructor]: AN/ASQ-235 - Airborne Mine Neutralization System (AMNS) will provide the MH-60S helicopter with the capability to neutralize proud and moored mines using an expendable mine neutralization device. The system will be deployed from the MH-60S helicopter as part of the Littoral Combat Ship (LCS) Mine Countermeasure (MCM) Mission Package or Vessels of Opportunity (VOO). This capability will be of critical importance in littoral zones, confined straits, choke points, and the Amphibious Objective Area (AOA). AMNS procurements are funded with OPN for the AMNS combat system and WPN for the AMNS Archerfish destructor.

[P5 - 2 / SEAFOX Neutralizer]: SEAFOX neutralizers are used from the AN/ASQ-232, Airborne Mine Neutralization System - SEAFOX (AMNS-SF), the AN/SLQ-60, Surface Mine Neutralization System - SEAFOX (SMNS-SF). Airborne combat systems are deployed from the MH-53E SEA DRAGON helicopters. Surface combat systems are deployed from the MCM-1 Avenger Class ships.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 04: Other Weapons / BSA 2: Modification of Guns And Gun Mounts	**P-1 Line Item Number / Title:** 4225 / Airborne Mine Neutralization Systems

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	1 / ARCHERFISH Mine Neutralization Combat Rounds	P-5a, P-21			- / 103.909	- / 9.191	- / 6.471	- / 5.396	- / 0.000	- / 5.396
P-5	2 / SEAFOX Mine Neutralization Combat Rounds	P-5a			- / 47.277	- / 8.833	- / 0.689	- / 1.266	- / 0.000	- / 1.266
P-40	**Total Gross/Weapon System Cost**				**- / 151.186**	**- / 18.024**	**- / 7.160**	**- / 6.662**	**- / 0.000**	**- / 6.662**

*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 2021 funding supports the procurement of 27 Archerfish neutralizers to support the deployment inventory objective requirements. FY 2021 funding also supports the procurement of 40 SEAFOX batteries, supporting the SEAFOX mine neutralization (SeaFox MH-53E) baseline program for the current in service mission (SEAFOX - MH-53E helicopters and MCM Class Ships and Archerfish - MH-60S). This capability is currently deployed around the world to meet the current operational mine warfare mission demand for these systems and to maintain the total munitions requirement inventory.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4225 / Airborne Mine Neutralization Systems	**Item Number / Title [DODIC]:** 1 / ARCHERFISH Mine Neutralization Combat Rounds
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	103.909	9.191	6.471	5.396	0.000	5.396
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	103.909	9.191	6.471	5.396	0.000	5.396
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**103.909**	**9.191**	**6.471**	**5.396**	**0.000**	**5.396**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - ARCHERFISH Destructor Cost																		
Recurring Cost																		
1.1.1) AN/ASQ-235 - AMNS - MH-60S neutralizer(†) (1)	138,160.07	581	80.271	147,089.29	56	8.237	148,736.84	38	5.652	161,148.15	27	4.351	-	-	0.000	161,148.15	27	4.351
Subtotal: Recurring Cost	-	-	*80.271*	-	-	*8.237*	-	-	*5.652*	-	-	*4.351*	-	-	*0.000*	-	-	*4.351*
Subtotal: Hardware - ARCHERFISH Destructor Cost	**-**	**-**	***80.271***	**-**	**-**	***8.237***	**-**	**-**	***5.652***	**-**	**-**	***4.351***	**-**	**-**	***0.000***	**-**	**-**	***4.351***
Support Cost																		
2.1) Production Engineering	-	-	11.744	-	-	0.289	-	-	0.319	-	-	0.271	-	-	0.000	-	-	0.271
2.2) ILS/PUBS/Tech Data	-	-	8.513	-	-	0.429	-	-	0.212	-	-	0.186	-	-	0.000	-	-	0.186
2.3) Support Equipment	-	-	3.381	-	-	0.236	-	-	0.288	-	-	0.588	-	-	0.000	-	-	0.588
Subtotal: Support Cost	**-**	**-**	***23.638***	**-**	**-**	***0.954***	**-**	**-**	***0.819***	**-**	**-**	***1.045***	**-**	**-**	***0.000***	**-**	**-**	***1.045***
Gross/Weapon System Cost	**-**	**-**	**103.909**	**-**	**-**	**9.191**	**-**	**-**	**6.471**	**-**	**-**	**5.396**	**-**	**-**	**0.000**	**-**	**-**	**5.396**

Remarks:
[Hardware] FY 2021 funding supports the procurement of 27 Archerfish neutralizers to support the deployment inventory objective requirements.

(†) indicates the presence of a P-5a

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4225 / Airborne Mine Neutralization Systems	**Item Number / Title [DODIC]:** 1 / ARCHERFISH Mine Neutralization Combat Rounds
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Footnotes:

(1) The AMNS WPN unit cost increase from FY20 to FY21 correlates to the quantity decrease. Unit costs in FY21 are based on stepladder pricing for destructor procurement as well as the quantity approaching Minimum Sustaining Rate (MSR). BAE Contract delay from June 2019 to March 2020 due to incorporation of required cybersecurity contract clause language and Engineering Change Proposal (ECP) negotiation, which has now been resolved.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4225 / Airborne Mine Neutralization Systems	Item Number / Title [DODIC]: 1 / ARCHERFISH Mine Neutralization Combat Rounds

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) AN/ASQ-235 - AMNS - MH-60S neutralizer(†)		2018	BAE / Portsmith, UK	SS / FFP	NAVSEA	Jun 2018	Jun 2019	82	141,682.53	Y		May 2018
1.1.1) AN/ASQ-235 - AMNS - MH-60S neutralizer(†)		2019	BAE / Portsmith, UK	SS / FP	NAVSEA	Mar 2020	Mar 2021	56	147,089.29	Y		Aug 2019
1.1.1) AN/ASQ-235 - AMNS - MH-60S neutralizer(†)		2020	BAE / Portsmith, UK	SS / FP	NAVSEA	Mar 2020	Mar 2021	38	148,736.84	Y		Aug 2019
1.1.1) AN/ASQ-235 - AMNS - MH-60S neutralizer(†)		2021	BAE / Portsmith, UK	SS / FP	NAVSEA	Jun 2021	Jun 2022	27	161,148.15	Y		Jun 2020

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4225 / Airborne Mine Neutralization Systems	**Item Number / Title [DODIC]:** 1 / ARCHERFISH Mine Neutralization Combat Rounds

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) AN/ASQ-235 - AMNS - MH-60S neutralizer [1]																															
Prior Years Deliveries: 499																															
	1	2018	NAVY	82	0	82									A -	-	-	-	-	-	-	-	-	-	-	10	10	10	10		42
	1	2019	NAVY	56	0	56																									56
	1	2020	NAVY	38	0	38																									38
	1	2021	NAVY	27	0	27																									27
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4225 / Airborne Mine Neutralization Systems	**Item Number / Title [DODIC]:** 1 / ARCHERFISH Mine Neutralization Combat Rounds

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) AN/ASQ-235 - AMNS - MH-60S neutralizer [1]																															
Prior Years Deliveries: 499																															
	1	2018	NAVY	82	40	42	10	10	10	10	2																				0
	1	2019	NAVY	56	0	56						A -	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	6		0
	1	2020	NAVY	38	0	38						A -	-	-	-	-	-	-	-	-	-	-	-	10	10	10	8				0
	1	2021	NAVY	27	0	27																					A -	-	-	-	27
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4225 / Airborne Mine Neutralization Systems	**Item Number / Title [DODIC]:** 1 / ARCHERFISH Mine Neutralization Combat Rounds

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
										Calendar Year 2022												Calendar Year 2023									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) AN/ASQ-235 - AMNS - MH-60S neutralizer [1]																															
Prior Years Deliveries: 499																															
	1	2018	NAVY	82	82	0																									0
	1	2019	NAVY	56	56	0																									0
	1	2020	NAVY	38	38	0																									0
	1	2021	NAVY	27	0	27	-	-	-	-	-	-	-	-	10	10	7														0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4225 / Airborne Mine Neutralization Systems	**Item Number / Title [DODIC]:** 1 / ARCHERFISH Mine Neutralization Combat Rounds

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	BAE - Portsmith, UK	25	480	1,440	0	9	12	21	0	9	12	21

"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).

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4225 / Airborne Mine Neutralization Systems	**Item Number / Title [DODIC]:** 2 / SEAFOX Mine Neutralization Combat Rounds
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	47.277	8.833	0.689	1.266	0.000	1.266
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	47.277	8.833	0.689	1.266	0.000	1.266
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**47.277**	**8.833**	**0.689**	**1.266**	**0.000**	**1.266**
(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 Dollars)*	-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - SEAFOX Neutralizer Cost																		
Recurring Cost																		
1.1.1) SEAFOX Neutralizer(†)	85,794.93	434	37.235	98,310.00	77	7.570	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) SEAFOX Refurbishment Upgrade Rounds	25,000.00	72	1.800	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.3) Battery Replacement(†) (2)	8,000.00	50	0.400	8,500.00	70	0.595	8,700.00	33	0.287	9,300.00	40	0.372	-	-	0.000	9,300.00	40	0.372
Subtotal: Recurring Cost	-	-	*39.435*	-	-	*8.165*	-	-	*0.287*	-	-	*0.372*	-	-	*0.000*	-	-	*0.372*
Subtotal: Hardware - SEAFOX Neutralizer Cost	**-**	**-**	***39.435***	**-**	**-**	***8.165***	**-**	**-**	***0.287***	**-**	**-**	***0.372***	**-**	**-**	***0.000***	**-**	**-**	***0.372***
Support Cost																		
2.1) Production Engineering	-	-	3.614	-	-	0.165	-	-	0.100	-	-	0.221	-	-	0.000	-	-	0.221
2.2) ILS/PUBS/Tech Data	-	-	2.540	-	-	0.218	-	-	0.190	-	-	0.293	-	-	0.000	-	-	0.293
2.3) Support Equipment	-	-	1.688	-	-	0.285	-	-	0.112	-	-	0.380	-	-	0.000	-	-	0.380
Subtotal: Support Cost	**-**	**-**	***7.842***	**-**	**-**	***0.668***	**-**	**-**	***0.402***	**-**	**-**	***0.894***	**-**	**-**	***0.000***	**-**	**-**	***0.894***
Gross/Weapon System Cost	**-**	**-**	**47.277**	**-**	**-**	**8.833**	**-**	**-**	**0.689**	**-**	**-**	**1.266**	**-**	**-**	**0.000**	**-**	**-**	**1.266**

(†) indicates the presence of a P-5a

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	**P-1 Line Item Number / Title:** 4225 / Airborne Mine Neutralization Systems	**Item Number / Title [DODIC]:** 2 / SEAFOX Mine Neutralization Combat Rounds
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Footnotes:

(2) This funding supports the procurement of batteries through end of service life in FY25. Increased unit cost for SEAFOX batteries in FY21 and out represent negotiated contract values. These unit costs reflect a corresponding decrease in projected customer base, which resulted in increased production capacity and increased production costs to the US Navy.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 04 / 2	P-1 Line Item Number / Title: 4225 / Airborne Mine Neutralization Systems	Item Number / Title [DODIC]: 2 / SEAFOX Mine Neutralization Combat Rounds

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) SEAFOX Neutralizer		2018	Atlas North America / Yorktown, VA	SS / FFP	NAVSEA	Mar 2018	Sep 2019	35	97,657.00	Y		
1.1.1) SEAFOX Neutralizer		2019	Atlas North America / Yorktown, VA	SS / FFP	NAVSEA	Mar 2020	Sep 2021	77	98,310.00	Y		
1.1.3) Battery Replacement		2019	NSWC Indian Head / Indian Head MD	WR	NAVSEA	Dec 2018	Jun 2019	70	8,500.00	Y		
1.1.3) Battery Replacement		2020	NSWC Indian Head / Indian Head MD	WR	NAVSEA	Mar 2020	Sep 2020	33	8,700.00	N		

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 06: Spares and Repair Parts / BSA 1: Spares And Repair Parts	**P-1 Line Item Number / Title:** 6120 / Spares and Repair Parts

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

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	127.088	125.338	159.578	0.000	159.578	151.085	147.923	146.251	148.807	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	127.088	125.338	159.578	0.000	159.578	151.085	147.923	146.251	148.807	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**127.088**	**125.338**	**159.578**	**0.000**	**159.578**	**151.085**	**147.923**	**146.251**	**148.807**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY 2021 funding totals include $159.487 million for Base and $0M for Overseas Contingency Operations (OCO).

The Weapons Procurement, Navy (WPN-6) budget line item is made up of three sub budget line items (SUBLI); SUBLI (20) Initial Spares, SUBLI (30) Outfitting Spares, and SUBLI (90) Vender Direct spares. Together they provide all Weapons Procurement, Navy (WPN-6) Spares funding in support of Navy surface ordnance, which consists of all guns, associated equipment (hoists, shields, etc.), and related material support necessary to support fleet readiness capabilities. Funding also provides for Initial and Vendor Direct spares, during the maintenance cycle, to support Anti-Submarine Warfare weapons and support equipment. Initial spares are components, assemblies, and sub-assemblies that are provided and stocked on active ships, shore sites, and expeditionary units as spare parts for newly fielded weapon systems. Outfitting spares are Spare parts that the Navy Supply System has bought-in to respond to meet fleet requisitions for newly installed/modernized systems. Spares funding is required for the initial outfitting and repair of missiles or components that fail or are damaged while in the Fleet, and for expendable items, such as guided missiles and non-recoverable target drones. For recoverable target drones, additional spares and repair parts are required to repair damage incurred while in flight, damage incurred during recovery operations, and for control and telemetry equipment.

This budget line item also provides for Initial and Vendor Direct spares, during the in-service maintenance cycle, to support organic and commercial depot repair/refurbishment activities for NAVAIR managed air-launched weapons and associated equipment. Air launched weapons consist of anti-ship, anti-radar, anti-armor, air-to-air, and air-to-surface weapons including Advanced Anti-Radiation Guided Missile (AARGM, AARGM-ER), High Speed Anti-Radiation Missile (HARM), Harpoon (air/surface/sub-surface), Hellfire, Joint Standoff Weapons (JSOW), Air-to-Surface Guided Missiles (AGM-65), Long Range Anti-Ship Missile (LRASM), Airborne Intercept Missile (AIM-7, AIM-9, AIM-120), Standard Land Attack Missiles (SLAM-ER), Small Diameter Bomb Increment (SDB II), Joint Air-to-Ground Missiles (JAGM), Miniature Air Launched Decoy (MALD) and other air-launched guided weapons that fall under special access program control.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 06: Spares and Repair Parts / BSA 1: Spares And Repair Parts	**P-1 Line Item Number / Title:** 6120 / Spares and Repair Parts

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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	WPN spares				- / -	- / 127.088	- / 125.338	- / 159.578	- / -	- / 159.578
P-40	**Total Gross/Weapon System Cost**				**- / 0.000**	**- / 127.088**	**- / 125.338**	**- / 159.578**	**- / 0.000**	**- / 159.578**

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:
Initial Spares

FY 2021 Program Increase Justifications:

2206 / Advanced Medium Range Air-to-Air Missile (AMRAAM) - Increase of $0.157 million is to procure additional spares associated with the FY21 production buy increase of 157 missiles (331 total). Additionally, the program is procuring six AIM-120D-3 (F3R) guidance sections, three AIM-120D guidance sections, and three control sections. Additional spares are needed to maintain optimal operational availability of increased missile inventory.

3215 / MK-54 Torpedo Mods - Increase of $.707 million required to procure additional spares to support increased inventory due to FY 21 production increase of 33 additional MK 54 MOD 1 kits.

4129 / Small Arms and Weapons - Increase of $.037 million due to increased inventory supporting the MK50 series (MOD0 and MOD1) Stabilized Small Arms Mounts (SSAM) and CROWSII (Common Remote Operated Weapons Station) for expeditionary Forces.

4217 / Gun Mount Mods- Increase of $2.335 million due to the FFG(X)'s incorporation into the MK110 installation portfolio. Spares are procured for installation of MK110 aboard FFG(X)s 1, 2 and 3 along with Navy type and Navy owned OPCs 6 and 7. Starting in FY21, cost type 4217W / Gun Mount Mods has a five digit cost type compared to the normal four digits to de-conflict with 4217O / Advanced Arresting Gear in Other Procurement, Navy.

Replenishment Spares

FY 2021 Program Increase Justifications:

2234 / Standard Missile - Increase of $27.538 million increase is due to rightsizing SM-6 BLKI in accordance with requirements after zeroing of spares funds in FY17 and a $6.2 million decrease from FY19 to FY20. Consistent spares funding is necessary to support quantities for the SM-6 multiyear procurement contract that begins in FY19. In addition, funds are increased to support spares the increased quantity caused by production start of SM-6 BLK IB variant that begins in FY21.

2242 / Rolling Airframe Missile (RAM) - Increase of $8.305 million due to sparing increase for RAM.

2280 / Aerial Targets - Increase is associated with the Enhanced Target Capability of the GQM-163A Aerial Target to keep pace with emerging threats. Specifically, there are several efforts underway to increase capabilities of the GQM-163A target, to include JTIM Upscope (Quad Launch), the Pulse Doppler Payload, and the incorporation of countermeasures. Additional funding supports increased procurement buy of both the GQM-163A and BQM-177A Aerial Targets. A combined total of 59 GQM-163A and BQM-177A Aerial Targets, which reflects an overall increase of 17 targets from FY20, will be procured in FY21. There is an increased demand for both of these aerial targets to meet fleet operational requirements. With the optempo expected to further increase throughout the FYDP, sufficient spares availability is required

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N: Weapons Procurement, Navy / BA 06: Spares and Repair Parts / BSA 1: Spares And Repair Parts	**P-1 Line Item Number / Title:** 6120 / Spares and Repair Parts	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

to maintain operational availability of these targets used in both anti-ship cruise missile system testing and fleet training exercise. Current projections call for 102 GQM-163A and 500 BQM-177A aerial target presentation requirements through the FYDP.

2326 / Harpoon Mods - Increase supports the Navy's Encapsulated Harpoon BLKII missile systems for the 688 class submarine fleet which provides over the horizon surface strike capabilities. Spares are in support of the refurbishment and sustainment of up to 78 Encapsulated Harpoons.Increase

3215 / MK-54 Torpedo Mods - Increase of $.285 million due to increased spares requirements to support aging S&TE required to issue warshot torpedoes.

6231/ 6T COG - Increase of $0.433 million is due to the addition of AN/ASQ-235 MK65 Archerfish mine trainers to fleet inventory. This additional funding would purchase fiber canisters for the Archerfish trainer. This system aids in training sailors on how to drive the neutralizer to the mine and will assist in ensuring that operational readiness will be met. This system induction to the Fleet took place in FY20.

4129/ Small Arms and Weapons - Increase of $0.336 million is due to increased inventory supporting the MK50 series (MOD0 and MOD1) Stabilized Small Arms Mounts (SSAM) and CROWSII (Common Remote Operated Weapons Station) for expeditionary Forces.

4206 / Coast Guard Weapons - Increase of $0.175 million is due to number of in-service MK110 and MK38 Gun Weapon Systems installed aboard Coast Guard platforms.

4225/ Spares for Airborne Mine Neutralization Systems - Increase of $0.444 million is due to additional AN/AQS/232A MK62 SeaFox neutralizers and batteries for system maintenance due to system aging. Additional funds would ensure that 5th Fleet operational readiness will be met and maintained at the levels required to meet applicable operational demands.

Exhibit P-18, Initial and Replenishment Spare and Repair Parts Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 06 / 1	P-1 Line Item Number / Title: 6120 / Spares and Repair Parts	Title: WPN spares

End Item Line Item Number / Name [MDAP/MAIS]	Prior Years ($ M)	FY 2019 ($ M)	FY 2020 ($ M)	FY 2021 Base ($ M)	FY 2021 OCO ($ M)	FY 2021 Total ($ M)
Initial						
BA 02 - Other Missiles						
2206 / AMRAAM	-	-	8.910	9.067	-	9.067
2209 / Sidewinder	-	2.223	3.280	1.785	-	1.785
2280 / Aerial Targets	-	1.551	2.518	2.407	-	2.407
2290 / Other Missile Support	-	0.407	0.475	0.000	-	0.000
2327 / HARM Mods	-	-	3.665	3.640	-	3.640
BA 03 - Torpedoes and Related Equipment						
3215 / MK-54 Torpedo Mods	-	6.535	0.697	1.404	-	1.404
3225 / MK-48 Torpedo ADCAP Mods	-	1.904	1.376	1.398	-	1.398
BA 04 - Other Weapons						
4129 / Small Arms and Weapons	-	-	-	0.037	-	0.037
4206 / Coast Guard Weapons	-	0.388	0.722	0.634	-	0.634
4217 / Gun Mount Mods	-	1.013	1.102	3.437	-	3.437
4225 / Airborne Mine Neutralization Systems	-	0.041	0.225	0.177	-	0.177
Subtotal: Initial	***-***	***14.062***	***22.970***	***23.986***	***-***	***23.986***
Replenishment						
BA 02 - Other Missiles						
2101 / Tomahawk	-	16.496	22.986	19.572	-	19.572
2234 / Standard Missile	-	20.651	13.182	40.720	-	40.720
2242 / Rolling Airframe Missile (RAM)	-	2.547	4.474	12.779	-	12.779
2280 / Aerial Targets	-	-	-	9.987	-	9.987
2307 / Evolved Sea Sparrow Missile (ESSM)	-	13.866	8.390	8.143	-	8.143
2326 / Harpoon Mods	-	-	-	2.659	-	2.659
9203 / Spares for NAVAIR	-	16.062	18.228	16.641	-	16.641
BA 03 - Torpedoes and Related Equipment						
3141 / ASW Targets	-	2.552	2.026	1.668	-	1.668
3215 / MK-54 Torpedo Mods	-	0.929	1.418	1.703	-	1.703
3225 / MK-48 Torpedo ADCAP Mods	-	1.413	0.473	0.472	-	0.472
3302 / ASW Range Support	-	0.952	0.640	0.553	-	0.553
6231 / 6T COG	-	7.433	6.410	6.843	-	6.843
BA 04 - Other Weapons						

Exhibit P-18, Initial and Replenishment Spare and Repair Parts Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1507N / 06 / 1	**P-1 Line Item Number / Title:** 6120 / Spares and Repair Parts	**Title:** WPN spares

End Item Line Item Number / Name [MDAP/MAIS]	Prior Years ($ M)	FY 2019 ($ M)	FY 2020 ($ M)	FY 2021 Base ($ M)	FY 2021 OCO ($ M)	FY 2021 Total ($ M)
4129 / Small Arms and Weapons	-	-	-	0.336	-	0.336
4205 / Close-In Wpns Sys (CIWS) Mods	-	11.725	4.929	1.902	-	1.902
4206 / Coast Guard Weapons	-	0.337	-	0.175	-	0.175
4217 / Gun Mount Mods	-	8.763	18.413	10.196	-	10.196
4225 / Airborne Mine Neutralization Systems	-	9.300	0.799	1.243	-	1.243
Subtotal: Replenishment	***-***	***113.026***	***102.368***	***135.592***	***-***	***135.592***
Total Cost (Initial + Replenishment)	**-**	**127.088**	**125.338**	**159.578**	**-**	**159.578**

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