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**Department of Defense
Fiscal Year (FY) 2021 Budget Estimates**

February 2020



Army

*Justification Book of
Procurement of Ammunition, Army*

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Army • Budget Estimates FY 2021 • Procurement

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Cost Statement

The following Justification Books were prepared at a cost of \$460,860: Aircraft (ACFT), Missile (MSLS), Weapons & Tracked Combat Vehicles (WTCV), Ammunition (AMMO), Other Procurement Army (OPA) 1 - Tactical & Support Vehicles, Other Procurement Army (OPA) 2 – Communications & Electronics, Other Procurement Army (OPA) 3 & 4 - Other Support Equipment & Spares, Research, Development, Test and Evaluation (RDTE) for: Budget Activity 1, Budget Activity 2, Budget Activity 3, Budget Activity 4, Budget Activity 5A, Budget Activity 5B, Budget Activity 6, Budget Activity 7, and Budget Activity 8.

PROCUREMENT OF AMMUNITION, ARMY

Appropriation Language

For construction, procurement, production, modification, and modernization of ammunition, and accessories therefore; specialized equipment and training devices; expansion of public and private plants, including ammunition facilities, authorized by Sec 2854 of Title 10, United States Code, and land necessary therefore, for the foregoing purposes, and such lands and interest 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; and other expenses necessary for the foregoing purposes, \$2,999,567,000 in fiscal year 2021 to remain available for obligation until September 30, 2023.

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

13 Jan 2020

Appropriation	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 OCO Enacted	FY 2020 Emergency
Procurement of Ammunition, Army	2,575,405	2,578,575	148,682	
Total Department of the Army	2,575,405	2,578,575	148,682	

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13 Jan 2020

<u>Appropriation</u>	<u>FY 2020 Total Enacted</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO for Base Requirements</u>	<u>FY 2021 OCO for Direct War and Enduring Costs</u>
Procurement of Ammunition, Army	2,727,257	2,777,716		110,668
Total Department of the Army	2,727,257	2,777,716		110,668

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Department of the Army
FY 2021 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

13 Jan 2020

<u>Appropriation</u>	<u>FY 2021 Total OCO</u>	<u>FY 2021 Total (Base + OCO)</u>
Procurement of Ammunition, Army	110,668	2,888,384
Total Department of the Army	110,668	2,888,384

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Department of the Army
 FY 2021 President's Budget
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 Total Obligational Authority
 (Dollars in Thousands)

13 Jan 2020

Appropriation: Procurement of Ammunition, Army

Budget Activity	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 OCO Enacted	FY 2020 Emergency
01. Ammunition	1,963,152	1,897,719	148,682	
02. Ammunition Production Base Support	612,253	680,856		
Total Procurement of Ammunition, Army	2,575,405	2,578,575	148,682	

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Department of the Army
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 (Dollars in Thousands)

13 Jan 2020

Appropriation: Procurement of Ammunition, Army

Budget Activity	FY 2020 Total Enacted	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs
01. Ammunition	2,046,401	1,947,011		110,668
02. Ammunition Production Base Support	680,856	830,705		
Total Procurement of Ammunition, Army	2,727,257	2,777,716		110,668

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Department of the Army
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 (Dollars in Thousands)

13 Jan 2020

Appropriation: Procurement of Ammunition, Army

Budget Activity	FY 2021 Total OCO	FY 2021 Total (Base + OCO)
01. Ammunition	110,668	2,057,679
02. Ammunition Production Base Support		830,705
Total Procurement of Ammunition, Army	110,668	2,888,384

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Department of the Army
 FY 2021 President's Budget
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 Total Obligational Authority
 (Dollars in Thousands)

13 Jan 2020

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO)		FY 2020 Base Enacted		FY 2020 OCO Enacted		FY 2020 Emergency		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
<u>Budget Activity 01: Ammunition</u>											
Small/Medium Cal Ammunition											
1	CTG, 5.56MM, All Types	A		44,858		63,293		567			U
2	CTG, 7.62MM, All Types	A		86,239		112,003		40			U
3	NEXT GENERATION SQUAD WEAPON AMMUNITION	A									U
4	CTG, Handgun, All Types	A		15,344		17,807		17			U
5	CTG, .50 Cal, All Types	A		69,574		62,860		189			U
6	CTG, 20mm, All Types	A		9,803		27,432					U
7	CTG, 25mm, All Types	A				8,990					U
8	CTG, 30mm, All Types	A		85,617		65,337		24,900			U
9	CTG, 40mm, All Types	A		69,781		103,952					U
Mortar Ammunition											
10	60MM Mortar, All Types			45,498		49,580					U
11	81MM Mortar, All Types			47,887		61,873					U
12	120MM Mortar, All Types	A		82,853		123,110					U
Tank Ammunition											
13	Cartridges, Tank, 105MM And 120MM, All Types	A		151,901		121,659					U
Artillery Ammunition											
14	Artillery Cartridges, 75MM & 105MM, All Types	A		30,006		44,675					U

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Department of the Army
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 (Dollars in Thousands)

13 Jan 2020

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted		FY 2021 Base		FY 2021 OCO for Base Requirements		FY 2021 OCO for Direct War and Enduring Costs		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Ammunition											
Small/Medium Cal Ammunition											
1	CTG, 5.56MM, All Types	A		63,860		68,472				567	U
2	CTG, 7.62MM, All Types	A		112,043		109,933				40	U
3	NEXT GENERATION SQUAD WEAPON AMMUNITION	A				11,988					U
4	CTG, Handgun, All Types	A		17,824		853				17	U
5	CTG, .50 Cal, All Types	A		63,049		58,280				189	U
6	CTG, 20mm, All Types	A		27,432		31,708					U
7	CTG, 25mm, All Types	A		8,990		9,111					U
8	CTG, 30mm, All Types	A		90,237		58,172				24,900	U
9	CTG, 40mm, All Types	A		103,952		114,638					U
Mortar Ammunition											
10	60MM Mortar, All Types			49,580		31,222					U
11	81MM Mortar, All Types			61,873		42,857					U
12	120MM Mortar, All Types	A		123,110		107,762					U
Tank Ammunition											
13	Cartridges, Tank, 105MM And 120MM, All Types	A		121,659		233,444					U
Artillery Ammunition											
14	Artillery Cartridges, 75MM & 105MM, All Types	A		44,675		35,963					U

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 (Dollars in Thousands)

13 Jan 2020

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO		FY 2021 Total (Base + OCO)		S e c
			Quantity	Cost	Quantity	Cost	
Budget Activity 01: Ammunition							
Small/Medium Cal Ammunition							
1	CTG, 5.56MM, All Types	A		567	69,039		U
2	CTG, 7.62MM, All Types	A		40	109,973		U
3	NEXT GENERATION SQUAD WEAPON AMMUNITION	A			11,988		U
4	CTG, Handgun, All Types	A		17	870		U
5	CTG, .50 Cal, All Types	A		189	58,469		U
6	CTG, 20mm, All Types	A			31,708		U
7	CTG, 25mm, All Types	A			9,111		U
8	CTG, 30mm, All Types	A		24,900	83,072		U
9	CTG, 40mm, All Types	A			114,638		U
Mortar Ammunition							
10	60MM Mortar, All Types				31,222		U
11	81MM Mortar, All Types				42,857		U
12	120MM Mortar, All Types	A			107,762		U
Tank Ammunition							
13	Cartridges, Tank, 105MM And 120MM, All Types	A			233,444		U
Artillery Ammunition							
14	Artillery Cartridges, 75MM & 105MM, All Types	A			35,963		U

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Department of the Army
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 (Dollars in Thousands)

13 Jan 2020

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO)		FY 2020 Base Enacted		FY 2020 OCO Enacted		FY 2020 Emergency		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
15	ARTILLERY PROJECTILE, 155MM, All Types			305,509		256,037					U
16	Proj 155mm Extended Range M982	A	2248	173,891	500	56,027	304	36,052			U
17	Artillery Propellants, Fuzes and Primers, All	A		270,577		264,722		7,271			U
Mines											
18	Mines & Clearing Charges, All Types			15,005		39,239					U
19	Close Terrain Shaping Obstacle	A									U
Rockets											
20	Shoulder Launched Munitions, All Types	A		21,315		67,528		176			U
21	Rocket, Hydra 70, All Types	A		275,685		170,994		79,459			U
Other Ammunition											
22	CAD/PAD, All Types	A		8,928		7,595					U
23	Demolition Munitions, All Types	A		44,661		51,651					U
24	Grenades, All Types	A		39,904		46,282					U
25	Signals, All Types	A		8,121		18,609					U
26	Simulators, All Types	A		11,464		16,054					U
Miscellaneous											
27	Ammo Components, All Types	A		4,179		2,661					U
28	Non-Lethal Ammunition, All Types	A		2,810							U
29	Items Less Than \$5 Million (AMMO)	A		12,706		9,213		11			U
30	Ammunition Peculiar Equipment	A		10,500		10,044					U

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Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted		FY 2021 Base		FY 2021 OCO for Base Requirements		FY 2021 OCO for Direct War and Enduring Costs		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
15	ARTILLERY PROJECTILE, 155MM, All Types			256,037		293,692					U
16	Proj 155mm Extended Range M982	A	804	92,079	597	69,159			275	29,213	U
17	Artillery Propellants, Fuzes and Primers, All	A		271,993		232,913				21,675	U
Mines											
18	Mines & Clearing Charges, All Types			39,239		65,278					U
19	Close Terrain Shaping Obstacle	A				4,995					U
Rockets											
20	Shoulder Launched Munitions, All Types	A		67,704		69,112				176	U
21	Rocket, Hydra 70, All Types	A		250,453		125,915				33,880	U
Other Ammunition											
22	CAD/PAD, All Types	A		7,595		8,891					U
23	Demolition Munitions, All Types	A		51,651		54,043					U
24	Grenades, All Types	A		46,282		28,931					U
25	Signals, All Types	A		18,609		27,036					U
26	Simulators, All Types	A		16,054		10,253					U
Miscellaneous											
27	Ammo Components, All Types	A		2,661		3,476					U
28	Non-Lethal Ammunition, All Types	A									U
29	Items Less Than \$5 Million (AMMO)	A		9,224		10,569				11	U
30	Ammunition Peculiar Equipment	A		10,044		12,338					U

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Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO		FY 2021 Total (Base + OCO)		S e c
			Quantity	Cost	Quantity	Cost	
15	ARTILLERY PROJECTILE, 155MM, All Types				293,692		U
16	Proj 155mm Extended Range M982	A	275	29,213	872	98,372	U
17	Artillery Propellants, Fuzes and Primers, All	A		21,675		254,588	U
Mines							
18	Mines & Clearing Charges, All Types					65,278	U
19	Close Terrain Shaping Obstacle	A				4,995	U
Rockets							
20	Shoulder Launched Munitions, All Types	A		176		69,288	U
21	Rocket, Hydra 70, All Types	A		33,880		159,795	U
Other Ammunition							
22	CAD/PAD, All Types	A				8,891	U
23	Demolition Munitions, All Types	A				54,043	U
24	Grenades, All Types	A				28,931	U
25	Signals, All Types	A				27,036	U
26	Simulators, All Types	A				10,253	U
Miscellaneous							
27	Ammo Components, All Types	A				3,476	U
28	Non-Lethal Ammunition, All Types	A					U
29	Items Less Than \$5 Million (AMMO)	A		11		10,580	U
30	Ammunition Peculiar Equipment	A				12,338	U

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Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO)		FY 2020 Base Enacted		FY 2020 OCO Enacted		FY 2020 Emergency		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
31	First Destination Transportation (AMMO)	A		18,456		18,492					U
32	Closeout Liabilities			80							U
Total Ammunition				1,963,152		1,897,719		148,682			
Budget Activity 02: Ammunition Production Base Support											
Production Base Support											
33	Industrial Facilities			459,792		474,511					U
34	Conventional Munitions Demilitarization			148,690		202,512					U
35	ARMS Initiative			3,771		3,833					U
Total Ammunition Production Base Support				612,253		680,856					
Total Procurement of Ammunition, Army				2,575,405		2,578,575		148,682			

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Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted		FY 2021 Base		FY 2021 OCO for Base Requirements		FY 2021 OCO for Direct War and Enduring Costs		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
31	First Destination Transportation (AMMO)	A		18,492		15,908					U
32	Closeout Liabilities					99					U
Total Ammunition				2,046,401		1,947,011				110,668	
Budget Activity 02: Ammunition Production Base Support											
Production Base Support											
33	Industrial Facilities			474,511		592,224					U
34	Conventional Munitions Demilitarization			202,512		235,112					U
35	ARMS Initiative			3,833		3,369					U
Total Ammunition Production Base Support				680,856		830,705					
Total Procurement of Ammunition, Army				2,727,257		2,777,716				110,668	

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13 Jan 2020

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO		FY 2021 Total (Base + OCO)		S e c
			Quantity	Cost	Quantity	Cost	
31	First Destination Transportation (AMMO)	A			15,908		U
32	Closeout Liabilities					99	U
Total Ammunition				110,668		2,057,679	
<u>Budget Activity 02: Ammunition Production Base Support</u>							
Production Base Support							
33	Industrial Facilities				592,224		U
34	Conventional Munitions Demilitarization				235,112		U
35	ARMS Initiative					3,369	U
Total Ammunition Production Base Support						830,705	
Total Procurement of Ammunition, Army				110,668		2,888,384	

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

Appropriation 2034A: Procurement of Ammunition, Army

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1	01	30	0132E00700	CTG, 5.56MM, All Types.....	1
2	01	30	0612E02000	CTG, 7.62MM, All Types.....	43
3	01	30	1065E06001	NEXT GENERATION SQUAD WEAPON AMMUNITION.....	74
4	01	30	1450EA3000	CTG, Handgun, All Types.....	81
5	01	30	1722E08000	CTG, .50 Cal, All Types.....	84
6	01	30	2382E08900	CTG, 20mm, All Types.....	108
7	01	30	2650E08200	CTG, 25mm, All Types.....	115
8	01	30	2938ER8120	CTG, 30mm, All Types.....	123
9	01	30	3222ER8001	CTG, 40mm, All Types.....	167
10	01	33	0050E89600	60MM Mortar, All Types.....	191
11	01	33	3584E76000	81MM Mortar, All Types.....	209
12	01	33	6780E25500	120MM Mortar, All Types.....	232
13	01	35	1120E22203	Cartridges, Tank, 105MM And 120MM, All Types.....	262
14	01	37	0530E15101	Artillery Cartridges, 75MM & 105MM, All Types.....	293
15	01	37	3102E89500	ARTILLERY PROJECTILE, 155MM, All Types.....	303
16	01	37	6600E80100	Proj 155mm Extended Range M982.....	348

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Appropriation 2034A: Procurement of Ammunition, Army

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17	01	37	8750E27501	Artillery Propellants, Fuzes and Primers, All.....	357
18	01	43	0442EA0800	Mines & Clearing Charges, All Types.....	388
19	01	43	0612E76740	Close Terrain Shaping Obstacle.....	409
20	01	45	2348EA4000	Shoulder Launched Munitions, All Types.....	410
21	01	45	3246E37300	Rocket, Hydra 70, All Types.....	434
22	01	47	2420E61000	CAD/PAD, All Types.....	445
23	01	47	2790E55400	Demolition Munitions, All Types.....	452
24	01	47	4582E34000	Grenades, All Types.....	492
25	01	47	6038E46900	Signals, All Types.....	518
26	01	47	8278E51200	Simulators, All Types.....	539
27	01	50	0684EB0016	Ammo Components, All Types.....	549
28	01	50	1430E91901	Non-Lethal Ammunition, All Types.....	550
29	01	50	2624EA0055	Items Less Than \$5 Million (AMMO).....	552
30	01	50	4370EA0575	Ammunition Peculiar Equipment.....	563
31	01	50	4758EA0550	First Destination Transportation (AMMO).....	567
32	01	50	9615EA8500	Closeout Liabilities.....	568

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Appropriation 2034A: Procurement of Ammunition, Army

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33	02	10	0572EP1000	Industrial Facilities.....	569
34	02	10	4099EP1700	Conventional Munitions Demilitarization.....	644
35	02	10	4150EP2500	ARMS Initiative.....	652

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60MM Mortar, All Types	0050E89600	10	01	33.....	191
81MM Mortar, All Types	3584E76000	11	01	33.....	209
ARMS Initiative	4150EP2500	35	02	10.....	652
ARTILLERY PROJECTILE, 155MM, All Types	3102E89500	15	01	37.....	303
Ammo Components, All Types	0684EB0016	27	01	50.....	549
Ammunition Peculiar Equipment	4370EA0575	30	01	50.....	563
Artillery Cartridges, 75MM & 105MM, All Types	0530E15101	14	01	37.....	293
Artillery Propellants, Fuzes and Primers, All	8750E27501	17	01	37.....	357
CAD/PAD, All Types	2420E61000	22	01	47.....	445
CTG, .50 Cal, All Types	1722E08000	5	01	30.....	84
CTG, 20mm, All Types	2382E08900	6	01	30.....	108
CTG, 25mm, All Types	2650E08200	7	01	30.....	115
CTG, 30mm, All Types	2938ER8120	8	01	30.....	123
CTG, 40mm, All Types	3222ER8001	9	01	30.....	167
CTG, 5.56MM, All Types	0132E00700	1	01	30.....	1
CTG, 7.62MM, All Types	0612E02000	2	01	30.....	43

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Line Item Title	Line Item Number	Line #	BA	BSA	Page
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Cartridges, Tank, 105MM And 120MM, All Types	1120E22203	13	01	35.....	262
Close Terrain Shaping Obstacle	0612E76740	19	01	43.....	409
Closeout Liabilities	9615EA8500	32	01	50.....	568
Conventional Munitions Demilitarization	4099EP1700	34	02	10.....	644
Demolition Munitions, All Types	2790E55400	23	01	47.....	452
First Destination Transportation (AMMO)	4758EA0550	31	01	50.....	567
Grenades, All Types	4582E34000	24	01	47.....	492
Industrial Facilities	0572EP1000	33	02	10.....	569
Items Less Than \$5 Million (AMMO)	2624EA0055	29	01	50.....	552
Mines & Clearing Charges, All Types	0442EA0800	18	01	43.....	388
NEXT GENERATION SQUAD WEAPON AMMUNITION	1065E06001	3	01	30.....	74
Non-Lethal Ammunition, All Types	1430E91901	28	01	50.....	550
Proj 155mm Extended Range M982	6600E80100	16	01	37.....	348
Rocket, Hydra 70, All Types	3246E37300	21	01	45.....	434
Shoulder Launched Munitions, All Types	2348EA4000	20	01	45.....	410
Signals, All Types	6038E46900	25	01	47.....	518
Simulators, All Types	8278E51200	26	01	47.....	539

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,890.717	44.858	63.860	68.472	0.567	69.039	71.070	72.486	73.021	73.329	-	2,358.380
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,890.717	44.858	63.860	68.472	0.567	69.039	71.070	72.486	73.021	73.329	-	2,358.380
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,890.717	44.858	63.860	68.472	0.567	69.039	71.070	72.486	73.021	73.329	-	2,358.380

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

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

Description:

This budget line includes 5.56MM ALL TYPES.

(E00901) The M199A1, 5.56mm Dummy Drill & Inert ammunition (DDI) is an inert (no energetic) dummy cartridge used as an ammunition training aid and for weapon familiarization. The M199A1 DDI ammunition is both nickel plated and fluted for easy recognition and to distinguish the dummy ammunition visually from tactical ammunition. This item is Code A, approved for service use.

(E01100) 5.56mm, M200 Blank Cartridge consists of a brass cartridge case with primer and propellant sealed with a rosette crimp. This cartridge is used for training and ceremonial purposes without blank firing attachment (BFA) and in M16A2/A4 Series Rifles and M4 Carbine fitted with BFA. This item is Code A, approved for service use.

(E01101) 5.56mm Blank M200 Linked cartridge consists of a brass cartridge case with primer and propellant sealed with a rosette crimp. This cartridge is used in the M249 Squad Automatic Weapon (SAW) Machine Gun with a Blank Firing Adapter, and it is designed to simulate firing during training exercises. The M27 metallic link is merely a scaled-down version of the 7.62mm M13 one-piece link. This item is Code A, approved for service use.

(E04607) 5.56mm M855A1 Ball Cartridges and M856A1 Tracer Cartridges are linked in a 4-Ball/1-Tracer configuration with the M27 link for use in the M249 Machine Gun. The M855A1 Ball Cartridge has a steel penetrator and non-lead slug surrounded by a copper jacket. The M856A1 Tracer Cartridge is lead free and provides a visible red light signature through its trajectory. The M856A1 Tracer Cartridge provides visible signature of fire out to 900 meters. This item is Code A, approved for service use.

(E04608) 5.56mm M856A1 Tracer Bullet is lead free and provides a visible red light signature through its trajectory. The bullet is used in M16 and M4 Rifles/Carbines. This item is Code A, approved for service use.

(E95200) 5.56mm, M855A1 Ball Cartridge is linked with the M27 link for use in the M249 Machine Gun. The M855A1 Ball Cartridge has a steel penetrator and non-lead slug surrounded by a copper jacket. This item is Code A, approved for service use.

(E95400) 5.56mm, M855A1 Ball Cartridge has a steel penetrator and lead free slug surrounded by a copper jacket. The cartridge is used in M16A2/A4 Rifles and M4/M4A1 Carbines. This cartridge is packed in bandoleers in standard military can pack. This item is Code A, approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

(E95700) 5.56mm, M855A1 Ball Cartridge has a steel penetrator and lead free slug surrounded by a copper jacket. The cartridge is used in M16A2/A4 Rifles and M4/M4A1 Carbines. This cartridge is packed without bandoleer in standard military can pack. This item is Code A, approved for service use.

(E96110) 5.56mm, Marking Blue, M1042 is used for force-on-force training engagements. The cartridge can be fired with the existing M4 Carbine and M16A2/A3/A4 Rifles with the use of a conversion bolt. The projectile leaves a mark upon impact (similar to paintball), thus enabling after action evaluation of training scenarios. However, it differs from paintball in that it is a full, complete cartridge with projectile and cartridge case containing a propulsion system for a low velocity launch. In FY 2021, this item will transition to a lead free version under the new DODIC AC39. This item is Code A, approved for service use.

(E96111) 5.56mm Marking Red, M1042 is used for force-on-force training engagements. The cartridge can be fired with the existing M4 Carbine and the M16A2/A3/A4 Rifles with the use of a conversion bolt. The projectile leaves a mark upon impact (similar to paintball), thus enabling after action evaluation of training scenarios. However, it differs from paintball in that it is a full, complete cartridge with projectile and cartridge case containing a propulsion system for a low velocity launch. In FY 2021, this item will transition to a lead free version under the new DODIC AC40. This item is Code A, approved for service use.

(E96120) 5.56mm, Marking Blue, M1071 is used for force-on-force training engagements. The cartridge can be fired with the existing M249 Squad Automatic Weapon with the use of the conversion kit. The projectile leaves a mark upon impact (similar to paintball), thus enabling after action evaluation of training scenarios. However, it differs from paintball in that it is a full, complete cartridge with projectile and cartridge case containing a propulsion system for a low velocity launch. In FY 2021, this item will transition to a lead free version under the new DODIC AC42. This item is Code A, approved for service use.

(E96121) 5.56mm, Marking Red, M1071 is used for force-on-force training engagements. The cartridge can be fired with the existing M249 Squad Automatic Weapon with the use of the conversion kit. The projectile leaves a mark upon impact (similar to paintball), thus enabling after action evaluation of training scenarios. However, it differs from paintball in that it is a full, complete cartridge with projectile and cartridge case containing a propulsion system for a low velocity launch. In FY 2021, this item will transition to a lead free version under the new DODIC AC43. This item is Code A, approved for service use.

(E96125) 5.56mm Short Range Training M1037 clipped cartridge will be used in live fire training scenarios. The M1037 clipped cartridge permits training in adjacent training areas due to its reduced Surface Danger Zone (SDZ) and can be fired with existing M4 weapons. This cartridge is used for Military Operations/Urban Terrain (MOUT) operational training. This item is Code A, approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/
Medium Cal Ammunition **P-1 Line Item Number / Title:**
0132E00700 / CTG, 5.56MM, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E00901 / CTG, 5.56mm Single Round (NPF DDI), M199A1 [AB46]		A		- / 0.524	- / -	- / -	- / 0.029	- / -	- / 0.029
P-5	E01100 / CTG, 5.56mm Blank, M200, Single Round [A080]	P-5a, P-21	A		- / 536.915	- / 3.312	- / 12.400	- / 8.515	- / -	- / 8.515
P-5	E01101 / CTG, 5.56mm Blank, M200 Linked f/SAW [A075]	P-5a, P-21	A		- / 212.227	- / 2.455	- / 5.822	- / 5.940	- / -	- / 5.940
P-5	E04607 / CTG, 5.56mm 4 Ball EPR, M855A1 /1 TR M856A1 Linked [AB73]	P-5a, P-21	A		- / 63.033	- / 9.647	- / 8.477	- / 6.678	- / 0.132	- / 6.810
P-5	E04608 / CTG, 5.56mm Tracer, M856A1 Single Round [AB74]		A		- / 9.782	- / -	- / 0.435	- / 0.434	- / 0.435	- / 0.869
P-5	E95200 / CTG, 5.56mm EPR Ball, M855A1 w/M27 Link f/SAW [AB56]		A		- / 31.431	- / -	- / 0.073	- / 0.510	- / -	- / 0.510
P-5	E95400 / CTG, 5.56mm Ball, M855A1 EPR, Clipped Mil Pack [AB57]	P-5a, P-21	A		- / 820.474	- / 6.519	- / 11.164	- / 6.479	- / -	- / 6.479
P-5	E95700 / CTG, 5.56mm Ball, M855A1 Clipped Bulk Pack [AB77]	P-5a, P-21	A		- / 167.070	- / 17.915	- / 20.239	- / 33.035	- / -	- / 33.035
P-5	E96110 / CTG, 5.56mm Marking, M1042 (Blue) [AB09]		A		- / 25.254	- / -	- / -	- / 1.725	- / -	- / 1.725
P-5	E96111 / CTG, 5.56mm Marking, M1042 (Red) [AB10]		A		- / 11.842	- / 0.993	- / 1.270	- / 1.268	- / -	- / 1.268
P-5	E96120 / CTG, 5.56mm Marking, M1071 (Blue) Linked f/SAW [AB16]		A		- / 4.396	- / 0.778	- / 0.707	- / 0.806	- / -	- / 0.806
P-5	E96121 / CTG, 5.56mm Marking, M1071 (Red) Linked f/SAW [AB17]		A		- / 4.055	- / 0.622	- / 0.512	- / 0.239	- / -	- / 0.239
P-5	E96125 / Ctg, 5.56mm, Short Range Training, M1037, sngl rd [AB67]		A		- / 3.714	- / 2.617	- / 2.761	- / 2.814	- / -	- / 2.814
P-40	Total Gross/Weapon System Cost				- / 1,890.717	- / 44.858	- / 63.860	- / 68.472	- / 0.567	- / 69.039

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Overseas Contingency Operations (OCO) procurement dollars in the amount of \$68.472 million support procurement of 149.113 million rounds of 5.56mm ammunition in support of the National Defense Strategy and Combatant Command (COCOM) requirements. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of 5.56MM ALL TYPES when possible.

FY 2021 Base dollars in the amount of \$0.567 million support the enduring COCOM requirement for procurement of 0.770 million 5.56mm cartridges to deter potential adversaries and support the European Deterrence Initiative.

(E00901) 5.56mm, Single Cartridge (DDI), M199A1 is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.029 million support the procurement of 0.025 million Single Cartridge (DDI), M199A1 Cartridges.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>E00901 is a new start in FY 2021. Type Classification date: 2008</p> <p>(E01100) 5.56mm, M200 Blank Cartridge is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$8.515 million support the procurement of 32.648 million M200 Blank Cartridges. Type classification date: prior to 1977</p> <p>(E01101) 5.56mm, M200 Blank Linked F/SAW is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$5.940 million support the procurement of 14.733 million M200 Blank Linked Cartridges. Type classification date: prior to 1977</p> <p>(E04607) 5.56mm M855A1 Ball and M856A1 Tracer Cartridges are training standard items used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$6.678 million support the procurement of 10.140 million M855A1 Ball and M856A1 Tracer Cartridges. FY 2021 Overseas Contingency Operations (OCO) dollars in the amount of \$0.132 million support the enduring COCOM requirement for procurement of 0.213 million M855A1 Ball and M856A1 Tracer Cartridges to deter potential adversaries and support the European Deterrence Initiative. Type classification date: 1982</p> <p>(E04608) 5.56mm M856A1 Tracer Bullet is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.434 million support the procurement of 0.496 million M856A1 Tracer cartridges. FY 2021 Overseas Contingency Operations (OCO) dollars in the amount of \$0.435 million support the enduring COCOM requirement for procurement of 0.557 million M856A1 Tracer Bullets to deter potential adversaries and support the European Deterrence Initiative. Type classification date: 1982</p> <p>(E95200) 5.56mm, M855A1 Ball Cartridge is linked with the M27 link and is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.510 million support the procurement of 0.873 million M855A1 Ball Cartridges linked with the M27 link. Type classification date: 1982</p> <p>(E95400) 5.56mm, M855A1 Ball Cartridge is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$6.479 million support the procurement of 12.819 million M855A1 Ball Cartridges. Type classification date: 1982</p> <p>(E95700) 5.56mm, M855A1 Ball Cartridge is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$33.035 million support the procurement of 70.322 million M855A1 Ball Cartridges. Type classification date: 1982</p> <p>(E96110) 5.56mm, Marking, M1042 Blue is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$1.725 million support the procurement of 1.861 million Marking Blue M1042 Cartridges. E96110 is a new start in FY 2021. Type classification date: May 2009</p> <p>(E96111) 5.56mm Marking, M1042 Red is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$1.268 million support the procurement of 1.368 million of the Marking Red M1042 Cartridges.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Type classification date: May 2009		
(E96120) 5.56mm, Marking Blue, M1071 is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.806 million support the procurement of 0.692 million of the Marking Blue M1071 Cartridges. Type classification date: May 2009		
(E96121) 5.56mm, Marking Red, M1071 is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.239 million support the procurement of 0.205 million of the Marking Red M1071 Cartridges. Type classification date: May 2009		
(E96125) 5.56mm Short Range Training Ammunition (SRTA) M1037 clipped cartridges is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$2.814 million support the procurement of 2.161 million of the clipped SRTA M1037 Cartridges. Type classification date: July 2012		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
		Item Number / Title [DODIC]: E00901 / CTG, 5.56mm Single Round (NPF DDI), M199A1 [AB46]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	0.524	-	-	0.029	-	0.029
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.524	-	-	0.029	-	0.029
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.524	-	-	0.029	-	0.029

(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																		
LOAD, ASSEMBLE, PACK (LAP)	-	-	0.508	-	-	-	-	-	-	1.10	25,115	0.028	-	-	-	1.10	25,115	0.028
<i>Subtotal: Recurring Cost</i>	-	-	<i>0.508</i>	-	-	-	-	-	-	-	-	<i>0.028</i>	-	-	-	-	-	<i>0.028</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>0.508</i>	-	-	-	-	-	-	-	-	<i>0.028</i>	-	-	-	-	-	<i>0.028</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	0.016	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-	0.001
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.016</i>	-	-	-	-	-	-	-	-	<i>0.001</i>	-	-	-	-	-	<i>0.001</i>
Gross/Weapon System Cost	-	-	0.524	-	-	-	-	-	-	-	-	0.029	-	-	-	-	-	0.029

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E01100 / CTG, 5.56mm Blank, M200, Single Round [A080]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	536.915	3.312	12.400	8.515	-	8.515
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	536.915	3.312	12.400	8.515	-	8.515
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	536.915	3.312	12.400	8.515	-	8.515

(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																		
Complete Round ^(†)	-	-	507.543	0.14	19,284,942	2.700	0.20	54,480,551	11.065	0.23	32,647,663	7.509	-	-	-	0.23	32,647,663	7.509
BOX METAL M2A2 ^(†)	10.95	2,427,326	26.579	14.25	16,971	0.242	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	534.122	-	-	2.942	-	-	11.065	-	-	7.509	-	-	-	-	-	7.509
Subtotal: Hardware Cost	-	-	534.122	-	-	2.942	-	-	11.065	-	-	7.509	-	-	-	-	-	7.509
Support - Production Engineering Cost																		
Production Engineering	-	-	2.764	-	-	0.362	-	-	1.327	-	-	0.998	-	-	-	-	-	0.998
Subtotal: Support - Production Engineering Cost	-	-	2.764	-	-	0.362	-	-	1.327	-	-	0.998	-	-	-	-	-	0.998
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.029	-	-	0.008	-	-	0.008	-	-	0.008	-	-	-	-	-	0.008
Subtotal: Support - Quality Assurance Cost	-	-	0.029	-	-	0.008	-	-	0.008	-	-	0.008	-	-	-	-	-	0.008
Gross/Weapon System Cost	-	-	536.915	-	-	3.312	-	-	12.400	-	-	8.515	-	-	-	-	-	8.515

Remarks:
Beginning in FY 2020, M2A2 metal boxes are no longer a separate component and will be part of the complete round.

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types				Item Number / Title [DODIC]: E01100 / CTG, 5.56mm Blank, M200, Single Round [A080]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round ^(†)		2019	NORTHROP GRUMMAN INNVTN SYS / INDEPENDENCE, MO	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Jan 2020	19,284,942	0.14	Y		
Complete Round ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	54,480,551	0.20	Y		
Complete Round ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Oct 2021	27,750,514	0.23	Y		
Complete Round ^(†)		2021	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2021	4,897,149	0.23	Y		
BOX METAL M2A2		2019	BWAY CORPORATION / ATLANTA, GA	Option / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Jul 2019	16,971	14.25	Y		

^(†) indicates the presence of a P-21

Remarks:

FY 2021 complete round is an average unit cost between two contractors.
 The Government will determine the quantity split between the two contractors in the year of execution.
 Olin is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
		Item Number / Title [DODIC]: E01100 / CTG, 5.56mm Blank, M200, Single Round [A080]

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2019												Fiscal Year 2020												BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
Complete Round																															
	1	2019	ARMY	19.285	.000	19.285																								4.821	
	2	2020	ARMY	54.481	.000	54.481																								54.481	
	2	2021	AF (†)	1.351	.000	1.351																								1.351	
	2	2021	ARMY	27.751	.000	27.751																								27.751	
	2	2021	NSOF (†)	1.702	.000	1.702																								1.702	
	2	2021	Total	30.803	.000	30.803																								30.803	
	3	2021	AF (†)	.238	.000	.238																								.238	
	3	2021	ARMY	4.897	.000	4.897																								4.897	
	3	2021	NSOF (†)	.300	.000	.300																								.300	
	3	2021	Total	5.436	.000	5.436																								5.436	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types										Item Number / Title [DODIC]: E01100 / CTG, 5.56mm Blank, M200, Single Round [A080]									

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2021															Fiscal Year 2022															BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021															Calendar Year 2022															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
Complete Round																																					
	1	2019	ARMY	19.285	14.464	4.821	1.607	1.607	1.607																					.000							
	2	2020	ARMY	54.481	.000	54.481	-	-	-	-	-	5.252	5.252	5.252	5.252	5.252	5.252	5.252	5.252	5.252	5.252	5.252	5.252	1.965						.000							
	2	2021	AF (†)	1.351	.000	1.351														.113	.113	.113	.113	.113	.113	.113	.113	.113	.113	.000							
	2	2021	ARMY	27.751	.000	27.751														2.313	2.313	2.313	2.313	2.313	2.313	2.313	2.313	2.313	2.313	.000							
	2	2021	NSOF (†)	1.702	.000	1.702														.142	.142	.142	.142	.142	.142	.142	.142	.142	.142	.000							
	2	2021	Total	30.803	.000	30.803														2.567	2.567	2.567	2.567	2.567	2.567	2.567	2.567	2.567	2.567	.000							
	3	2021	AF (†)	.238	.000	.238													.020	.020	.020	.020	.020	.020	.020	.020	.020	.020	.020	.000							
	3	2021	ARMY	4.897	.000	4.897													.408	.408	.408	.408	.408	.408	.408	.408	.408	.408	.408	.000							
	3	2021	NSOF (†)	.300	.000	.300													.025	.025	.025	.025	.025	.025	.025	.025	.025	.025	.025	.000							
	3	2021	Total	5.436	.000	5.436													.453	.453	.453	.453	.453	.453	.453	.453	.453	.453	.453	.000							
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
Item Number / Title [DODIC]: E01100 / CTG, 5.56mm Blank, M200, Single Round [A080]		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMMAN INNVN SYS - INDEPENDENCE, MO	2,280	13,700,000	41,000,000	6	6	12	18	6	6	7	13
2	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	2,280	13,700,000	41,000,000	6	6	12	18	6	6	6	12
3	OLIN CORP WINCHESTER DIVISION - EAST ALTON, IL	2,280	13,700,000	41,000,000	6	6	12	18	6	6	6	12

(*) 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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E01101 / CTG, 5.56mm Blank, M200 Linked f/SAW [A075]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	212.227	2.455	5.822	5.940	-	5.940
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	212.227	2.455	5.822	5.940	-	5.940
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	212.227	2.455	5.822	5.940	-	5.940

(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																		
COMPLETE ROUND ^(†)	0.22	961,321K	211.039	0.22	10,464,104	2.250	0.35	14,251,428	4.988	0.37	14,892,370	5.510	-	-	-	0.37	14,892,370	5.510
Subtotal: Recurring Cost	-	-	211.491	-	-	2.250	-	-	4.988	-	-	5.510	-	-	-	-	-	5.510
Subtotal: Hardware Cost	-	-	211.491	-	-	2.250	-	-	4.988	-	-	5.510	-	-	-	-	-	5.510
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	-	-	-	-	-	-	0.135	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	-	-	-	0.135	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.590	-	-	0.197	-	-	0.691	-	-	0.422	-	-	-	-	-	0.422
Subtotal: Support - Production Engineering Cost	-	-	0.590	-	-	0.197	-	-	0.691	-	-	0.422	-	-	-	-	-	0.422
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.003	-	-	0.008	-	-	0.008	-	-	0.008	-	-	-	-	-	0.008
Subtotal: Support - Quality Assurance Cost	-	-	0.003	-	-	0.008	-	-	0.008	-	-	0.008	-	-	-	-	-	0.008
Gross/Weapon System Cost	-	-	212.227	-	-	2.455	-	-	5.822	-	-	5.940	-	-	-	-	-	5.940

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types				Item Number / Title [DODIC]: E01101 / CTG, 5.56mm Blank, M200 Linked f/SAW [A075]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNVTN SYS / INDEPENDENCE, MO	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Nov 2019	10,464,104	0.22	Y		
COMPLETE ROUND ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	14,251,428	0.35	Y		
COMPLETE ROUND ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Oct 2021	14,892,370	0.37	Y		

^(†) indicates the presence of a P-21

Remarks:

Olin is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-21, Production Schedule: PB 2021 Army												Date: February 2020																	
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30						P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types												Item Number / Title [DODIC]: E01101 / CTG, 5.56mm Blank, M200 Linked f/SAW [A075]											

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2019												Fiscal Year 2020												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
Prior Years Deliveries: 961320930																															
	2	2019	ARMY	10.464	.000	10.464																									
	1	2020	ARMY	14.251	.000	14.251																								14.251	
	1	2021	ARMY	14.892	.000	14.892																								14.892	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types										Item Number / Title [DODIC]: E01101 / CTG, 5.56mm Blank, M200 Linked f/SAW [A075]									

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2021															Fiscal Year 2022															BALANCE		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEP T O 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021															Calendar Year 2022															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

COMPLETE ROUND																																	
Prior Years Deliveries: 961320930																																	
	2	2019	ARMY	10.464	9.592	.872	.872																										.000
	1	2020	ARMY	14.251	.000	14.251	-	-	-	-	-	1.686	1.686	1.686	1.686	1.686	1.686	1.686	1.686	.760													.000
	1	2021	ARMY	14.892	.000	14.892						A -	-	-	-	-	-	-	1.241	1.241	1.241	1.241	1.241	1.241	1.241	1.241	1.241	1.241	1.241	1.241	1.241	.000	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
		Item Number / Title [DODIC]: E01101 / CTG, 5.56mm Blank, M200 Linked f/SAW [A075]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	1,600	14,100,000	48,700,000	6	6	12	18	6	6	6	12
2	NORTHROP GRUMMAN INNVTN SYS - INDEPENDENCE, MO	1,600	14,100,000	48,700,000	6	6	12	18	6	6	7	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E04607 / CTG, 5.56mm 4 Ball EPR, M855A1 / 1 TR M856A1 Linked [AB73]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	63.033	9.647	8.477	6.678	0.132	6.810
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	63.033	9.647	8.477	6.678	0.132	6.810
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	63.033	9.647	8.477	6.678	0.132	6.810

(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																		
COMPLETE ROUND ^(†)	0.32	190,696K	61.023	0.38	23,686,148	9.001	0.55	14,532,110	7.920	0.61	10,140,360	6.186	0.61	212,916	0.130	0.61	10,353,276	6.315
Subtotal: Recurring Cost	-	-	61.023	-	-	9.001	-	-	7.920	-	-	6.186	-	-	0.130	-	-	6.315
Subtotal: Hardware Cost	-	-	61.023	-	-	9.001	-	-	7.920	-	-	6.186	-	-	0.130	-	-	6.315
Support - Production Engineering Cost																		
Production Engineering	-	-	1.975	-	-	0.642	-	-	0.553	-	-	0.490	-	-	0.002	-	-	0.492
Subtotal: Support - Production Engineering Cost	-	-	1.975	-	-	0.642	-	-	0.553	-	-	0.490	-	-	0.002	-	-	0.492
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.036	-	-	0.004	-	-	0.004	-	-	0.003	-	-	-	-	-	0.003
Subtotal: Support - Quality Assurance Cost	-	-	0.036	-	-	0.004	-	-	0.004	-	-	0.003	-	-	-	-	-	0.003
Gross/Weapon System Cost	-	-	63.033	-	-	9.647	-	-	8.477	-	-	6.678	-	-	0.132	-	-	6.810

Remarks:
FY 2021 unit price increase is due to decrease in demand, resulting in a lower quantity range at a higher price.

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types				Item Number / Title [DODIC]: E04607 / CTG, 5.56mm 4 Ball EPR, M855A1 / 1 TR M856A1 Linked [AB73]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNVTN SYS / INDEPENDENCE, MO	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Nov 2019	23,686,148	0.38	Y		
COMPLETE ROUND ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	14,532,110	0.54	Y		
COMPLETE ROUND ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2021	10,140,360	0.61	Y		
COMPLETE ROUND ^(†)	✓	2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2021	212,916	0.61	Y		

^(†) indicates the presence of a P-21

Remarks:

The Government will determine the quantity split between the two contractors in the year of execution.
Olin is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-21, Production Schedule: PB 2021 Army														Date: February 2020																											
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30														P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types														Item Number / Title [DODIC]: E04607 / CTG, 5.56mm 4 Ball EPR, M855A1 / 1 TR M856A1 Linked [AB73]													

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2019														Fiscal Year 2020														B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019														Calendar Year 2020														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

COMPLETE ROUND																																				
Prior Years Deliveries: 190695703																																				
2	2019	ARMY	23.686	.000	23.686																															
2	2019	NSOF (†)	.170	.000	.170																															
2	2019	Total	23.856	.000	23.856																															
1	2020	AF (†)	7.028	.000	7.028																															
1	2020	ARMY	14.532	.000	14.532																															
1	2020	Total	21.561	.000	21.561																															
1	2021	AF (†)	4.726	.000	4.726																															
1	2021	ARMY	10.140	.000	10.140																															
1	2021	Total Base	14.867	.000	14.867																															
✓	1	2021	ARMY	.213	.000	.213																														

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Exhibit P-21, Production Schedule: PB 2021 Army																				Date: February 2020									
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types										Item Number / Title [DODIC]: E04607 / CTG, 5.56mm 4 Ball EPR, M855A1 / 1 TR M856A1 Linked [AB73]									

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2021																Fiscal Year 2022																B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021																Calendar Year 2022																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P									
COMPLETE ROUND																																							
Prior Years Deliveries: 190695703																																							
	2	2019	ARMY	23.686	21.874	1.812	1.812																										.000						
	2	2019	NSOF (+)	.170	.155	.014	.014																									.000							
	2	2019	Total	23.856	22.029	1.826	1.826	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000							
	1	2020	AF (+)	7.028	.000	7.028	-	-	-	-	.586	.586	.586	.586	.586	.586	.586	.586	.586	.586	.586	.586										.000							
	1	2020	ARMY	14.532	.000	14.532	-	-	-	-	1.546	1.546	1.546	1.546	1.546	1.546	1.546	1.546	1.546	1.546	.616	-	-								.000								
	1	2020	Total	21.561	.000	21.561	-	-	-	-	2.132	2.132	2.132	2.132	2.132	2.132	2.132	2.132	2.132	2.132	1.201	.586	.586	-	-	-	-	-	-	-	.000								
	1	2021	AF (+)	4.726	.000	4.726					A -	-	-	-	-	-	.394	.394	.394	.394	.394	.394	.394	.394	.394	.394	.394	.394	.394		.000								
	1	2021	ARMY	10.140	.000	10.140					A -	-	-	-	-	-	.845	.845	.845	.845	.845	.845	.845	.845	.845	.845	.845	.845	.845		.000								
	1	2021	Total Base	14.867	.000	14.867					-	-	-	-	-	-	1.239	1.239	1.239	1.239	1.239	1.239	1.239	1.239	1.239	1.239	1.239	1.239	1.239	-	.000								
✓	1	2021	ARMY	.213	.000	.213					A -	-	-	-	-	.018	.018	.018	.018	.018	.018	.018	.018	.018	.018	.018	.018	.018		.000									
											O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
		Item Number / Title [DODIC]: E04607 / CTG, 5.56mm 4 Ball EPR, M855A1 / 1 TR M856A1 Linked [AB73]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	1,600	5,143,040	9,771,776	6	6	12	18	6	6	6	12
2	NORTHROP GRUMMAN INNVTN SYS - INDEPENDENCE, MO	1,600	5,143,040	9,771,776	6	6	12	18	6	6	7	13

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

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

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E04608 / CTG, 5.56mm Tracer, M856A1 Single Round [AB74]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	9.782	-	0.435	0.434	0.435	0.869
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	9.782	-	0.435	0.434	0.435	0.869
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	9.782	-	0.435	0.434	0.435	0.869

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

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

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

Cost Elements	Prior Years			FY 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																		
Complete Round	-	-	9.041	-	-	-	0.76	573,039	0.435	0.78	496,293	0.387	0.78	557,242	0.435	0.78	1,053,535	0.822
BOX METAL M2A2	10.38	2,608	0.027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>9.068</i>	-	-	-	-	-	<i>0.435</i>	-	-	<i>0.387</i>	-	-	<i>0.435</i>	-	-	<i>0.822</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>9.068</i>	-	-	-	-	-	<i>0.435</i>	-	-	<i>0.387</i>	-	-	<i>0.435</i>	-	-	<i>0.822</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	0.714	-	-	-	-	-	-	-	-	0.047	-	-	-	-	-	0.047
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.714</i>	-	-	-	-	-	-	-	-	<i>0.047</i>	-	-	-	-	-	<i>0.047</i>
Gross/Weapon System Cost	-	-	9.782	-	-	-	-	-	0.435	-	-	0.434	-	-	0.435	-	-	0.869

Remarks:

Beginning in FY 2020, M2A2 metal boxes are no longer a separate component and will be part of the complete round.
Olin is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30						P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types						Item Number / Title [DODIC]: E95200 / CTG, 5.56mm EPR Ball, M855A1 w/M27 Link f/SAW [AB56]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO		FY 2021 Total	
Procurement Quantity <i>(Units in Each)</i>				-		-			-			-			-		-	
Gross/Weapon System Cost <i>(\$ in Millions)</i>				31.431		-			0.073			0.510			-		0.510	
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-			-			-			-		-	
Net Procurement (P-1) <i>(\$ in Millions)</i>				31.431		-			0.073			0.510			-		0.510	
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-			-			-			-		-	
Total Obligation Authority <i>(\$ in Millions)</i>				31.431		-			0.073			0.510			-		0.510	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares <i>(\$ in Millions)</i>				-		-			-			-			-		-	
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-			-			-			-		-	
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost (\$)	Qty <i>(Each)</i>	Total Cost (\$ M)	Unit Cost (\$)	Qty <i>(Each)</i>	Total Cost (\$ M)	Unit Cost (\$)	Qty <i>(Each)</i>	Total Cost (\$ M)	Unit Cost (\$)	Qty <i>(Each)</i>	Total Cost (\$ M)	Unit Cost (\$)	Qty <i>(Each)</i>	Total Cost (\$ M)	Unit Cost (\$)	Qty <i>(Each)</i>	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Complete Round	0.36	78,878,800	28.396	-	-	-	0.48	142,170	0.068	0.54	872,537	0.471	-	-	-	0.54	872,537	0.471
<i>Subtotal: Recurring Cost</i>	-	-	28.396	-	-	-	-	-	0.068	-	-	0.471	-	-	-	-	-	0.471
<i>Subtotal: Hardware Cost</i>	-	-	28.396	-	-	-	-	-	0.068	-	-	0.471	-	-	-	-	-	0.471
Support - Production Engineering Cost																		
Production Engineering	-	-	3.008	-	-	-	-	-	0.005	-	-	0.037	-	-	-	-	-	0.037
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	3.008	-	-	-	-	-	0.005	-	-	0.037	-	-	-	-	-	0.037
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.026	-	-	-	-	-	0.000	-	-	0.002	-	-	-	-	-	0.002
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.026	-	-	-	-	-	0.000	-	-	0.002	-	-	-	-	-	0.002
Gross/Weapon System Cost	-	-	31.431	-	-	-	-	-	0.073	-	-	0.510	-	-	-	-	-	0.510
Remarks: FY 2021 unit price increase is due to higher contractual pricing on the FY 2021 delivery order.																		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E95400 / CTG, 5.56mm Ball, M855A1 EPR, Clipped Mil Pack [AB57]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	820.474	6.519	11.164	6.479	-	6.479
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	820.474	6.519	11.164	6.479	-	6.479
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	820.474	6.519	11.164	6.479	-	6.479

(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																		
Complete Round(†)	-	-	805.336	0.34	15,706,674	5.340	0.43	22,614,390	9.756	0.46	12,818,798	5.897	-	-	-	0.46	12,818,798	5.897
BOX METAL M2A2(†)	11.07	67,773	0.750	14.07	18,691	0.263	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>806.086</i>	-	-	<i>5.603</i>	-	-	<i>9.756</i>	-	-	<i>5.897</i>	-	-	-	-	-	<i>5.897</i>
Subtotal: Hardware Cost	-	-	806.086	-	-	5.603	-	-	9.756	-	-	5.897	-	-	-	-	-	5.897
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.118	-	-	-	-	-	0.118	-	-	0.118	-	-	-	-	-	0.118
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	<i>0.118</i>	-	-	-	-	-	<i>0.118</i>	-	-	<i>0.118</i>	-	-	-	-	-	<i>0.118</i>
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	0.160	-	-	0.495	-	-	0.495	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	<i>0.160</i>	-	-	<i>0.495</i>	-	-	<i>0.495</i>	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	14.092	-	-	0.415	-	-	0.789	-	-	0.460	-	-	-	-	-	0.460
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>14.092</i>	-	-	<i>0.415</i>	-	-	<i>0.789</i>	-	-	<i>0.460</i>	-	-	-	-	-	<i>0.460</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.019	-	-	0.006	-	-	0.007	-	-	0.006	-	-	-	-	-	0.006
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.019</i>	-	-	<i>0.006</i>	-	-	<i>0.007</i>	-	-	<i>0.006</i>	-	-	-	-	-	<i>0.006</i>

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E95400 / CTG, 5.56mm Ball, M855A1 EPR, Clipped Mil Pack [AB57]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	820.474	-	-	6.519	-	-	11.164	-	-	6.479	-	-	-	-	-	6.479

Remarks:
Beginning in FY 2020, M2A2 metal boxes are no longer a separate component and will be part of the complete round.

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types				Item Number / Title [DODIC]: E95400 / CTG, 5.56mm Ball, M855A1 EPR, Clipped Mil Pack [AB57]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round ^(†)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2019	1,570,667	0.34	Y		
Complete Round ^(†)		2019	NORTHROP GRUMMAN INNVTN SYS / INDEPENDENCE, MO	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Nov 2019	14,136,007	0.34	Y		
Complete Round ^(†)		2020	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Oct 2020	2,261,439	0.32	Y		
Complete Round ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	20,352,951	0.32	Y		
Complete Round ^(†)		2021	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Oct 2021	1,922,820	0.46	Y		
Complete Round ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2021	10,895,978	0.46	Y		
BOX METAL M2A2		2019	BWAY CORPORATION / ATLANTA, GA	Option / FFP	ROCK ISLAND ARSENAL, IL	Aug 2019	Oct 2019	18,691	14.07	Y		

^(†) indicates the presence of a P-21

Remarks:
 FY 2019, FY 2020 and FY 2021 complete round is an average unit cost between two contractors.
 The Government will determine the quantity split between the two contractors in the year of execution.
 Olin is the operator / performer at Lake City Army Ammunition Plant (LCAAP) located in Independence, Missouri.

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

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E95400 / CTG, 5.56mm Ball, M855A1 EPR, Clipped Mil Pack [AB57]
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Cost Elements <i>(Units in Millions, * = < 500)</i>							Fiscal Year 2019														Fiscal Year 2020														BALANCE			
OC	MFR	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019														Calendar Year 2020																	
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP								
Complete Round																																						
1		2019	AF (+)	2.753	.000	2.753																																
1		2019	ARMY	1.571	.000	1.571																																
1		2019	MC (+)	1.339	.000	1.339																																
1		2019	NSOF (+)	.010	.000	.010																																
1		2019	Total	5.673	.000	5.673																																
2		2019	AF (+)	24.779	.000	24.779																																
2		2019	ARMY	14.136	.000	14.136																																
2		2019	MC (+)	12.054	.000	12.054																																
2		2019	NSOF (+)	.091	.000	.091																																
2		2019	Total	51.059	.000	51.059																																
1		2020	AF (+)	.174	.000	.174																																
1		2020	ARMY	2.261	.000	2.261																																
1		2020	MC (+)	1.234	.000	1.234																																
1		2020	NSOF (+)	.053	.000	.053																																
1		2020	Total	3.722	.000	3.722																																
3		2020	AF (+)	1.564	.000	1.564																																
3		2020	ARMY	20.353	.000	20.353																																
3		2020	MC (+)	11.105	.000	11.105																																
3		2020	NSOF (+)	.476	.000	.476																																
3		2020	Total	33.498	.000	33.498																																
1		2021	AF (+)	.157	.000	.157																																
1		2021	ARMY	1.923	.000	1.923																																
1		2021	MC (+)	1.567	.000	1.567																																
1		2021	NAVSEA (+)	.750	.000	.750																																
1		2021	Total	4.397	.000	4.397																																
3		2021	AF (+)	.888	.000	.888																																
3		2021	ARMY	10.896	.000	10.896																																
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP								

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Exhibit P-21, Production Schedule: PB 2021 Army	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
	Item Number / Title [DODIC]: E95400 / CTG, 5.56mm Ball, M855A1 EPR, Clipped Mil Pack [AB57]

Cost Elements (Units in Millions, * = < 500)						Fiscal Year 2019												Fiscal Year 2020												B A L A N C E			
O C C #	M F R Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 1 8	B A L D U E A S O F 1 O C T	Calendar Year 2019												Calendar Year 2020															
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
3	2021	MC (+)	8.881	.000	8.881																												
3	2021	NAVSEA (+)	4.250	.000	4.250																												4.250
3	2021	Total	24.915	.000	24.915																												24.915

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020									
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types										Item Number / Title [DODIC]: E95400 / CTG, 5.56mm Ball, M855A1 EPR, Clipped Mil Pack [AB57]				

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2021														Fiscal Year 2022										BALANCE						
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021														Calendar Year 2022															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P					
Complete Round																																				
1	2019		AF (+)	2.753	2.753	.000																													.000	
1	2019		ARMY	1.571	1.571	.000																													.000	
1	2019		MC (+)	1.339	1.339	.000																													.000	
1	2019		NSOF (+)	.010	.010	.000																													.000	
1	2019		Total	5.673	5.673	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
2	2019		AF (+)	24.779	20.262	4.517	2.065	1.226	1.226																										.000	
2	2019		ARMY	14.136	12.958	1.178	1.178	-	-																										.000	
2	2019		MC (+)	12.054	11.049	1.004	1.004	-	-																										.000	
2	2019		NSOF (+)	.091	.083	.008	.008	-	-																										.000	
2	2019		Total	51.059	44.352	6.707	4.255	1.226	1.226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000		
1	2020		AF (+)	.174	.000	.174	.014	.014	.014	.014	.014	.014	.014	.014	.014	.014																			.000	
1	2020		ARMY	2.261	.000	2.261	.239	.239	.239	.239	.239	.239	.239	.239	.109	-	-																		.000	
1	2020		MC (+)	1.234	.000	1.234	.103	.103	.103	.103	.103	.103	.103	.103	.103	.103																			.000	
1	2020		NSOF (+)	.053	.000	.053	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004																			.000	
1	2020		Total	3.722	.000	3.722	.361	.361	.361	.361	.361	.361	.361	.361	.230	.122	.122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
3	2020		AF (+)	1.564	.000	1.564	-	-	-	-	-	.130	.130	.130	.130	.130	.130	.130	.130	.130																.000
3	2020		ARMY	20.353	.000	20.353	-	-	-	-	-	2.153	2.153	2.153	2.153	2.153	2.153	2.153	2.153	2.153	2.153	2.153	.978	-	-										.000	
3	2020		MC (+)	11.105	.000	11.105	-	-	-	-	-	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925										.000	
3	2020		NSOF (+)	.476	.000	.476	-	-	-	-	-	.040	.040	.040	.040	.040	.040	.040	.040	.040	.040	.040	.040	.040	.040										.000	
3	2020		Total	33.498	.000	33.498	-	-	-	-	-	3.248	3.248	3.248	3.248	3.248	3.248	3.248	3.248	3.248	3.248	3.248	2.074	1.095	1.095	-	-	-	-	-	-	-	-	.000		
1	2021		AF (+)	.157	.000	.157						A -	-	-	-	-	-	-	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.000	
1	2021		ARMY	1.923	.000	1.923						A -	-	-	-	-	-	-	.160	.160	.160	.160	.160	.160	.160	.160	.160	.160	.160	.160	.160	.160	.160	.160	.000	
1	2021		MC (+)	1.567	.000	1.567						A -	-	-	-	-	-	-	.131	.131	.131	.131	.131	.131	.131	.131	.131	.131	.131	.131	.131	.131	.131	.131	.000	
1	2021		NAVSEA (+)	.750	.000	.750						A -	-	-	-	-	-	-	.062	.062	.062	.062	.062	.062	.062	.062	.062	.062	.062	.062	.062	.062	.062	.062	.000	
1	2021		Total	4.397	.000	4.397						-	-	-	-	-	-	-	.366	.366	.366	.366	.366	.366	.366	.366	.366	.366	.366	.366	.366	.366	.366	.366	.000	
3	2021		AF (+)	.888	.000	.888						A -	-	-	-	-	-	.074	.074	.074	.074	.074	.074	.074	.074	.074	.074	.074	.074	.074	.074	.074	.074	.074	.000	
3	2021		ARMY	10.896	.000	10.896						A -	-	-	-	-	-	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.000	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
		Item Number / Title [DODIC]: E95400 / CTG, 5.56mm Ball, M855A1 EPR, Clipped Mil Pack [AB57]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	OLIN CORP WINCHESTER DIVISION - EAST ALTON, IL	1,680	5,000,000	19,500,000	6	6	12	18	6	6	7	13
2	NORTHROP GRUMMAN INNVTN SYS - INDEPENDENCE, MO	1,680	19,400,000	67,500,000	6	6	12	18	6	6	7	13
3	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	1,680	19,400,000	67,500,000	6	6	12	18	6	6	6	12

(*) 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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E95700 / CTG, 5.56mm Ball, M855A1 Clipped Bulk Pack [AB77]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	167.070	17.915	20.239	33.035	-	33.035
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	167.070	17.915	20.239	33.035	-	33.035
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	167.070	17.915	20.239	33.035	-	33.035

(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																		
COMPLETE ROUND ^(†)	-	-	157.272	0.27	56,184,265	15.170	0.38	47,380,577	18.052	0.43	70,322,389	30.239	-	-	-	0.43	70,322,389	30.239
BOX METAL M2A2 ^(†)	11.69	153,510	1.795	14.25	62,365	0.889	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>159.067</i>	-	-	<i>16.058</i>	-	-	<i>18.052</i>	-	-	<i>30.239</i>	-	-	-	-	-	<i>30.239</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>159.067</i>	-	-	<i>16.058</i>	-	-	<i>18.052</i>	-	-	<i>30.239</i>	-	-	-	-	-	<i>30.239</i>
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.095	-	-	0.175	-	-	0.175	-	-	0.175	-	-	-	-	-	0.175
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	<i>0.095</i>	-	-	<i>0.175</i>	-	-	<i>0.175</i>	-	-	<i>0.175</i>	-	-	-	-	-	<i>0.175</i>
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	-	-	-	0.095	-	-	0.270	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	<i>0.095</i>	-	-	<i>0.270</i>	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	7.873	-	-	1.579	-	-	1.735	-	-	2.609	-	-	-	-	-	2.609
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>7.873</i>	-	-	<i>1.579</i>	-	-	<i>1.735</i>	-	-	<i>2.609</i>	-	-	-	-	-	<i>2.609</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.035	-	-	0.008	-	-	0.008	-	-	0.012	-	-	-	-	-	0.012

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E95700 / CTG, 5.56mm Ball, M855A1 Clipped Bulk Pack [AB77]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.035	-	-	0.008	-	-	0.008	-	-	0.012	-	-	-	-	-	0.012
Gross/Weapon System Cost	-	-	167.070	-	-	17.915	-	-	20.239	-	-	33.035	-	-	-	-	-	33.035

Remarks:

Beginning in FY 2020, M2A2 metal boxes are no longer a separate component and will be part of the complete round.

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types				Item Number / Title [DODIC]: E95700 / CTG, 5.56mm Ball, M855A1 Clipped Bulk Pack [AB77]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNVTN SYS / INDEPENDENCE, MO	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Nov 2019	56,184,265	0.27	Y		
COMPLETE ROUND ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	47,380,577	0.38	Y		
COMPLETE ROUND ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2021	70,322,389	0.43	Y		
BOX METAL M2A2		2019	BWAY CORPORATION / ATLANTA, GA	Option / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Jul 2019	62,365	14.25	Y		

^(†) indicates the presence of a P-21

Remarks:

Olin is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-21, Production Schedule: PB 2021 Army					Date: February 2020									
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30					P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types					Item Number / Title [DODIC]: E95700 / CTG, 5.56mm Ball, M855A1 Clipped Bulk Pack [AB77]				

Cost Elements <i>(Units in Millions, * = < 500)</i>							Fiscal Year 2019											Fiscal Year 2020											B A L A N C E															
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019											Calendar Year 2020																										
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L		A U G	S E P													
COMPLETE ROUND																																												
1		2019	ARMY	56.184	.000	56.184																							4.682	4.682	4.682	4.682	4.682	4.682	4.682	4.682	4.682	4.682	4.682		4.682			
2		2020	ARMY	47.381	.000	47.381																																						47.381
2		2021	ARMY	70.322	.000	70.322																																						70.322

O C C O	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P
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Exhibit P-21, Production Schedule: PB 2021 Army				Date: February 2020							
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30				P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types				Item Number / Title [DODIC]: E95700 / CTG, 5.56mm Ball, M855A1 Clipped Bulk Pack [AB77]			

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2021													Fiscal Year 2022													B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 0	BAL D U E A S O F 1 O C T	Calendar Year 2021													Calendar Year 2022													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
COMPLETE ROUND																																	
	1	2019	ARMY	56.184	51.502	4.682	4.682																								.000		
	2	2020	ARMY	47.381	.000	47.381	-	-	-	-	-	4.591	4.591	4.591	4.591	4.591	4.591	4.591	4.591	4.591	4.591	1.474									.000		
	2	2021	ARMY	70.322	.000	70.322						A	-	-	-	-	-	5.860	5.860	5.860	5.860	5.860	5.860	5.860	5.860	5.860	5.860	5.860	5.860	.000			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
		Item Number / Title [DODIC]: E95700 / CTG, 5.56mm Ball, M855A1 Clipped Bulk Pack [AB77]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMMAN INNVTN SYS - INDEPENDENCE, MO	900	19,400,000	67,500,000	6	6	12	18	6	6	7	13
2	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	900	19,400,000	67,500,000	6	6	12	18	6	6	6	12

"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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E96110 / CTG, 5.56mm Marking, M1042 (Blue) [AB09]

ID Code (A=Service Ready, B=Not Service Ready) : A				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)			25.254	-	-	1.725	-	1.725
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			25.254	-	-	1.725	-	1.725
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			25.254	-	-	1.725	-	1.725
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>								
Initial Spares (\$ in Millions)			-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
Complete Round	0.71	32,053,125	22.758	-	-	-	-	-	-	0.88	1,860,942	1.638	-	-	-	0.88	1,860,942	1.638
<i>Subtotal: Recurring Cost</i>	-	-	22.758	-	-	-	-	-	-	-	-	1.638	-	-	-	-	-	1.638
<i>Subtotal: Hardware Cost</i>	-	-	22.758	-	-	-	-	-	-	-	-	1.638	-	-	-	-	-	1.638
Support - Production Engineering Cost																		
Production Engineering	-	-	2.496	-	-	-	-	-	-	-	-	0.087	-	-	-	-	-	0.087
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	2.496	-	-	-	-	-	-	-	-	0.087	-	-	-	-	-	0.087
Gross/Weapon System Cost	-	-	25.254	-	-	-	-	-	-	-	-	1.725	-	-	-	-	-	1.725

Remarks:
Unit price increase from prior years to FY 2021 due to transition to lead free version.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E96111 / CTG, 5.56mm Marking, M1042 (Red) [AB10]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	11.842	0.993	1.270	1.268	-	1.268
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	11.842	0.993	1.270	1.268	-	1.268
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	11.842	0.993	1.270	1.268	-	1.268

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

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

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

Cost Elements	Prior Years			FY 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																		
Complete Round	0.71	15,694,227	11.143	0.62	1,548,705	0.960	0.73	1,633,575	1.193	0.88	1,367,918	1.204	-	-	-	0.88	1,367,918	1.204
<i>Subtotal: Recurring Cost</i>	-	-	<i>11.143</i>	-	-	<i>0.960</i>	-	-	<i>1.193</i>	-	-	<i>1.204</i>	-	-	-	-	-	<i>1.204</i>
Subtotal: Hardware Cost	-	-	11.143	-	-	0.960	-	-	1.193	-	-	1.204	-	-	-	-	-	1.204
Support - Production Engineering Cost																		
Production Engineering	-	-	0.699	-	-	0.033	-	-	0.077	-	-	0.064	-	-	-	-	-	0.064
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.699</i>	-	-	<i>0.033</i>	-	-	<i>0.077</i>	-	-	<i>0.064</i>	-	-	-	-	-	<i>0.064</i>
Gross/Weapon System Cost	-	-	11.842	-	-	0.993	-	-	1.270	-	-	1.268	-	-	-	-	-	1.268

Remarks:

Unit price increase from FY 2020 to FY 2021 due to transition to lead free version.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types	Item Number / Title [DODIC]: E96120 / CTG, 5.56mm Marking, M1071 (Blue) Linked f/SAW [AB16]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	4.396	0.778	0.707	0.806	-	0.806
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	4.396	0.778	0.707	0.806	-	0.806
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	4.396	0.778	0.707	0.806	-	0.806

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

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

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

Cost Elements	Prior Years			FY 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																		
Complete Round	0.75	3,797,519	2.848	0.73	1,029,471	0.752	1.01	663,366	0.670	1.11	691,682	0.768	-	-	-	1.11	691,682	0.768
<i>Subtotal: Recurring Cost</i>	-	-	2.848	-	-	0.752	-	-	0.670	-	-	0.768	-	-	-	-	-	0.768
<i>Subtotal: Hardware Cost</i>	-	-	2.848	-	-	0.752	-	-	0.670	-	-	0.768	-	-	-	-	-	0.768
Support - Production Engineering Cost																		
Production Engineering	-	-	1.548	-	-	0.026	-	-	0.037	-	-	0.038	-	-	-	-	-	0.038
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.548	-	-	0.026	-	-	0.037	-	-	0.038	-	-	-	-	-	0.038
Gross/Weapon System Cost	-	-	4.396	-	-	0.778	-	-	0.707	-	-	0.806	-	-	-	-	-	0.806

Remarks:

Unit price increase from FY 2020 to FY 2021 due to transition to lead free version.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
		Item Number / Title [DODIC]: E96121 / CTG, 5.56mm Marking, M1071 (Red) Linked f/SAW [AB17]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	4.055	0.622	0.512	0.239	-	0.239
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	4.055	0.622	0.512	0.239	-	0.239
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	4.055	0.622	0.512	0.239	-	0.239

(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																		
Complete Round	0.77	4,494,490	3.461	0.73	823,047	0.601	1.01	490,099	0.495	1.11	205,090	0.228	-	-	-	1.11	205,090	0.228
<i>Subtotal: Recurring Cost</i>	-	-	3.461	-	-	0.601	-	-	0.495	-	-	0.228	-	-	-	-	-	0.228
<i>Subtotal: Hardware Cost</i>	-	-	3.461	-	-	0.601	-	-	0.495	-	-	0.228	-	-	-	-	-	0.228
Support - Production Engineering Cost																		
Production Engineering	-	-	0.594	-	-	0.021	-	-	0.017	-	-	0.011	-	-	-	-	-	0.011
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.594	-	-	0.021	-	-	0.017	-	-	0.011	-	-	-	-	-	0.011
Gross/Weapon System Cost	-	-	4.055	-	-	0.622	-	-	0.512	-	-	0.239	-	-	-	-	-	0.239

Remarks:

Unit price increase from FY 2020 to FY 2021 due to transition to lead free version.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
		Item Number / Title [DODIC]: E96125 / Ctg, 5.56mm, Short Range Training, M1037, snl rd [AB67]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	3.714	2.617	2.761	2.814	-	2.814
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	3.714	2.617	2.761	2.814	-	2.814
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	3.714	2.617	2.761	2.814	-	2.814

(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																		
COMPLETE ROUND	1.05	3,066,945	3.220	1.02	2,469,518	2.519	1.21	2,172,256	2.623	1.24	2,161,030	2.684	-	-	-	1.24	2,161,030	2.684
Subtotal: Recurring Cost	-	-	3.220	-	-	2.519	-	-	2.623	-	-	2.684	-	-	-	-	-	2.684
Subtotal: Hardware Cost	-	-	3.220	-	-	2.519	-	-	2.623	-	-	2.684	-	-	-	-	-	2.684
Support - Production Engineering Cost																		
Production Engineering	-	-	0.494	-	-	0.098	-	-	0.138	-	-	0.130	-	-	-	-	-	0.130
Subtotal: Support - Production Engineering Cost	-	-	0.494	-	-	0.098	-	-	0.138	-	-	0.130	-	-	-	-	-	0.130
Gross/Weapon System Cost	-	-	3.714	-	-	2.617	-	-	2.761	-	-	2.814	-	-	-	-	-	2.814

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	695.304	86.239	112.043	109.933	0.040	109.973	123.243	131.236	126.589	123.621	-	1,508.248
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	695.304	86.239	112.043	109.933	0.040	109.973	123.243	131.236	126.589	123.621	-	1,508.248
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	695.304	86.239	112.043	109.933	0.040	109.973	123.243	131.236	126.589	123.621	-	1,508.248

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

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

Description:

This budget line includes 7.62mm ALL TYPES.

(E01902) 7.62mm Blank, M82 w/M13 Link is linked in 100 round belts for training use in M240 family of machine weapons. The M82 is a blank cartridge (no projectile) designed to mimic the sound and function of combat ammunition with the use of a blank firing adaptor. It can be identified by its long neck and rosette crimped mouth. It is intended for training use only and not suitable for combat. This item is Code A, approved for service use.

(E02002) 7.62mm 4 Ball M80/1 Tracer M62, w/M13 Link consists of M80 Ball and M62 Tracer rounds linked four-to-one and is used in the M240 Machine Gun. It is intended for use against personnel and non-armored targets. Bullet consisting of copper alloy clad steel jacket with lead antimony slug. This item is Code A, approved for service use.

(E02003) 7.62mm Ball M80 Linked/M13 is for use in the in the M60 and M240 Machine Gun. The bullet consists of a gilding-metal jacket with a lead-antimony slug. The cartridge case is brass and the bullet is unpainted. This item is Code A, approved for service use.

(E02011) 7.62mm M80A1 Enhanced Performance Round (EPR) Ball is linked in a 100 cartridge belt with the M13 link for use in the M240 Machine Gun family of weapons. The M80A1 Ball Cartridge has a steel penetrator and non-lead slug surrounded by a copper jacket. They are intended for use against personnel and light-armored targets. This Item is Code A, approved for service use.

(E02012) 7.62mm M80A1 Enhanced Performance Round (EPR) Ball Cartridges and M62A1 Tracer Cartridges are linked in a 100 cartridge belt in a 4 Ball/1 Tracer configuration with the M13 link for use in the M240 Machine Gun family of weapons. The M80A1 Ball Cartridge has a steel penetrator and a non-lead slug surrounded by a copper jacket. The M62A1 Tracer Cartridge also contains a lead free projectile and provides a visible red light signature through its trajectory and is a ballistic match with the M80A1 trajectory. They are intended for use against personnel and light-armored targets. This Item is Code A, approved for service use.

(E02015) 7.62mm M82A1 Blank Bottleneck Cartridge has a bottleneck design with a paper wad closure and a red tip. The M82A1 is used in sniper training and salute ceremonies in M14 rifles without being equipped with a firing adapter. This Item is Code A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E02501) 7.62mm, Single Round (NPF DDI), M63A1 Dummy, Drilled and Inert ammunition (DDI) is an inert dummy cartridge used as an ammunition training aid and for weapon familiarization. The 7.62mm, M63A1 DDI ammunition is both nickel plated and fluted (NPF) for easy recognition and to distinguish the dummy ammunition visually from tactical ammunition. This Item is Code A, approved for service use.</p> <p>(E89100) 7.62mm M118 Long Range cartridge is a match grade design intended for long range accuracy and is packed in a 20 cartridge cardboard carton and intended for Sniper use in the M40, M110, and MK21 Rifles. It is intended for use against personnel and non-armored targets. This Item is Code A, approved for service use.</p> <p>(F57510) 7.62mm XM1158 Advanced Armor-Piercing (ADVAP) Ball Cartridges and M62A1 Tracer Cartridges are linked in a 100 cartridge belt in a 4 Ball/1 Tracer configuration with the M13 link for use in the M240 Machine Gun family of weapons. The XM1158 Ball Cartridge uses projectiles with an exposed black metal tip surrounded by a copper jacket. The M62A1 Tracer Cartridge also contains a lead free projectile and provides a visible red light signature through its trajectory and is a ballistic match with the XM1158 trajectory. This item is intended for use against a broad spectrum of hard targets. This Item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/
Medium Cal Ammunition **P-1 Line Item Number / Title:**
0612E02000 / CTG, 7.62MM, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E01902 / CTG, 7.62mm Blank, M82 w/M13 Link [A111]	P-5a, P-21	A		- / 355.909	- / 6.832	- / 8.199	- / 11.043	- / -	- / 11.043
P-5	E02011 / CTG, 7.62mm Ball M80A1 LeadFree, w/M13 Link [AB79]	P-5a, P-21	A		- / 48.975	- / 13.619	- / 18.832	- / 12.482	- / -	- / 12.482
P-5	E02012 / CTG, 7.62mm 4 Ball M80A1/1 Trcr M62A1 LeadFree [AB86]	P-5a, P-21	A		- / 247.554	- / 42.903	- / 59.787	- / 62.610	- / -	- / 62.610
P-5	E02015 / CTG, 7.62mm Bottleneck Blank, M82A1, Single [AB72]		A		- / 2.011	- / -	- / 0.492	- / -	- / -	- / -
P-5	E02501 / CTG, 7.62mm, Single Round (NPF DDI), M63A1 [AB47]		A		- / 0.990	- / 0.040	- / 0.040	- / -	- / 0.040	- / 0.040
P-5	E89100 / CTG, 7.62mm Special Ball, M118 Long Range [AA11]		A		- / 39.865	- / 2.145	- / 3.680	- / 0.838	- / -	- / 0.838
P-5	F57510 / CTG, 7.62mm Advanced Armor Piercing, XM1158	P-5a, P-21	A		- / -	- / 20.700	- / 21.013	- / 22.960	- / -	- / 22.960
P-40	Total Gross/Weapon System Cost				- / 695.304	- / 86.239	- / 112.043	- / 109.933	- / 0.040	- / 109.973

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Overseas Contingency Operations (OCO) procurement dollars in the amount of \$109.973 million supports the procurement of 91.054 million cartridges in support of the National Defense Strategy and Combatant Command (COCOM) requirements. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of 7.62MM ALL TYPES when possible.

FY 2021 Base dollars in the amount of \$0.040 million support the enduring COCOM requirement for procurement of 0.044 million CTG, 7.62mm, Single Round (NPF DDI), M63A1 to deter potential adversaries and support the European Deterrence Initiative.

(E01902) 7.62mm Blank, M82 w/M13 Link is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. The FY 2021 Base procurement dollars in the amount of \$11.043 million supports the procurement of 19.125 million Blank M82 cartridges.
Type classification date: 1960

(E02002) 7.62mm 4 Ball M80/1 Tracer M62, w/M13 Link is a training standard item used in training and combat. There is no FY 2021 funding request.
Type classification date: 1962

(E02003) 7.62mm Ball M80 Linked/M13 is a training standard item used in training and combat. There is no FY 2021 funding request.
Type Classification date: 1962

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E02011) 7.62mm M80A1 Enhanced Performance Round (EPR) Lead Free Slug (LFS) Ball Cartridge is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. The FY 2021 Base procurement dollars in the amount of \$12.482 million supports the procurement of 12.432 million 7.62mm M80A1 1 Ball (EPR) (LFS) Cartridges. Type classification date: 1962</p> <p>(E02012) 7.62mm M80A1 Enhanced Performance Round (EPR) 4 Ball /1 Trace, Lead Free Slug (LFS) Cartridge /M62A1 LFS Tracer Cartridge is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. The FY 2021 Base procurement dollars in the amount of \$62.610 million supports the procurement of 57.344 million 7.62mm M80A1 4 Ball/1Trace (EPR) (LFS) Cartridges. Type classification date: 1962</p> <p>(E02015) 7.62mm M82A1 Blank Bottlenose Cartridge is a training unique item not used in combat. There is no FY 2021 funding request. Type classification date: 2012</p> <p>(E02501) 7.62mm Single Round (NPF DDI) M63A1 Round is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Overseas Contingency Operations (OCO) procurement dollars in the amount of \$0.040 million support the enduring COCOM requirement for procurement of 0.044 million M63A1 7.62mm Single Cartridges to deter potential adversaries and support the European Deterrence Initiative. Type classification date: 1982</p> <p>(E89100) 7.62mm M118 Long Range Round is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. The FY 2021 Base procurement dollars in the amount of \$0.838 million supports the procurement of 0.793 million 7.62mm M118 Long Range Cartridges. Type classification date: Prior to 1997</p> <p>(F57510) 7.62mm XM1158 Advanced Armor-Piercing (ADVAP) Ball Cartridges and M62A1 Tracer Cartridges are linked in a 100 cartridge belt in a 4 Ball/1 Tracer configuration with the M13 link. This is a war reserve item used in combat. The FY 2021 request builds a war reserve inventory in accordance with the Army's procurement goals. The FY 2021 Base procurement in the amount of \$22.960 million supports the procurement of 1.316 million 7.62mm XM1158 Advanced Armor-Piercing (ADVAP) Ball Cartridges 4Ball/1 M62A1 Tracer linked Cartridges. Type classification date: 4th Quarter 2019</p>		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types	Item Number / Title [DODIC]: E01902 / CTG, 7.62mm Blank, M82 w/ M13 Link [A111]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	355.909	6.832	8.199	11.043	-	11.043
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	355.909	6.832	8.199	11.043	-	11.043
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	355.909	6.832	8.199	11.043	-	11.043

(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																		
COMPLETE ROUND ^(†)	0.40	885,364K	354.146	0.35	17,698,788	6.195	0.50	14,808,846	7.404	0.52	19,124,781	9.945	-	-	-	0.52	19,124,781	9.945
Subtotal: Recurring Cost	-	-	354.146	-	-	6.195	-	-	7.404	-	-	9.945	-	-	-	-	-	9.945
Subtotal: Hardware Cost	-	-	354.146	-	-	6.195	-	-	7.404	-	-	9.945	-	-	-	-	-	9.945
Support - Production Engineering Cost																		
Production Engineering	-	-	1.764	-	-	0.626	-	-	0.783	-	-	1.090	-	-	-	-	-	1.090
Subtotal: Support - Production Engineering Cost	-	-	1.764	-	-	0.626	-	-	0.783	-	-	1.090	-	-	-	-	-	1.090
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.012	-	-	0.011	-	-	0.008	-	-	-	-	-	0.008
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	0.012	-	-	0.011	-	-	0.008	-	-	-	-	-	0.008
Gross/Weapon System Cost	-	-	355.909	-	-	6.832	-	-	8.199	-	-	11.043	-	-	-	-	-	11.043

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types				Item Number / Title [DODIC]: E01902 / CTG, 7.62mm Blank, M82 w/ M13 Link [A111]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNVTN SYS / INDEPENDENCE, MO	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	17,698,788	0.35	Y		
COMPLETE ROUND ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	14,808,846	0.50	Y		
COMPLETE ROUND ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Oct 2021	19,124,781	0.52	Y		

^(†) indicates the presence of a P-21

Remarks:

OLIN is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types	Item Number / Title [DODIC]: E01902 / CTG, 7.62mm Blank, M82 w/ M13 Link [A111]

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2019												Fiscal Year 2020												BALANCE
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020											
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

COMPLETE ROUND

Prior Years Deliveries: 885363750

	2	2019	ARMY	17.699	.000	17.699				A -																						1.475	1.475	1.475	1.475	1.475	1.475	1.475	7.374
	1	2020	ARMY	14.809	.000	14.809																										A -	-	-	-	-	-	-	14.809
	1	2021	ARMY	19.125	.000	19.125																																19.125	

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types										Item Number / Title [DODIC]: E01902 / CTG, 7.62mm Blank, M82 w/ M13 Link [A111]									

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2021															Fiscal Year 2022															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T O 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021															Calendar Year 2022															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
COMPLETE ROUND																																					
Prior Years Deliveries: 885363750																																					
	2	2019	ARMY	17.699	10.324	7.374	1.475	1.475	1.475	1.475	1.475																							.000			
	1	2020	ARMY	14.809	.000	14.809	-	-	-	-	-	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	1.234	.000			
	1	2021	ARMY	19.125	.000	19.125						A	-	-	-	-	-	-	-	1.594	1.594	1.594	1.594	1.594	1.594	1.594	1.594	1.594	1.594	1.594	1.594	1.594	.000				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types
		Item Number / Title [DODIC]: E01902 / CTG, 7.62mm Blank, M82 w/ M13 Link [A111]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	800	5,160,000	17,770,000	6	6	12	18	6	6	7	13
2	NORTHROP GRUMMAN INNVTN SYS - INDEPENDENCE, MO	800	5,160,000	17,770,000	6	6	7	13	6	6	7	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types	Item Number / Title [DODIC]: E02011 / CTG, 7.62mm Ball M80A1 LeadFree, w/M13 Link [AB79]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	48.975	13.619	18.832	12.482	-	12.482
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	48.975	13.619	18.832	12.482	-	12.482
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	48.975	13.619	18.832	12.482	-	12.482

(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																		
COMPLETE ROUND ^(†)	0.79	59,252,138	46.807	0.81	15,503,821	12.558	0.91	18,780,463	17.090	0.92	12,431,936	11.437	-	-	-	0.92	12,431,936	11.437
Subtotal: Recurring Cost	-	-	46.809	-	-	12.558	-	-	17.090	-	-	11.437	-	-	-	-	-	11.437
Subtotal: Hardware Cost	-	-	46.809	-	-	12.558	-	-	17.090	-	-	11.437	-	-	-	-	-	11.437
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	-	-	-	0.115	-	-	-	-	-	0.115
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	-	-	-	0.115	-	-	-	-	-	0.115
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	-	-	-	0.400	-	-	0.392	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	0.400	-	-	0.392	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	2.141	-	-	0.657	-	-	1.341	-	-	0.921	-	-	-	-	-	0.921
Subtotal: Support - Production Engineering Cost	-	-	2.141	-	-	0.657	-	-	1.341	-	-	0.921	-	-	-	-	-	0.921
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.025	-	-	0.004	-	-	0.008	-	-	0.009	-	-	-	-	-	0.009
Subtotal: Support - Quality Assurance Cost	-	-	0.025	-	-	0.004	-	-	0.008	-	-	0.009	-	-	-	-	-	0.009

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types	Item Number / Title [DODIC]: E02011 / CTG, 7.62mm Ball M80A1 LeadFree, w/M13 Link [AB79]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	48.975	-	-	13.619	-	-	18.832	-	-	12.482	-	-	-	-	-	12.482

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types				Item Number / Title [DODIC]: E02011 / CTG, 7.62mm Ball M80A1 LeadFree, w/M13 Link [AB79]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Jan 2019	Aug 2019	15,503,821	0.81	Y		
COMPLETE ROUND ^(†)		2020	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Oct 2020	18,780,463	0.91	Y		
COMPLETE ROUND ^(†)		2021	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Oct 2021	12,431,936	0.92	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types										Item Number / Title [DODIC]: E02011 / CTG, 7.62mm Ball M80A1 LeadFree, w/M13 Link [AB79]									

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2019															Fiscal Year 2020															B A L A N C E			
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 8	BAL D U E A S O F 1 O C T	Calendar Year 2019															Calendar Year 2020																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P								
COMPLETE ROUND																																						
Prior Years Deliveries: 59252138																																						
	1	2019	ARMY	15.504	.000	15.504				A -	-	-	-	-	-	-	-	-	-	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	.000
	1	2020	ARMY	18.780	.000	18.780																																18.780
	1	2021	ARMY	12.432	.000	12.432																																12.432
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P								

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Exhibit P-21, Production Schedule: PB 2021 Army													Date: February 2020													
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30						P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types						Item Number / Title [DODIC]: E02011 / CTG, 7.62mm Ball M80A1 LeadFree, w/M13 Link [AB79]														

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2021														Fiscal Year 2022														B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 0	BAL D U E A S O F 1 O C T	Calendar Year 2021														Calendar Year 2022														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

COMPLETE ROUND

Prior Years Deliveries: 59252138

1	2019	ARMY	15.504	15.504	.000																											.000
1	2020	ARMY	18.780	.000	18.780	1.565	1.565	1.565	1.565	1.565	1.565	1.565	1.565	1.565	1.565	1.565											.000					
1	2021	ARMY	12.432	.000	12.432						A	-	-	-	-	-	1.036	1.036	1.036	1.036	1.036	1.036	1.036	1.036	1.036	1.036	1.036	1.036	1.036	.000		
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types
		Item Number / Title [DODIC]: E02011 / CTG, 7.62mm Ball M80A1 LeadFree, w/M13 Link [AB79]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	OLIN CORP WINCHESTER DIVISION - EAST ALTON, IL	500,000	1,500,000	3,000,000	6	6	12	18	6	6	7	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types	Item Number / Title [DODIC]: E02012 / CTG, 7.62mm 4 Ball M80A1/1 Trcr M62A1 LeadFree [AB86]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	247.554	42.903	59.787	62.610	-	62.610
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	247.554	42.903	59.787	62.610	-	62.610
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	247.554	42.903	59.787	62.610	-	62.610

(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																		
COMPLETE ROUND ^(†)	1.09	213,330K	232.530	0.91	43,381,932	39.478	0.99	55,938,890	55.380	1.01	57,343,766	57.917	-	-	-	1.01	57,343,766	57.917
Subtotal: Recurring Cost	-	-	232.530	-	-	39.478	-	-	55.380	-	-	57.917	-	-	-	-	-	57.917
Subtotal: Hardware Cost	-	-	232.530	-	-	39.478	-	-	55.380	-	-	57.917	-	-	-	-	-	57.917
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.185	-	-	0.123	-	-	0.115	-	-	0.115	-	-	-	-	-	0.115
Subtotal: Support - Acceptance Testing Cost	-	-	0.185	-	-	0.123	-	-	0.115	-	-	0.115	-	-	-	-	-	0.115
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	-	-	-	0.147	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Engineering Change Proposals Cost	-	-	-	-	-	0.147	-	-	-	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	0.700	-	-	0.400	-	-	0.585	-	-	0.105	-	-	-	-	-	0.105
Subtotal: Support - Product Improvement Cost	-	-	0.700	-	-	0.400	-	-	0.585	-	-	0.105	-	-	-	-	-	0.105
Support - Production Engineering Cost																		
Production Engineering	-	-	14.121	-	-	2.739	-	-	3.692	-	-	4.452	-	-	-	-	-	4.452

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types	Item Number / Title [DODIC]: E02012 / CTG, 7.62mm 4 Ball M80A1/1 Trcr M62A1 LeadFree [AB86]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	14.121	-	-	2.739	-	-	3.692	-	-	4.452	-	-	-	-	-	4.452
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.017	-	-	0.017	-	-	0.016	-	-	0.021	-	-	-	-	-	0.021
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.017	-	-	0.017	-	-	0.016	-	-	0.021	-	-	-	-	-	0.021
Gross/Weapon System Cost	-	-	247.554	-	-	42.903	-	-	59.787	-	-	62.610	-	-	-	-	-	62.610

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types				Item Number / Title [DODIC]: E02012 / CTG, 7.62mm 4 Ball M80A1/1 Trcr M62A1 LeadFree [AB86]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Jan 2019	Dec 2019	21,690,966	0.91	Y		
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNVTN SYS / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2019	21,690,966	0.91	Y		
COMPLETE ROUND ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Apr 2021	27,969,445	0.99	Y		
COMPLETE ROUND ^(†)		2020	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Oct 2020	27,969,445	0.99	Y		
COMPLETE ROUND ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Apr 2022	28,671,883	1.01	Y		
COMPLETE ROUND ^(†)		2021	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Oct 2021	28,671,883	1.01	Y		

^(†) indicates the presence of a P-21

Remarks:
 FY 2019 - FY 2021 complete round is an average unit cost between two contractors. The Government will determine the quantity split between the two contractors in the year of execution.
 OLIN is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types										Item Number / Title [DODIC]: E02012 / CTG, 7.62mm 4 Ball M80A1/1 Trcr M62A1 LeadFree [AB86]									

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2019													Fiscal Year 2020													BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019													Calendar Year 2020													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
COMPLETE ROUND																																	
Prior Years Deliveries: 213330489																																	
	2	2019	ARMY	21.691	.000	21.691				A -	-	-	-	-	-	-	-	-	-	-	1.817	1.817	1.817	1.817	1.817	1.817	1.817	1.817	1.817	1.817	1.816	3.525	
	2	2019	NSOF (+)	.065	.000	.065			A -	-	-	-	-	-	-	-	-	-	-	-	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.000	
	2	2019	Total	21.756	.000	21.756			-	-	-	-	-	-	-	-	-	-	-	-	1.823	1.823	1.823	1.823	1.823	1.823	1.823	1.823	1.823	1.823	3.525		
	3	2019	ARMY	21.691	.000	21.691					A -	-	-	-	-	-	-	1.808	1.808	1.808	1.808	1.808	1.808	1.808	1.808	1.808	1.808	1.808	1.808	1.808	.000		
	3	2019	NSOF (+)	.065	.000	.065					A -	-	-	-	-	-	-	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.000		
	3	2019	Total	21.756	.000	21.756			-	-	-	-	-	-	-	-	-	1.813	1.813	1.813	1.813	1.813	1.813	1.813	1.813	1.813	1.813	1.813	1.813	.000			
	1	2020	ARMY	27.969	.000	27.969																									27.969		
	2	2020	ARMY	27.969	.000	27.969																									27.969		
	1	2021	ARMY	28.672	.000	28.672																									28.672		
	2	2021	ARMY	28.672	.000	28.672																									28.672		

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Exhibit P-21, Production Schedule: PB 2021 Army														Date: February 2020																											
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30														P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types														Item Number / Title [DODIC]: E02012 / CTG, 7.62mm 4 Ball M80A1/1 Trcr M62A1 LeadFree [AB86]													

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2021														Fiscal Year 2022														BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021														Calendar Year 2022														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
Prior Years Deliveries: 213330489																																			
	2	2019	ARMY	21.691	18.165	3.525	1.816	1.709																										.000	
	2	2019	NSOF (+)	.065	.065	.000	-	-																									.000		
	2	2019	Total	21.756	18.231	3.525	1.816	1.709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
	3	2019	ARMY	21.691	21.691	.000																											.000		
	3	2019	NSOF (+)	.065	.065	.000																											.000		
	3	2019	Total	21.756	21.756	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
	1	2020	ARMY	27.969	.000	27.969	-	-	-	-	-	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	.000			
	2	2020	ARMY	27.969	.000	27.969	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	2.331	.000			
	1	2021	ARMY	28.672	.000	28.672						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.389	2.389	2.389	2.389	2.389	2.389	14.336		
	2	2021	ARMY	28.672	.000	28.672						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	2.389	2.389	2.389	2.389	2.389	2.389	2.389	.000		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types
Item Number / Title [DODIC]: E02012 / CTG, 7.62mm 4 Ball M80A1/1 Trcr M62A1 LeadFree [AB86]	

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2023												Fiscal Year 2024												B A L A N C E						
O C C O	M F R #	F Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 2 2	B A L D U E A S O F 1 O C T	Calendar Year 2023												Calendar Year 2024																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L		A U G	S E P				
COMPLETE ROUND																																			
Prior Years Deliveries: 213330489																																			
2		2019	ARMY	21.691	21.691	.000																													
2		2019	NSOF (+)	.065	.065	.000																													
2		2019	Total	21.756	21.756	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		.000
3		2019	ARMY	21.691	21.691	.000																													
3		2019	NSOF (+)	.065	.065	.000																													
3		2019	Total	21.756	21.756	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		.000
1		2020	ARMY	27.969	27.969	.000																													
2		2020	ARMY	27.969	27.969	.000																													
1		2021	ARMY	28.672	14.336	14.336	2.389	2.389	2.389	2.389	2.389	2.389																							
2		2021	ARMY	28.672	28.672	.000																													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types
		Item Number / Title [DODIC]: E02012 / CTG, 7.62mm 4 Ball M80A1/1 Trcr M62A1 LeadFree [AB86]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	800	5,000,000	10,000,000	6	6	13	19	6	6	13	19
2	OLIN CORP WINCHESTER DIVISION - EAST ALTON, IL	500,000	2,000,000	4,000,000	6	6	12	18	6	6	7	13
3	NORTHROP GRUMMAN INNVTN SYS - INDEPENDENCE, MO	800	5,000,000	10,000,000	6	6	13	19	6	6	13	19

(*) 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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types	Item Number / Title [DODIC]: E02015 / CTG, 7.62mm Bottlenose Blank, M82A1, Single [AB72]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2.011	-	0.492	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2.011	-	0.492	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2.011	-	0.492	-	-	-

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	0.70	2,701,938	1.891	-	-	-	1.33	343,937	0.457	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	1.891	-	-	-	-	-	0.457	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	1.891	-	-	-	-	-	0.457	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.120	-	-	-	-	-	0.035	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.120	-	-	-	-	-	0.035	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	2.011	-	-	-	-	-	0.492	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types	Item Number / Title [DODIC]: E02501 / CTG, 7.62mm, Single Round (NPF DDI), M63A1 [AB47]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	0.990	0.040	0.040	-	0.040	0.040
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.990	0.040	0.040	-	0.040	0.040
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.990	0.040	0.040	-	0.040	0.040

(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																		
LOAD, ASSEMBLE, PACK (LAP)	0.81	1,100,218	0.891	0.85	46,054	0.039	0.87	40,000	0.035	-	-	-	0.89	44,418	0.040	0.89	44,418	0.040
BOX METAL M2A2	12.91	2,360	0.030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	0.922	-	-	0.039	-	-	0.035	-	-	-	-	-	0.040	-	-	0.040
<i>Subtotal: Hardware Cost</i>	-	-	0.922	-	-	0.039	-	-	0.035	-	-	-	-	-	0.040	-	-	0.040
Support - Production Engineering Cost																		
Production Engineering	-	-	0.068	-	-	0.001	-	-	0.001	-	-	-	-	-	0.000	-	-	0.000
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.068	-	-	0.001	-	-	0.001	-	-	-	-	-	0.000	-	-	0.000
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	0.990	-	-	0.040	-	-	0.040	-	-	-	-	-	0.040	-	-	0.040

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types	Item Number / Title [DODIC]: E89100 / CTG, 7.62mm Special Ball, M118 Long Range [AA11]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	39.865	2.145	3.680	0.838	-	0.838
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	39.865	2.145	3.680	0.838	-	0.838
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	39.865	2.145	3.680	0.838	-	0.838

(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																		
COMPLETE ROUND	1.04	34,751,173	36.141	0.57	3,267,247	1.862	0.86	3,955,490	3.402	0.98	793,130	0.777	-	-	-	0.98	793,130	0.777
BOX METAL M2A2	11.73	4,110	0.048	14.07	7,103	0.100	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	36.189	-	-	1.962	-	-	3.402	-	-	0.777	-	-	-	-	-	0.777
<i>Subtotal: Hardware Cost</i>	-	-	36.189	-	-	1.962	-	-	3.402	-	-	0.777	-	-	-	-	-	0.777
Support - Production Engineering Cost																		
Production Engineering	-	-	3.663	-	-	0.180	-	-	0.275	-	-	0.057	-	-	-	-	-	0.057
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	3.663	-	-	0.180	-	-	0.275	-	-	0.057	-	-	-	-	-	0.057
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.013	-	-	0.003	-	-	0.003	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.013	-	-	0.003	-	-	0.003	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	39.865	-	-	2.145	-	-	3.680	-	-	0.838	-	-	-	-	-	0.838

Remarks:

Unit price increase from FY 2020 to FY 2021 due to the significant reduction in the number of rounds being ordered.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types	Item Number / Title [DODIC]: F57510 / CTG, 7.62mm Advanced Armor Piercing, XM1158

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	-	20.700	21.013	22.960	-	22.960
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	20.700	21.013	22.960	-	22.960
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	20.700	21.013	22.960	-	22.960

(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																		
COMPLETE ROUND ^(†)	-	-	-	18.92	1,040,929	19.694	17.53	1,066,920	18.703	16.14	1,315,931	21.239	-	-	-	16.14	1,315,931	21.239
Subtotal: Recurring Cost	-	-	-	-	-	19.694	-	-	18.703	-	-	21.239	-	-	-	-	-	21.239
Subtotal: Hardware Cost	-	-	-	-	-	19.694	-	-	18.703	-	-	21.239	-	-	-	-	-	21.239
Support - Non-Recurring Support Cost																		
Value Engineering	-	-	-	-	-	-	-	-	0.689	-	-	-	-	-	-	-	-	-
Subtotal: Support - Non-Recurring Support Cost	-	-	-	-	-	-	-	-	0.689	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	1.000	-	-	1.612	-	-	1.712	-	-	-	-	-	1.712
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	1.000	-	-	1.612	-	-	1.712	-	-	-	-	-	1.712
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.006	-	-	0.009	-	-	0.009	-	-	-	-	-	0.009
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	0.006	-	-	0.009	-	-	0.009	-	-	-	-	-	0.009
Gross/Weapon System Cost	-	-	-	-	-	20.700	-	-	21.013	-	-	22.960	-	-	-	-	-	22.960

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types				Item Number / Title [DODIC]: F57510 / CTG, 7.62mm Advanced Armor Piercing, XM1158				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	US ARMY ARDEC RDECOM / PICATINNY ARSENAL, NJ	C / FFP	PICATINNY ARSENAL, NJ	May 2019	May 2020	1,040,929	18.92	Y		
COMPLETE ROUND ^(†)		2020	US ARMY ARDEC RDECOM / PICATINNY ARSENAL, NJ	Option / FFP	PICATINNY ARSENAL, NJ	Aug 2020	Aug 2021	910,000	17.53	Y		
COMPLETE ROUND ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2020	Sep 2021	156,920	17.53	Y		
COMPLETE ROUND ^(†)		2021	US ARMY ARDEC RDECOM / PICATINNY ARSENAL, NJ	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2022	904,703	16.14	Y		
COMPLETE ROUND ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	411,228	16.14	Y		

^(†) indicates the presence of a P-21

Remarks:
 FY 2020 - FY 2021 complete round is an average unit cost between two contractors. The Government will determine the quantity split between the two contractors in the year of execution.
 OLIN is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-21, Production Schedule: PB 2021 Army														Date: February 2020																											
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30														P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types														Item Number / Title [DODIC]: F57510 / CTG, 7.62mm Advanced Armor Piercing, XM1158													

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2021														Fiscal Year 2022														B A L A N C E		
O C C O	M F R #	F Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 2 0	B A L D U 	Calendar Year 2021														Calendar Year 2022														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
	1	2019	ARMY	1.041	.434	.607	.087	.087	.087	.087	.087	.087	.087																.000						
	1	2020	ARMY	.910	.000	.910	-	-	-	-	-	-	-	-	-	.076	.076	.076	.076	.076	.076	.076	.076	.076	.076	.076	.076	.076	.000						
	2	2020	ARMY	.157	.000	.157	-	-	-	-	-	-	-	-	-	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.000						
	1	2021	ARMY	.905	.000	.905										A -	-	-	-	-	-	-	-	-	-	.075	.075	.075	.075	.075	.075	.377			
	2	2021	ARMY	.411	.000	.411										A -	-	-	-	-	-	-	-	-	-	.034	.034	.034	.034	.034	.034	.171			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types
		Item Number / Title [DODIC]: F57510 / CTG, 7.62mm Advanced Armor Piercing, XM1158

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2023										Fiscal Year 2024										B A L A N C E				
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 2	BAL D U E A S O F 1 O C T	Calendar Year 2023										Calendar Year 2024													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R		M A Y	J U N	J U L	A U G
COMPLETE ROUND																														
	1	2019	ARMY	1.041	1.041	.000																							.000	
	1	2020	ARMY	.910	.910	.000																							.000	
	2	2020	ARMY	.157	.157	.000																							.000	
	1	2021	ARMY	.905	.528	.377	.075	.075	.075	.075	.075																		.000	
	2	2021	ARMY	.411	.240	.171	.034	.034	.034	.034	.034																		.000	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types
		Item Number / Title [DODIC]: F57510 / CTG, 7.62mm Advanced Armor Piercing, XM1158

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	US ARMY ARDEC RDECOM - PICATINNY ARSENAL, NJ	400,000	1,500,000	2,000,000	6	6	12	18	6	6	12	18
2	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	400,000	1,500,000	2,000,000	6	6	12	18	6	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).

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition	P-1 Line Item Number / Title: 1065E06001 / NEXT GENERATION SQUAD WEAPON AMMUNITION
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	-	11.988	-	11.988	20.519	60.880	187.813	189.692	-	470.892
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	11.988	-	11.988	20.519	60.880	187.813	189.692	-	470.892
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	11.988	-	11.988	20.519	60.880	187.813	189.692	-	470.892
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This budget line includes NEXT GENERATION SQUAD WEAPON AMMUNITION

(E06002) NEXT GENERATION COMBAT ROUND consists of training standard item used in both combat and training and also includes a combat only war reserve variant. The ammunition is packed in cartons and cartridge linked belts; available in straight and linked configuration for use in the Next Generation Squad Weapons. This ammunition is intended for use against personnel and broad spectrum of hard targets. These items are not yet type classified. Items are Code B, not approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/
Medium Cal Ammunition **P-1 Line Item Number / Title:**
1065E06001 / NEXT GENERATION SQUAD WEAPON AMMUNITION

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E06002 / NEXT GENERATION COMBAT ROUND	P-5a, P-21			- / -	- / -	- / -	- / 11.988	- / -	- / 11.988
P-40	Total Gross/Weapon System Cost				- / -	- / -	- / -	- / 11.988	- / -	- / 11.988

*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 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense (DoD) Instruction 3000.04 (Munitions Requirements Process) and Army Regulation (AR) 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

The FY 2021 Base procurement dollars in the amount of \$11.988 million supports procurement of 3.600 million cartridges. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of NEXT GENERATION SQUAD WEAPON AMMUNITION when possible. This is a priority of the Secretary's Close Combat Lethality Task Force. Funding for this ammunition procurement budget item aligns with the Army's modernization priorities in support of the National Defense Strategy.

(E06002) NEXT GENERATION COMBAT ROUND consists of training standard item used in both combat and training and also includes a combat only war reserve variant. The FY 2021 requests supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement in the amount of \$11.988 million supports the procurement of 3.600 million Next Generation Squad Weapon Ammunition.

Type classification date: To be determined

NEXT GENERATION SQUAD WEAPON AMMUNITION is a new start in FY2021.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1065E06001 / NEXT GENERATION SQUAD WEAPON AMMUNITION	Item Number / Title [DODIC]: E06002 / NEXT GENERATION COMBAT ROUND

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 <i>(Units in Each)</i>		-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>		-	-	-	11.988	-	11.988
Less PY Advance Procurement <i>(\$ in Millions)</i>		-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>		-	-	-	11.988	-	11.988
Plus CY Advance Procurement <i>(\$ in Millions)</i>		-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>		-	-	-	11.988	-	11.988
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares <i>(\$ in Millions)</i>		-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>		-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	-	-	-	-	-	-	-	3.17	3,600,000	11.412	-	-	-	3.17	3,600,000	11.412
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	11.412	-	-	-	-	-	11.412
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	11.412	-	-	-	-	-	11.412
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.571	-	-	-	-	-	0.571
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.571	-	-	-	-	-	0.571
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-	0.005
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-	0.005
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	11.988	-	-	-	-	-	11.988

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 1065E06001 / NEXT GENERATION SQUAD WEAPON AMMUNITION				Item Number / Title [DODIC]: E06002 / NEXT GENERATION COMBAT ROUND					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	3,600,000	3.17	N		

^(†) indicates the presence of a P-21

Remarks:
FY 2021 COMPLETE ROUND IS ON A NEW CONTRACT AWARD.

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 1065E06001 / NEXT GENERATION SQUAD WEAPON AMMUNITION										Item Number / Title [DODIC]: E06002 / NEXT GENERATION COMBAT ROUND									

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2021												Fiscal Year 2022												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021												Calendar Year 2022												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P

LOAD, ASSEMBLE, PACK (LAP)																													
1	2021	ARMY		3.600	.000	3.600																							1.500

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UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 1065E06001 / NEXT GENERATION SQUAD WEAPON AMMUNITION										Item Number / Title [DODIC]: E06002 / NEXT GENERATION COMBAT ROUND									

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2023										Fiscal Year 2024										BALANCE				
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023										Calendar Year 2024													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R		M A Y	J U N	J U L	A U G
LOAD, ASSEMBLE, PACK (LAP)																														
	1	2021	ARMY	3.600	2.100	1.500	.300	.300	.300	.300	.300																		.000	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1065E06001 / NEXT GENERATION SQUAD WEAPON AMMUNITION
		Item Number / Title [DODIC]: E06002 / NEXT GENERATION COMBAT ROUND

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TO BE SELECTED - TBS01	800	5,000,000	20,000,000	6	6	12	18	6	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).

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition	P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	149.627	15.344	17.824	0.853	0.017	0.870	0.884	0.901	0.694	0.694	-	186.838
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	149.627	15.344	17.824	0.853	0.017	0.870	0.884	0.901	0.694	0.694	-	186.838
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	149.627	15.344	17.824	0.853	0.017	0.870	0.884	0.901	0.694	0.694	-	186.838

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

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

Description:

This budget line includes CTG, Handgun, ALL TYPES.

(E05210) CTG, 9MM BALL M882 (Combat Pack) cartridge contains a bullet comprised of a copper alloy jacket and a lead alloy core. The cartridge is identified by the plain bullet tip. The ammunition complies with North Atlantic Treaty Organization Standard Agreement 4090 and is packed in military type packaging. It is used in the M9, M11, M17 and M18 pistols. This item is Code A, approved for service use.

(E05218) CTG, MODULAR HANDGUN SYSTEM (MHS) AMMUNITION for the M17 and M18 (compact version) of the Modular Handgun System consists of four new 9MM cartridges - Ball M1152, Special Purpose M1153, Drill Dummy Inert (DDI) M1156 and Blank XM1157. The Ball cartridge is intended for use against enemy personnel, for training, and for force protection. The Special Purpose cartridge is required for use in situations where limited over-penetration of targets is necessary to reduce collateral damage. DDI cartridges are completely inert, plated and drilled for easy identification and used for training and weapon familiarization. Blank cartridges are used for K-9 training. The Blank Round (XM1157) is not yet type classified or approved for service use, and is scheduled for Type Classification Material Review Board Mid-August 2019. It is used in the M17, M18, M9, and M11 pistols. The Modular Handgun System will also utilize three M1041 cartridges - Blue, Red and Yellow through the use of a weapon adapter kit. This item is Code B, not approved for service use.

(E96105) CTG, 9MM MARKING, M1041 (BLUE) is used for force on force training engagements. The cartridge can be fired with the M17, M18, M9, and M11 pistols and M4 rifles with use of a conversion kit. The M9 kit consists of a replacement barrel only. The M11 kit consists of a replacement barrel and training feed ramp. The M17 and M18 both consist of an upper slide assembly. The M4 kit consists of a replacement upper receiver for 9mm. The replacement barrels are enameled blue and the M4 conversion bolt has a blue mark that is visible through the ejection port of the weapon. The projectile leaves a mark upon impact (similar to paintball), enabling after action evaluation of training scenarios. It differs from paintball in that it is a full complete cartridge with projectile and cartridge case containing a propulsion system for a low velocity launch. The M1041 is required to hit targets accurately out to 12 meters. The cartridge has been safety certified to be fired in close proximity at properly protected human subjects. In FY 2021, the Army will procure the lead free version. This item is Code A, approved for service use.

(E96107) CTG, 9MM MARKING, M1041 (RED) is used for force on force training engagements. The cartridge can be fired with the M17, M18, M9, and M11 pistols, and M4 rifles with use of a conversion kit. The M9 kit consists of a replacement barrel only. The M17 and M18 both consist of an upper slide assembly. The M11 kit consists of a replacement barrel and training feed ramp. The M4 kit consists of a replacement upper receiver for 9mm. The replacement barrels are enameled blue and the M4 conversion bolt has a blue mark that is visible through the ejection port of the weapon. The projectile leaves a mark upon impact (similar to paintball), enabling after action evaluation of training scenarios. It differs from paintball in that it is a full complete cartridge with projectile and cartridge case containing a propulsion system

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>for a low velocity launch. The M1041 is required to hit targets accurately out to 12 meters. The cartridge has been safety certified to be fired in close proximity at properly protected human subjects. In FY 2021, the Army will procure the lead free version. This item is Code A, approved for service use.</p> <p>(E99900) CTG, 9MM BALL M882 (Commercial Pack) cartridge contains a bullet comprised of a copper alloy jacket and a lead alloy core. The cartridge is identified by the plain bullet tip. It is packed in commercial type packaging and is not intended for OCONUS shipment. It is used in the M9, M11, M17, and M18 pistols. This item is Code A, approved for service use.</p>		
<p>Justification: FY 2021 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense (DoD) Instruction 3000.04 (Munitions Requirements Process) and Army Regulation (AR) 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p> <p>FY 2021 Total procurement dollars in the amount of \$0.870 million supports the procurement of 1.174 million cartridges in support of the National Defense Strategy and Combatant Command (COCOM) requirements. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of HANDGUN ALL TYPES when possible.</p> <p>FY 2021 Total Overseas Contingency Operations (OCO) dollars in the amount of \$0.017 million support the enduring COCOM requirement for procurement of 0.084 million CTG, 9mm Ball, M882 (Combat Pack) to deter potential adversaries and support the European Deterrence Initiative.</p> <p>(E05210) CTG 9MM BALL, M882 (Combat Pack) is a training standard item used in both training and combat. The request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Overseas Contingency Operations (OCO) procurement dollars in the amount of \$0.017 million supports the enduring COCOM requirement for procurement of 0.084 million M882 9mm Ball bullets to deter potential adversaries and support the European Deterrence Initiative. Type Classification Date: 1985</p> <p>(E05218) CTG MODULAR HANDGUN SYSTEM AMMUNITION is a training standard item used in both training and combat. The request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. There is no FY 2021 funding request. Type Classification Date: M1152/M1153/M156 June 2019; XM1157 Blank pending.</p> <p>(E96105) CTG 9MM MARKING, M1041 (BLUE) is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.640 million supports the procurement of 0.818 million M1041 (Blue) cartridges. Type Classification Date: 2009</p> <p>(E96107) CTG, 9MM MARKING, M1041 (RED) is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.213 million supports the procurement of 0.272 million M1041 (Red) cartridges. Type Classification Date: 2009</p> <p>(E99900) CTG 9MM BALL M882 (Commercial Pack) is a training standard item packed commercially for training. The request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. There is no FY 2021 funding request. Type Classification Date: 1985</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition	P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,752.622	69.574	63.049	58.280	0.189	58.469	103.078	107.067	109.795	110.153	-	2,373.807
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,752.622	69.574	63.049	58.280	0.189	58.469	103.078	107.067	109.795	110.153	-	2,373.807
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,752.622	69.574	63.049	58.280	0.189	58.469	103.078	107.067	109.795	110.153	-	2,373.807

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

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

Description:

This budget line includes .50 CAL ALL TYPES.

(E06700) CTG .50 Caliber M8, Armor Piercing Incendiary (API) Cartridge, packed single round, is used in the M107 and M82A1 Long Range Sniper Rifles. This cartridge is identified with a gray bullet tip. This is used in .50 Caliber Sniper training, a cost effective training round over the more expensive MK211 Long Range Sniper ammunition and minimizes training range limitations. This item is Code A, approved for service use.

(E07100) CTG .50 Caliber Cartridge Ball M33 is linked in 100 cartridge belts with the M9 link, for use in the M2, M2A1 and M3 Machine Gun. M33 is identified with a plain bullet tip. This item is Code A, approved for service use.

(E07200) CTG .50 Caliber Cartridge, Ball M33 and Cartridge, Tracer M17 linked 4 to 1 in a 100 cartridge belt with the M9 link for use in M2, M2A1 and M3 Machine Gun against unarmored targets. The tracer cartridge permits observation of the bullet's trajectory to the point of impact. M17 is identified with a brown bullet tip. M33 is identified with a plain bullet tip. This item is Code A, approved for service use.

(E07302) CTG .50 Caliber Blank Cartridge, M1A1 linked in a 100 cartridge belt with the M9 link for use in the M2 and M2A1 Machine Gun. This cartridge is a blank cartridge with a rosette crimp at the mouth used to simulate firing in training exercises in conjunction with the M19 Blank Firing Attachment (BFA). This item is Code A, approved for service use.

(E07900) CTG .50 Caliber High Pressure Test, M1, used in all .50 Caliber weapons for proof testing during manufacturing, test, and repair. The cartridge has a stannic stained (silvered) case. This item is Code A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/
Medium Cal Ammunition **P-1 Line Item Number / Title:**
1722E08000 / CTG, .50 Cal, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E06700 / CTG, .50cal API, M8, Single Round [A531]		A		- / 5.651	- / -	- / 0.013	- / -	- / 0.013	- / 0.013
P-5	E07100 / CTG, .50cal Ball, M2 w/ M33 Link [A555]	P-5a, P-21	A		- / 277.744	- / 9.087	- / 0.176	- / 9.888	- / 0.176	- / 10.064
P-5	E07200 / CTG, .50cal 4 Ball M33 / 1 Tracer M17 w/M9 Link [A557]	P-5a, P-21	A		- / 1,345.190	- / 55.333	- / 58.693	- / 39.255	- / -	- / 39.255
P-5	E07302 / CTG, .50cal Blank, M1A1 w/M9 Link [A598]	P-5a, P-21	A		- / 118.530	- / 4.950	- / 4.167	- / 8.092	- / -	- / 8.092
P-5	E07900 / CTG, .50cal High Pressure Test, M1, Single Round [A575]		A		- / 5.507	- / 0.204	- / -	- / 1.045	- / -	- / 1.045
P-40	Total Gross/Weapon System Cost				- / 1,752.622	- / 69.574	- / 63.049	- / 58.280	- / 0.189	- / 58.469

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense (DoD) Instruction 3000.04 (Munitions Requirements Process) and Army Regulation (AR) 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base procurement dollars in the amount of \$58.280 million support procurement of 20.139 million rounds in support of the National Defense Strategy and Combatant Command (COCOM) requirements. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of .50 CAL ALL TYPES when possible.

FY 2021 OCO dollars in the amount of \$0.189 million support the enduring COCOM requirement for procurement of 0.07 million .50 Cal Cartridges to deter potential adversaries and support the European Deterrence Initiative.

(E06700) CTG .50 Caliber M8, Armor Piercing Incendiary (API) Cartridge is a training standard item used in training and combat. FY 2021 OCO procurement dollars in the amount of \$0.013 million support the enduring COCOM requirement for the procurement of 0.005 million .50 Caliber M8 bullets to deter potential adversaries and support the European Deterrence Initiative.

Type classification date: 1944

(E07100) CTG .50 Caliber Cartridge Ball M33 is linked in 100 round belts with the M9 link. This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$9.888 million supports the procurement of 3.391 million .50 Caliber Ball M33 with M33 Link cartridges. FY 2021 OCO procurement dollars in the amount of \$0.176 million support the enduring COCOM requirement for procurement of 0.065 million .50 Caliber Cartridge Ball M33 Cartridges to deter potential adversaries and support the European Deterrence Initiative.

Type classification date: 1951

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E07200) CTG .50 Caliber Cartridge, Ball M33 and Cartridge, Tracer M17 linked 4 to 1 in a 100 round belt with the M9 link. This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$39.255 million supports the procurement of 12.577 million M33 .50 Caliber Ball Cartridges linked with M17 Tracer Cartridges. Type classification date: 1968</p> <p>(E07302) CTG .50 Caliber Blank Cartridge, M1A1 linked with the M9 link. This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$8.092 million supports the procurement of 3.927 million .50 Caliber Blank Cartridge, M1A1 Cartridges. Type classification date: 1980</p> <p>(E07900) CTG .50 Caliber High Pressure Test, M1 (HPT) cartridge is a testing cartridge used exclusively for acceptance testing of .50 Cal weapons. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$1.045 million supports the procurement of 0.244 million .50 Caliber HPT M1 Cartridges. Type classification date: 1926</p>		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types	Item Number / Title [DODIC]: E06700 / CTG, .50cal API, M8, Single Round [A531]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	5.651	-	0.013	-	0.013	0.013
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	5.651	-	0.013	-	0.013	0.013
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	5.651	-	0.013	-	0.013	0.013

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

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

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

Cost Elements	Prior Years			FY 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																		
Complete Round	-	-	5.651	-	-	-	2.71	4,797	0.013	-	-	-	2.72	4,779	0.013	2.72	4,779	0.013
<i>Subtotal: Recurring Cost</i>	-	-	5.651	-	-	-	-	-	0.013	-	-	-	-	-	0.013	-	-	0.013
<i>Subtotal: Hardware Cost</i>	-	-	5.651	-	-	-	-	-	0.013	-	-	-	-	-	0.013	-	-	0.013
Gross/Weapon System Cost	-	-	5.651	-	-	-	-	-	0.013	-	-	-	-	-	0.013	-	-	0.013

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types	Item Number / Title [DODIC]: E07100 / CTG, .50cal Ball, M2 w/ M33 Link [A555]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	277.744	9.087	0.176	9.888	0.176	10.064
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	277.744	9.087	0.176	9.888	0.176	10.064
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	277.744	9.087	0.176	9.888	0.176	10.064

(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																		
COMPLETE ROUND ^(†)	-	-	276.278	2.66	3,277,040	8.717	2.67	61,364	0.164	2.69	3,390,794	9.121	2.69	65,311	0.176	2.69	3,456,105	9.297
Subtotal: Recurring Cost	-	-	276.278	-	-	8.717	-	-	0.164	-	-	9.121	-	-	0.176	-	-	9.297
Subtotal: Hardware Cost	-	-	276.278	-	-	8.717	-	-	0.164	-	-	9.121	-	-	0.176	-	-	9.297
Support - Non-Recurring Support Cost																		
Value Engineering	-	-	-	-	-	0.266	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Non-Recurring Support Cost	-	-	-	-	-	0.266	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.459	-	-	0.100	-	-	0.012	-	-	0.746	-	-	0.000	-	-	0.746
Subtotal: Support - Production Engineering Cost	-	-	1.459	-	-	0.100	-	-	0.012	-	-	0.746	-	-	0.000	-	-	0.746
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.007	-	-	0.004	-	-	0.000	-	-	0.021	-	-	-	-	-	0.021
Subtotal: Support - Quality Assurance Cost	-	-	0.007	-	-	0.004	-	-	0.000	-	-	0.021	-	-	-	-	-	0.021
Gross/Weapon System Cost	-	-	277.744	-	-	9.087	-	-	0.176	-	-	9.888	-	-	0.176	-	-	10.064

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types				Item Number / Title [DODIC]: E07100 / CTG, .50cal Ball, M2 w/ M33 Link [A555]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2019	Sep 2020	2,621,633	2.66	Y		
COMPLETE ROUND ^(†)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	655,407	2.66	Y		
COMPLETE ROUND ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	61,364	2.67	Y		
COMPLETE ROUND ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	3,390,794	2.69	Y		
COMPLETE ROUND ^(†)	✓	2021	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	65,311	2.69	Y		

^(†) indicates the presence of a P-21

Remarks:
 FY 2019 and FY 2021 Complete Round is an average unit cost between two contractors. The Government will determine the quantity split between the two contractors in the year of execution.
 Olin is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types
Item Number / Title [DODIC]: E07100 / CTG, .50cal Ball, M2 w/ M33 Link [A555]		

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2019														Fiscal Year 2020											B A L A N C E			
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019														Calendar Year 2020													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
COMPLETE ROUND																																		
	1	2019	ARMY	2.622	.000	2.622												A -	-	-	-	-	-	-	-	-	-	-	-	.218	2.403			
	2	2019	ARMY	.655	.000	.655																					.055	.055	.055	.055	.055	.055	.055	.273
	1	2020	AF (+)	.997	.000	.997																					A -	-	-	-	-	-	-	.997
	1	2020	ARMY	.061	.000	.061																					A -	-	-	-	-	-	-	.061
	1	2020	CG (+)	.302	.000	.302																					A -	-	-	-	-	-	-	.302
	1	2020	MC (+)	1.372	.000	1.372																					A -	-	-	-	-	-	-	1.372
	1	2020	NAVSEA (+)	1.385	.000	1.385																					A -	-	-	-	-	-	-	1.385
	1	2020	Total	4.117	.000	4.117																					-	-	-	-	-	-	-	4.117
	1	2021	AF (+)	1.089	.000	1.089																												1.089
	1	2021	ARMY	3.391	.000	3.391																												3.391
	1	2021	NAVSEA (+)	1.219	.000	1.219																												1.219
	1	2021	NSOF (+)	.170	.000	.170																												.170
	1	2021	Total	5.869	.000	5.869																												5.869
✓	2	2021	ARMY	.065	.000	.065																												.065
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types
		Item Number / Title [DODIC]: E07100 / CTG, .50cal Ball, M2 w/ M33 Link [A555]

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2021												Fiscal Year 2022												BALANCE					
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021												Calendar Year 2022																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P				
COMPLETE ROUND																																			
	1	2019	ARMY	2.622	.218	2.403	.218	.218	.218	.218	.218	.218	.218	.218	.218	.218													.000						
	2	2019	ARMY	.655	.382	.273	.055	.055	.055	.055	.055																	.000							
	1	2020	AF (‡)	.997	.000	.997	-	-	-	-	-	.083	.083	.083	.083	.083	.083	.083	.083	.083	.083	.083	.083					.000							
	1	2020	ARMY	.061	.000	.061	-	-	-	-	-	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005					.000							
	1	2020	CG (‡)	.302	.000	.302	-	-	-	-	-	.025	.025	.025	.025	.025	.025	.025	.025	.025	.025	.025	.025					.000							
	1	2020	MC (‡)	1.372	.000	1.372	-	-	-	-	-	.114	.114	.114	.114	.114	.114	.114	.114	.114	.114	.114	.114					.000							
	1	2020	NAVSEA (‡)	1.385	.000	1.385	-	-	-	-	-	.115	.115	.115	.115	.115	.115	.115	.115	.115	.115	.115	.115					.000							
	1	2020	Total	4.117	.000	4.117	-	-	-	-	-	.343	.343	.343	.343	.343	.343	.343	.343	.343	.343	.343	.343	-	-	-	-	.000							
	1	2021	AF (‡)	1.089	.000	1.089						A -	-	-	-	-	-	-	.091	.091	.091	.091	.091	.091	.091	.091	.091	.000							
	1	2021	ARMY	3.391	.000	3.391						A -	-	-	-	-	-	-	-	-	-	-	.283	.283	.283	.283	.283	1.413							
	1	2021	NAVSEA (‡)	1.219	.000	1.219						A -	-	-	-	-	-	.102	.102	.102	.102	.102	.102	.102	.102	.102	.102	.000							
	1	2021	NSOF (‡)	.170	.000	.170						A -	-	-	-	-	-	.014	.014	.014	.014	.014	.014	.014	.014	.014	.000								
	1	2021	Total	5.869	.000	5.869												.207	.207	.207	.207	.207	.207	.489	.489	.489	.489	1.413							
✓	2	2021	ARMY	.065	.000	.065						A -	-	-	-	-	-	-	-	-	-	.005	.005	.005	.005	.005	.005	.027							
												O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types
		Item Number / Title [DODIC]: E07100 / CTG, .50cal Ball, M2 w/ M33 Link [A555]

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2023													Fiscal Year 2024													BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023													Calendar Year 2024													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
COMPLETE ROUND																																	
	1	2019	ARMY	2.622	2.622	.000																							.000				
	2	2019	ARMY	.655	.655	.000																							.000				
	1	2020	AF (+)	.997	.997	.000																							.000				
	1	2020	ARMY	.061	.061	.000																							.000				
	1	2020	CG (+)	.302	.302	.000																							.000				
	1	2020	MC (+)	1.372	1.372	.000																							.000				
	1	2020	NAVSEA (+)	1.385	1.385	.000																							.000				
	1	2020	Total	4.117	4.117	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
	1	2021	AF (+)	1.089	1.089	.000	-	-	-	-	-																		.000				
	1	2021	ARMY	3.391	1.978	1.413	.283	.283	.283	.283	.283																		.000				
	1	2021	NAVSEA (+)	1.219	1.219	.000	-	-	-	-	-																		.000				
	1	2021	NSOF (+)	.170	.170	.000	-	-	-	-	-																		.000				
	1	2021	Total	5.869	4.456	1.413	.283	.283	.283	.283	.283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000					
✓	2	2021	ARMY	.065	.038	.027	.005	.005	.005	.005	.005																		.000				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types
		Item Number / Title [DODIC]: E07100 / CTG, .50cal Ball, M2 w/ M33 Link [A555]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	200	5,990,000	20,770,000	6	6	12	18	6	6	12	18
2	OLIN CORP WINCHESTER DIVISION - EAST ALTON, IL	200	2,740,000	9,470,000	6	6	12	18	6	6	12	18

(±) Delivery rows marked with this symbol indicate that they are funded through a separate Line Item. See the respective components' exhibits for details, including the full delivery schedule.

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

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

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types	Item Number / Title [DODIC]: E07200 / CTG, .50cal 4 Ball M33 / 1 Tracer M17 w/M9 Link [A557]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)		1,345.190	55.333	58.693	39.255	-	39.255
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		1,345.190	55.333	58.693	39.255	-	39.255
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		1,345.190	55.333	58.693	39.255	-	39.255

(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																		
COMPLETE ROUND ^(†)	2.60	503,554K	1,309.241	2.81	18,887,839	53.075	2.85	19,233,244	54.815	2.88	12,576,461	36.220	-	-	-	2.88	12,576,461	36.220
Subtotal: Recurring Cost	-	-	1,309.241	-	-	53.075	-	-	54.815	-	-	36.220	-	-	-	-	-	36.220
Subtotal: Hardware Cost	-	-	1,309.241	-	-	53.075	-	-	54.815	-	-	36.220	-	-	-	-	-	36.220
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.684	-	-	0.098	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Acceptance Testing Cost	-	-	0.684	-	-	0.098	-	-	-	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	0.638	-	-	0.487	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	0.638	-	-	0.487	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	34.553	-	-	1.658	-	-	3.862	-	-	2.998	-	-	-	-	-	2.998
Subtotal: Support - Production Engineering Cost	-	-	34.553	-	-	1.658	-	-	3.862	-	-	2.998	-	-	-	-	-	2.998
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.073	-	-	0.015	-	-	0.016	-	-	0.037	-	-	-	-	-	0.037
Subtotal: Support - Quality Assurance Cost	-	-	0.073	-	-	0.015	-	-	0.016	-	-	0.037	-	-	-	-	-	0.037

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

Item Number / Title [DODIC]:
E07200 / CTG, .50cal 4 Ball M33 / 1
Tracer M17 w/M9 Link [A557]

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	-	-	1,345.190	-	-	55.333	-	-	58.693	-	-	39.255	-	-	-	-	-	39.255

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types				Item Number / Title [DODIC]: E07200 / CTG, .50cal 4 Ball M33 / 1 Tracer M17 w/M9 Link [A557]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	2,833,176	2.81	Y		
COMPLETE ROUND ^(†)		2019	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2019	Sep 2020	16,054,663	2.81	Y		
COMPLETE ROUND ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	19,233,244	2.85	Y		
COMPLETE ROUND ^(†)		2021	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	1,886,469	2.88	Y		
COMPLETE ROUND ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Oct 2021	10,689,992	2.88	Y		

^(†) indicates the presence of a P-21

Remarks:
 FY 2019 and FY 2021 Complete Round is an average unit cost between two contractors. The Government will determine the quantity split between the two contractors in the year of execution.
 Olin is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-21, Production Schedule: PB 2021 Army																									Date: February 2020								
Appropriation / Budget Activity / Budget Sub Activity:										P-1 Line Item Number / Title:										Item Number / Title [DODIC]:													
2034A / 01 / 30										1722E08000 / CTG, .50 Cal, All Types										E07200 / CTG, .50cal 4 Ball M33 / 1 Tracer M17 w/M9 Link [A557]													
Cost Elements (Units in Millions, * = < 500)						Fiscal Year 2019														Fiscal Year 2020												BALANCE	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 8	BAL D U E A S O F 1 O C T	Calendar Year 2019														Calendar Year 2020												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
COMPLETE ROUND																																	
Prior Years Deliveries: 503554378																																	
1	2019	ARMY	2.833	.000	2.833																												1.180
2	2019	ARMY	16.055	.000	16.055																												14.717
2	2020	AF (+)	1.041	.000	1.041																												1.041
2	2020	ARMY	19.233	.000	19.233																												19.233
2	2020	NAVSEA (+)	4.871	.000	4.871																												4.871
2	2020	Total	25.146	.000	25.146																												25.146
1	2021	AF (+)	.137	.000	.137																												.137
1	2021	ARMY	1.886	.000	1.886																												1.886
1	2021	NAVSEA (+)	.519	.000	.519																												.519
1	2021	NSOF (+)	.045	.000	.045																												.045
1	2021	Total	2.587	.000	2.587																												2.587
2	2021	AF (+)	.776	.000	.776																												.776
2	2021	ARMY	10.690	.000	10.690																												10.690
2	2021	NAVSEA (+)	2.940	.000	2.940																												2.940
2	2021	NSOF (+)	.255	.000	.255																												.255
2	2021	Total	14.661	.000	14.661																												14.661
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types										Item Number / Title [DODIC]: E07200 / CTG, .50cal 4 Ball M33 / 1 Tracer M17 w/M9 Link [A557]									

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2021													Fiscal Year 2022													B A L A N C E				
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 0	BAL D U E A 	Calendar Year 2021													Calendar Year 2022															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
Prior Years Deliveries: 503554378																																			
1	2019	ARMY	2.833	1.653	1.180	.236	.236	.236	.236	.236																									.000
2	2019	ARMY	16.055	1.338	14.717	1.338	1.338	1.338	1.338	1.338	1.338	1.338	1.338	1.338	1.338																				.000
2	2020	AF (‡)	1.041	.000	1.041	-	-	-	-	-	.149	.149	.149	.149	.149	.149	.149	-	-	-	-	-													.000
2	2020	ARMY	19.233	.000	19.233	-	-	-	-	-	1.603	1.603	1.603	1.603	1.603	1.603	1.603	1.603	1.603	1.603	1.603	1.603													.000
2	2020	NAVSEA (‡)	4.871	.000	4.871	-	-	-	-	-	.406	.406	.406	.406	.406	.406	.406	.406	.406	.406	.406	.406													.000
2	2020	Total	25.146	.000	25.146	-	-	-	-	-	2.157	2.157	2.157	2.157	2.157	2.157	2.157	2.009	2.009	2.009	2.009	2.009	-	-	-	-	-	-	-	-	-	-	.000		
1	2021	AF (‡)	.137	.000	.137						A -	-	-	-	-	-	-	-	-	-	-	-	.011	.011	.011	.011	.011	.011	.011	.011	.011	.011	.057		
1	2021	ARMY	1.886	.000	1.886						A -	-	-	-	-	-	-	-	-	-	-	-	.157	.157	.157	.157	.157	.157	.157	.157	.157	.157	.786		
1	2021	NAVSEA (‡)	.519	.000	.519						A -	-	-	-	-	-	-	-	-	-	-	-	.043	.043	.043	.043	.043	.043	.043	.043	.043	.043	.216		
1	2021	NSOF (‡)	.045	.000	.045						A -	-	-	-	-	-	-	-	-	-	-	-	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.019		
1	2021	Total	2.587	.000	2.587						-	-	-	-	-	-	-	-	-	-	-	-	.216	.216	.216	.216	.216	.216	.216	.216	.216	.216	1.078		
2	2021	AF (‡)	.776	.000	.776						A -	-	-	-	-	-	-	.065	.065	.065	.065	.065	.065	.065	.065	.065	.065	.065	.065	.065	.065	.065	.000		
2	2021	ARMY	10.690	.000	10.690						A -	-	-	-	-	-	-	.486	.486	.486	.486	.486	.486	.486	.486	.486	1.180	1.180	1.180	1.180	1.180	1.180	.000		
2	2021	NAVSEA (‡)	2.940	.000	2.940						A -	-	-	-	-	-	-	.245	.245	.245	.245	.245	.245	.245	.245	.245	.245	.245	.245	.245	.245	.245	.000		
2	2021	NSOF (‡)	.255	.000	.255						A -	-	-	-	-	-	-	.021	.021	.021	.021	.021	.021	.021	.021	.021	.021	.021	.021	.021	.021	.021	.000		
2	2021	Total	14.661	.000	14.661						-	-	-	-	-	-	-	.817	.817	.817	.817	.817	.817	.817	.817	.817	1.511	1.511	1.511	1.511	1.511	1.511	.000		
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types										Item Number / Title [DODIC]: E07200 / CTG, .50cal 4 Ball M33 / 1 Tracer M17 w/M9 Link [A557]									

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2023														Fiscal Year 2024														BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023														Calendar Year 2024															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						
COMPLETE ROUND																																				
Prior Years Deliveries: 503554378																																				
	1	2019	ARMY	2.833	2.833	.000																														.000
	2	2019	ARMY	16.055	16.055	.000																														.000
	2	2020	AF (‡)	1.041	1.041	.000																														.000
	2	2020	ARMY	19.233	19.233	.000																														.000
	2	2020	NAVSEA (‡)	4.871	4.871	.000																														.000
	2	2020	Total	25.146	25.146	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000
	1	2021	AF (‡)	.137	.080	.057	.011	.011	.011	.011	.011																									.000
	1	2021	ARMY	1.886	1.100	.786	.157	.157	.157	.157	.157																									.000
	1	2021	NAVSEA (‡)	.519	.303	.216	.043	.043	.043	.043	.043																									.000
	1	2021	NSOF (‡)	.045	.026	.019	.004	.004	.004	.004	.004																									.000
	1	2021	Total	2.587	1.509	1.078	.216	.216	.216	.216	.216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
	2	2021	AF (‡)	.776	.776	.000																														.000
	2	2021	ARMY	10.690	10.690	.000																														.000
	2	2021	NAVSEA (‡)	2.940	2.940	.000																														.000
	2	2021	NSOF (‡)	.255	.255	.000																														.000
	2	2021	Total	14.661	14.661	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types
		Item Number / Title [DODIC]: E07200 / CTG, .50cal 4 Ball M33 / 1 Tracer M17 w/M9 Link [A557]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	OLIN CORP WINCHESTER DIVISION - EAST ALTON, IL	200	400,000	1,600,000	6	6	12	18	6	6	12	18
2	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	200	2,740,000	9,470,000	6	6	12	18	6	6	7	13

(±) 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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types	Item Number / Title [DODIC]: E07302 / CTG, .50cal Blank, M1A1 w/M9 Link [A598]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	118.530	4.950	4.167	8.092	-	8.092
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	118.530	4.950	4.167	8.092	-	8.092
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	118.530	4.950	4.167	8.092	-	8.092

(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																		
Complete Round ^(†)	1.02	113,875K	116.152	1.20	3,194,194	3.833	1.75	2,126,377	3.721	1.87	3,926,896	7.343	-	-	-	1.87	3,926,896	7.343
BOX METAL M2A2 ^(†)	11.76	63,481	0.747	14.07	31,942	0.449	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	116.899	-	-	4.282	-	-	3.721	-	-	7.343	-	-	-	-	-	7.343
Subtotal: Hardware Cost	-	-	116.899	-	-	4.282	-	-	3.721	-	-	7.343	-	-	-	-	-	7.343
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	-	-	-	0.267	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	0.267	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.680	-	-	0.399	-	-	0.443	-	-	0.742	-	-	-	-	-	0.742
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.680	-	-	0.399	-	-	0.443	-	-	0.742	-	-	-	-	-	0.742
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.003	-	-	0.001	-	-	0.003	-	-	0.007	-	-	-	-	-	0.007
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.003	-	-	0.001	-	-	0.003	-	-	0.007	-	-	-	-	-	0.007
Gross/Weapon System Cost	-	-	118.530	-	-	4.950	-	-	4.167	-	-	8.092	-	-	-	-	-	8.092

Remarks:

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types	Item Number / Title [DODIC]: E07302 / CTG, .50cal Blank, M1A1 w/M9 Link [A598]
ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:	
Unit price increase from FY 2019 to FY 2020 due to transition from providing the M2A2 metal boxes via a Government Furnished Material (GFM) contract to a Complete Round contract which includes the metal boxes in the unit price.		
(t) indicates the presence of a P-5a		

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types				Item Number / Title [DODIC]: E07302 / CTG, .50cal Blank, M1A1 w/M9 Link [A598]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round ^(†)		2019	NORTHROP GRUMMAN INNVTN SYS / INDEPENDENCE, MO	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Jul 2020	3,194,194	1.20	Y		
Complete Round ^(†)		2020	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Sep 2021	2,126,377	1.75	Y		
Complete Round ^(†)		2021	OLIN WINCHESTER LLC (LCAAP) / EAST ALTON, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Oct 2021	3,926,896	1.87	Y		
BOX METAL M2A2		2019	BWAY CORPORATION / ATLANTA, GA	Option / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Jul 2019	31,942	14.07	Y		

^(†) indicates the presence of a P-21

Remarks:

Olin is the operator / performer at Lake City Army Ammunition Plant (LCAAP) and the place of performance is Independence, Missouri.

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Exhibit P-21, Production Schedule: PB 2021 Army	Date: February 2020
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Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types	Item Number / Title [DODIC]: E07302 / CTG, .50cal Blank, M1A1 w/M9 Link [A598]
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Cost Elements <i>(Units in Millions, * = < 500)</i>							Fiscal Year 2019															Fiscal Year 2020															B A L A N C E
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019															Calendar Year 2020															
							O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S							
							C	O	E	A	E	A	P	A	U	U	U	E	C	O	V	E	A	E	A	P	A	U	U	U	E						
T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P														

Complete Round

Prior Years Deliveries: 113874740

1	2019	ARMY	3.194	.000	3.194					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.266	.266	.266	2.396
1	2019	NSOF (+)	.797	.000	.797					A -	-	-	-	-	-	-	-	-	-	-	.066	.066	.066	.066	.066	.066	.066	.066	.332
1	2019	Total	3.991	.000	3.991					-	-	-	-	-	-	-	-	-	-	-	.066	.066	.066	.066	.333	.333	.333	2.728	
2	2020	ARMY	2.126	.000	2.126																A -	-	-	-	-	-	-	-	2.126
2	2020	NSOF (+)	.797	.000	.797																A -	-	-	-	-	-	-	-	.797
2	2020	Total	2.923	.000	2.923					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.923		
2	2021	ARMY	3.927	.000	3.927																							3.927	
2	2021	NSOF (+)	.800	.000	.800																							.800	
2	2021	Total	4.727	.000	4.727																							4.727	

O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	
C	O	E	A	E	A	P	A	U	U	U	E	C	O	V	E	A	E	A	P	A	U	U	U	E
T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P	

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Exhibit P-21, Production Schedule: PB 2021 Army														Date: February 2020																											
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30														P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types														Item Number / Title [DODIC]: E07302 / CTG, .50cal Blank, M1A1 w/M9 Link [A598]													

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2021														Fiscal Year 2022														B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 0	BAL D U E A S O F 1 O C T	Calendar Year 2021														Calendar Year 2022														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
Complete Round																																			
Prior Years Deliveries: 113874740																																			
1	2019	ARMY	3.194	.799	2.396	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.266	.000					
1	2019	NSOF (+)	.797	.465	.332	.066	.066	.066	.066	.066	.066	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000						
1	2019	Total	3.991	1.263	2.728	.333	.333	.333	.333	.333	.266	.266	.266	.266	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000						
2	2020	ARMY	2.126	.000	2.126	-	-	-	-	-	-	-	-	-	-	-	.177	.177	.177	.177	.177	.177	.177	.177	.177	.177	.177	.177	.000						
2	2020	NSOF (+)	.797	.000	.797	-	-	-	-	-	-	-	-	-	-	-	.066	.066	.066	.066	.066	.066	.066	.066	.066	.066	.066	.066	.000						
2	2020	Total	2.923	.000	2.923	-	-	-	-	-	-	-	-	-	-	-	.244	.244	.244	.244	.244	.244	.244	.244	.244	.244	.244	.244	.000						
2	2021	ARMY	3.927	.000	3.927	-	-	-	-	-	-	-	-	-	-	-	.327	.327	.327	.327	.327	.327	.327	.327	.327	.327	.327	.327	.000						
2	2021	NSOF (+)	.800	.000	.800	-	-	-	-	-	-	-	-	-	-	-	.067	.067	.067	.067	.067	.067	.067	.067	.067	.067	.067	.067	.000						
2	2021	Total	4.727	.000	4.727	-	-	-	-	-	-	-	-	-	-	-	.394	.394	.394	.394	.394	.394	.394	.394	.394	.394	.394	.000							
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types
		Item Number / Title [DODIC]: E07302 / CTG, .50cal Blank, M1A1 w/M9 Link [A598]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMMAN INNVN SYS - INDEPENDENCE, MO	200	1,670,000	5,000,000	6	6	12	18	6	6	12	18
2	OLIN WINCHESTER LLC (LCAAP) - EAST ALTON, IL	200	2,740,000	9,470,000	6	6	18	24	6	6	7	13

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

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

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

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1722E08000 / CTG, .50 Cal, All Types	Item Number / Title [DODIC]: E07900 / CTG, .50cal High Pressure Test, M1, Single Round [A575]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	5.507	0.204	-	1.045	-	1.045
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	5.507	0.204	-	1.045	-	1.045
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	5.507	0.204	-	1.045	-	1.045

(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																		
Complete Round	-	-	5.000	3.10	59,122	0.183	-	-	-	4.01	244,402	0.980	-	-	-	4.01	244,402	0.980
BOX METAL M2A2	-	-	-	14.07	492	0.007	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>5.000</i>	-	-	<i>0.190</i>	-	-	-	-	-	<i>0.980</i>	-	-	-	-	-	<i>0.980</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>5.000</i>	-	-	<i>0.190</i>	-	-	-	-	-	<i>0.980</i>	-	-	-	-	-	<i>0.980</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	0.507	-	-	0.010	-	-	-	-	-	0.065	-	-	-	-	-	0.065
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.507</i>	-	-	<i>0.010</i>	-	-	-	-	-	<i>0.065</i>	-	-	-	-	-	<i>0.065</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.004	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	<i>0.004</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	5.507	-	-	0.204	-	-	-	-	-	1.045	-	-	-	-	-	1.045

Remarks:

Unit price increase from FY 2019 to FY 2021 due to transition from providing the M2A2 metal boxes via a Government Furnished Material (GFM) contract to a Complete Round contract which includes the metal boxes in the unit price.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition	P-1 Line Item Number / Title: 2382E08900 / CTG, 20mm, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	150.869	9.803	27.432	31.708	-	31.708	32.387	32.726	15.767	15.163	-	315.855
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	150.869	9.803	27.432	31.708	-	31.708	32.387	32.726	15.767	15.163	-	315.855
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	150.869	9.803	27.432	31.708	-	31.708	32.387	32.726	15.767	15.163	-	315.855

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

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

Description:

This budget line includes 20MM ALL TYPES:

(E08909) The 20MM M940 Multi-Purpose Tracer - Self-Destruct (MPT-SD) cartridge, w/ MK7 Link, is an improved, fuzeless, 20mm High Explosive cartridge. The nose consists of tungsten penetrators designed to pierce incoming threats prior to initiation of the high explosive and incendiary mix. The projectile consists of a heavy walled steel body charged with an explosive mix and an incendiary mix. The M940 is currently being employed as a force protection munition in the M61 cannon of the Land Based Phalanx Weapon System (LPWS) for a Counter-Rocket, Artillery and Mortar (C-RAM) application. The projectile self-destructs if it misses its intended target, minimizing collateral surface damage when engaging airborne targets. The M940 replaced the M246 High Explosive Incendiary-Tracer, Self-Destroying (HEI-T-SD) as the primary air defense cartridge. This item is Code A, approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/
Medium Cal Ammunition **P-1 Line Item Number / Title:**
2382E08900 / CTG, 20mm, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E08909 / CTG, 20mm MPT-SD, M940 w/MK7 Link [AC34]	P-5a, P-21	A		- / 150.869	- / 9.803	- / 27.432	- / 31.708	- / -	- / 31.708
P-40	Total Gross/Weapon System Cost				- / 150.869	- / 9.803	- / 27.432	- / 31.708	- / -	- / 31.708

*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 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense (DoD) Instruction 3000.04 (Munitions Requirements Process) and Army Regulation (AR) 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base procurement dollars in the amount of \$31.708 million support procurement of 0.481 million cartridges in support of the National Defense Strategy and Combatant Command (COCOM) requirements. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of 20MM ALL TYPES when possible.

(E08909) The 20MM M940 Multi-Purpose Tracer - Self-Destruct (MPT-SD) cartridge is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$31.708 million support the procurement of 0.481 million cartridges.
 Type classification date: 1989

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2382E08900 / CTG, 20mm, All Types
		Item Number / Title [DODIC]: E08909 / CTG, 20mm MPT-SD, M940 w/ MK7 Link [AC34]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	150.869	9.803	27.432	31.708	-	31.708
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	150.869	9.803	27.432	31.708	-	31.708
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	150.869	9.803	27.432	31.708	-	31.708

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

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

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

Cost Elements	Prior Years			FY 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	31.81	4,436,810	141.135	58.90	151,080	8.899	60.68	417,522	25.335	60.83	480,582	29.234	-	-	-	60.83	480,582	29.234
BOX METAL M548 ^(†)	46.06	11,648	0.537	46.24	1,526	0.071	47.17	197	0.009	66.61	226	0.015	-	-	-	66.61	226	0.015
<i>Subtotal: Recurring Cost</i>	-	-	141.671	-	-	8.969	-	-	25.345	-	-	29.249	-	-	-	-	-	29.249
<i>Subtotal: Hardware Cost</i>	-	-	141.671	-	-	8.969	-	-	25.345	-	-	29.249	-	-	-	-	-	29.249
Support - Production Engineering Cost																		
Production Engineering	-	-	9.169	-	-	0.826	-	-	2.080	-	-	2.455	-	-	-	-	-	2.455
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	9.169	-	-	0.826	-	-	2.080	-	-	2.455	-	-	-	-	-	2.455
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.028	-	-	0.007	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.028	-	-	0.007	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	150.869	-	-	9.803	-	-	27.432	-	-	31.708	-	-	-	-	-	31.708

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 2382E08900 / CTG, 20mm, All Types				Item Number / Title [DODIC]: E08909 / CTG, 20mm MPT-SD, M940 w/ MK7 Link [AC34]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	75,540	58.90	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	75,540	58.90	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	208,761	60.68	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2020	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	208,761	60.68	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	240,291	60.83	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	240,291	60.83	Y		
BOX METAL M548		2019	CONCO INC. / LOUISVILLE, KY	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Nov 2020	1,526	46.24	Y		
BOX METAL M548		2020	CONCO INC. / LOUISVILLE, KY	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Nov 2020	197	47.17	Y		
BOX METAL M548		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Nov 2021	226	66.61	Y		

^(†) indicates the presence of a P-21

Remarks:
Load, Assemble, Pack (LAP) is an average unit cost between two contractors. The Government will determine the quantity split between the two contractors in the year of execution.

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2021 Army												Date: February 2020																	
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30						P-1 Line Item Number / Title: 2382E08900 / CTG, 20mm, All Types												Item Number / Title [DODIC]: E08909 / CTG, 20mm MPT-SD, M940 w/ MK7 Link [AC34]											

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2020												Fiscal Year 2021												BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020												Calendar Year 2021												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
LOAD, ASSEMBLE, PACK (LAP)																															
Prior Years Deliveries: 4436810																															
	1	2019	ARMY	75.540	.000	75.540																									.000
	2	2019	ARMY	75.540	.000	75.540																									.000
	1	2020	ARMY	208.761	.000	208.761																									100.760
	2	2020	ARMY	208.761	.000	208.761																									100.760
	1	2021	ARMY	240.291	.000	240.291																									240.291
	2	2021	ARMY	240.291	.000	240.291																									240.291

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2021 Army													Date: February 2020																		
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30						P-1 Line Item Number / Title: 2382E08900 / CTG, 20mm, All Types													Item Number / Title [DODIC]: E08909 / CTG, 20mm MPT-SD, M940 w/ MK7 Link [AC34]												

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2022													Fiscal Year 2023													B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022													Calendar Year 2023													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
LOAD, ASSEMBLE, PACK (LAP)																																	
Prior Years Deliveries: 4436810																																	
	1	2019	ARMY	75.540	75.540	.000																							.000				
	2	2019	ARMY	75.540	75.540	.000																							.000				
	1	2020	ARMY	208.761	108.001	100.760	20.153	20.153	20.153	20.153	20.148																		.000				
	2	2020	ARMY	208.761	108.001	100.760	20.153	20.153	20.153	20.153	20.148																		.000				
	1	2021	ARMY	240.291	.000	240.291	-	-	-	-	-	20.027	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024		.000				
	2	2021	ARMY	240.291	.000	240.291	-	-	-	-	-	20.027	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024	20.024		.000				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2382E08900 / CTG, 20mm, All Types
		Item Number / Title [DODIC]: E08909 / CTG, 20mm MPT-SD, M940 w/ MK7 Link [AC34]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	100	35,000	70,000	6	6	12	18	6	6	12	18
2	GENERAL DYNAMICS ORD & TAC - MARION, IL	100	35,000	70,000	6	6	12	18	6	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).

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition	P-1 Line Item Number / Title: 2650E08200 / CTG, 25mm, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	460.158	-	8.990	9.111	-	9.111	6.056	10.551	15.644	17.117	-	527.627
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	460.158	-	8.990	9.111	-	9.111	6.056	10.551	15.644	17.117	-	527.627
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	460.158	-	8.990	9.111	-	9.111	6.056	10.551	15.644	17.117	-	527.627

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

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

Description:

This budget line includes 25MM ALL TYPES:

(E08203) The 25MM M793 Target Practice - Tracer (TP-T) Cartridge is a ballistically matched training round that simulates the tactical M792 25mm High Explosive Incendiary - Tracer (HEI-T) Cartridge and the MK210 High Explosive Incendiary - Tracer (HEI-T) Cartridge. The M793 supports gunnery training for the Army's Bradley Fighting Vehicles, the United States Marine Corps (USMC) Light Armored Vehicles, and the Navy's MK38 Deck Gun. The M793 is a percussion primed round. It is packed for the Army and USMC in two linked belts of 15 cartridges each into the PA125 Container. It is packed for the Navy in linked belts of 55 cartridges in the CNU405 Container. The M28 metal link is used to belt M793 cartridges. This item is Code A, approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/
Medium Cal Ammunition **P-1 Line Item Number / Title:**
2650E08200 / CTG, 25mm, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E08203 / CTG, 25mm TP-T, M793 w/M28 Link [A976]	P-5a, P-21	A		- / 460.158	- / -	- / 8.990	- / 9.111	- / -	- / 9.111
P-40	Total Gross/Weapon System Cost				- / 460.158	- / -	- / 8.990	- / 9.111	- / -	- / 9.111

*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 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense (DoD) Instruction 3000.04 (Munitions Requirements Process) and Army Regulation (AR) 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base procurement dollars in the amount of \$9.111 million support procurement of 0.205 million cartridges in support of the National Defense Strategy and Combatant Command (COCOM) requirements. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of 25MM ALL TYPES when possible.

(E08203) CTG 25MM M793 Target Practice - Tracer (TP-T) is a training unique item not used in combat. The request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$9.111 million support the procurement of 0.205 million cartridges.
 Type classification date: 1979

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2650E08200 / CTG, 25mm, All Types	Item Number / Title [DODIC]: E08203 / CTG, 25mm TP-T, M793 w/ M28 Link [A976]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	460.158	-	8.990	9.111	-	9.111
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	460.158	-	8.990	9.111	-	9.111
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	460.158	-	8.990	9.111	-	9.111

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	21.36	21,418,942	457.509	-	-	-	29.88	227,024	6.783	33.96	204,930	6.959	-	-	-	33.96	204,930	6.959
CONTAINER PA125 ^(††)	69.76	25,225	1.760	-	-	-	93.51	7,673	0.718	93.51	6,926	0.648	-	-	-	93.51	6,926	0.648
<i>Subtotal: Recurring Cost</i>	-	-	459.268	-	-	-	-	-	7.501	-	-	7.607	-	-	-	-	-	7.607
Subtotal: Hardware Cost	-	-	459.268	-	-	-	-	-	7.501	-	-	7.607	-	-	-	-	-	7.607
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	0.427	-	-	0.447	-	-	-	-	-	0.447
Acceptance Test	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.439	-	-	0.447	-	-	-	-	-	0.447
Support - Production Engineering Cost																		
Production Engineering	-	-	0.875	-	-	-	-	-	1.046	-	-	1.054	-	-	-	-	-	1.054
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.875	-	-	-	-	-	1.046	-	-	1.054	-	-	-	-	-	1.054
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.014	-	-	-	-	-	0.004	-	-	0.003	-	-	-	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.014	-	-	-	-	-	0.004	-	-	0.003	-	-	-	-	-	0.003
Gross/Weapon System Cost	-	-	460.158	-	-	-	-	-	8.990	-	-	9.111	-	-	-	-	-	9.111

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2650E08200 / CTG, 25mm, All Types	Item Number / Title [DODIC]: E08203 / CTG, 25mm TP-T, M793 w/ M28 Link [A976]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Remarks: FY 2021 unit price increase is due to higher yearly contract range pricing. (t) indicates the presence of a P-5a		

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 2650E08200 / CTG, 25mm, All Types				Item Number / Title [DODIC]: E08203 / CTG, 25mm TP-T, M793 w/ M28 Link [A976]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	113,512	29.88	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2020	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	113,512	29.88	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	102,465	33.96	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	102,465	33.96	Y		
CONTAINER PA125		2020	CONCO INC. / LOUISVILLE, KY	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Nov 2020	7,673	93.51	Y		
CONTAINER PA125		2021	CONCO INC. / LOUISVILLE, KY	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Nov 2021	6,926	93.51	Y		

^(†) indicates the presence of a P-21

Remarks:
Load, Assemble, Pack (LAP) is an average unit cost between two contractors. The Government will determine the quantity split between the two contractors in the year of execution.

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Exhibit P-21, Production Schedule: PB 2021 Army				Date: February 2020							
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30				P-1 Line Item Number / Title: 2650E08200 / CTG, 25mm, All Types				Item Number / Title [DODIC]: E08203 / CTG, 25mm TP-T, M793 w/ M28 Link [A976]			

Cost Elements (Units in Thousands)					Fiscal Year 2020													Fiscal Year 2021													B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020													Calendar Year 2021													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
LOAD, ASSEMBLE, PACK (LAP)																																	
Prior Years Deliveries: 21418942																																	
	1	2020	ARMY	113.512	.000	113.512																											
	2	2020	ARMY	113.512	.000	113.512																											
	1	2021	ARMY	102.465	.000	102.465																											
	2	2021	ARMY	102.465	.000	102.465																											
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 2650E08200 / CTG, 25mm, All Types										Item Number / Title [DODIC]: E08203 / CTG, 25mm TP-T, M793 w/ M28 Link [A976]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2022															Fiscal Year 2023										BALANCE					
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022															Calendar Year 2023													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P				
LOAD, ASSEMBLE, PACK (LAP)																																			
Prior Years Deliveries: 21418942																																			
	1	2020	ARMY	113.512	66.217	47.295	9.459	9.459	9.459	9.459	9.459																								.000
	2	2020	ARMY	113.512	66.217	47.295	9.459	9.459	9.459	9.459	9.459																								.000
	1	2021	ARMY	102.465	.000	102.465	-	-	-	-	-	8.547	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	.000	
	2	2021	ARMY	102.465	.000	102.465	-	-	-	-	-	8.547	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	8.538	.000	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2650E08200 / CTG, 25mm, All Types
		Item Number / Title [DODIC]: E08203 / CTG, 25mm TP-T, M793 w/ M28 Link [A976]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	1,000	100,000	150,000	6	6	12	18	6	6	12	18
2	GENERAL DYNAMICS ORD & TAC - MARION, IL	1,000	100,000	150,000	6	6	12	18	6	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).

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,516.316	85.617	90.237	58.172	24.900	83.072	106.469	141.722	240.935	242.083	-	2,506.451
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,516.316	85.617	90.237	58.172	24.900	83.072	106.469	141.722	240.935	242.083	-	2,506.451
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,516.316	85.617	90.237	58.172	24.900	83.072	106.469	141.722	240.935	242.083	-	2,506.451

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

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

Description:

This budget line includes 30MM ALL TYPES:

(E07306) 30x173mm MK239 Target Practice with Tracer (TP-T) cartridge is a Navy qualified training cartridge that is ballistically matched to the MK238. The MK239 cartridge consists of an inert projectile, a glass-reinforced nylon rotating band, a tracer, AFP-001 base grain propellant, an M36A2 percussion primer, and an aluminum cartridge case. The MK239 cartridges are packed 30 cartridges per M592 ammunition container. The Army has completed the safety qualification of the MK239 which supported the Urgent Materiel Release for the Stryker Infantry Carrier Vehicle. This item is Code B, not approved for service use.

(E07406) CTG MK238 High Explosive Incendiary with Tracer (HEI-T) cartridge is a Navy qualified tactical cartridge consisting of a steel projectile body assembly crimped into an aluminum cartridge case, PBXN-5 explosive, a zirconium pellet, M758-LD fuze, a tracer, AFP-001 propellant, and an M36A2 percussion primer. The MK238 cartridges are packed 30 cartridges per M592 container. The Army has completed the safety qualification of the MK238 which supported the Urgent Materiel Release for the Stryker Infantry Carrier Vehicle. This item is Code B, not approved for service use.

(E07610) 30x173mm MK310 Programmable Air Burst Munition with Tracer (PABM-T) cartridge is a Navy qualified tactical high explosive cartridge that has three different ways of functioning which include point detonate, point detonation delay, and air burst, and also has a self-destruct feature if the projectile misses its intended target. The MK310 cartridge consists of a warhead loaded with explosive, a fuze that can be programmed to function in one of three ways as mentioned above, AFP-001 propellant, an M36A2 percussion primer, and an aluminum cartridge case. The MK310 cartridges are packed 30 cartridges per M592 ammunition container. The Army has completed the safety qualification of the MK310 which supported the Urgent Materiel Release for the Stryker Infantry Carrier Vehicle. This item is Code B, not approved for service use.

(E09191) 30x173mm MK317 is a Target Practice Discarding Sabot with Tracer (TPDS-T) cartridge. The MK317 cartridge consists of an inert projectile, molded plastic sabot, a pusher base, a tracer, propellant, an M36A2 percussion primer, and an aluminum cartridge case. The MK317 cartridges are packed 30 cartridges per M592 ammunition container. The Army has completed the safety qualification of the MK317 which supported the Urgent Materiel Release for the Stryker Infantry Carrier Vehicle. This item is Code B, not approved for service use.

(E09292) 30x173mm MK258 Armor Piercing Fin Stabilized Discarding Sabot with Tracer (APFSDS-T) cartridge is a Navy qualified tactical cartridge consisting of a high-density inert tungsten alloy long-rod penetrator sub-projectile held in a three-petal aluminum sabot, a plastic nose cap and obturator, a tracer, propellant, a percussion primer, and a steel cartridge case. The MK258 cartridges are packed 30

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>cartridges per M592 ammunition container. The Army has completed the safety qualification of the MK258 which supported the Urgent Materiel Release for the Stryker Infantry Carrier Vehicle. This item is Code B, not approved for service use.</p> <p>(E09900) 30mm M789 High Explosive Dual Purpose (HEDP) Cartridge is the only qualified combat cartridge for use in the Apache Helicopter's M230 Chain Gun. It is also used by the 160th Special Operations Aviation Regiment (SOAR), fired from the MH-60L Blackhawk helicopter. The M789 cartridge consists of a projectile containing explosive, a shaped charge liner, a M759 point-detonating fuze, aluminum cartridge case, propellant and a PA520 electric primer. The shaped charge allows the M789 to defeat light armor, and the steel projectile body provides an anti-personnel capability. M789 cartridges are packed in Bulk Ammunition Strips (BAS), 110 cartridges per M592 container. This item is Code A, approved for service use.</p> <p>(E10100) 30mm M788 30mm Target Practice (TP) cartridge is the only qualified training cartridge for use in the Apache and Blackhawk Helicopter's M230 Chain Gun. The M788 consists of an inert projectile, propellant, utilizes a PA520 electric primer and has a lightweight aluminum cartridge case. M788 cartridges are packed in Bulk Ammunition Strips (BAS), 110 cartridges per M592 container. This item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/
Medium Cal Ammunition **P-1 Line Item Number / Title:**
2938ER8120 / CTG, 30mm, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E07306 / CTG, 30mm TP-T, MK239, Single [AC25]	P-5a	B		- / 20.987	- / 8.686	- / 8.528	- / 2.997	- / 3.000	- / 5.997
P-5	E07406 / CTG, 30mm Hi Expl Incendry-T(HEI-T), Mk238 Series [AC27]	P-5a, P-21	B		- / 23.626	- / 10.017	- / 10.976	- / 2.405	- / 6.000	- / 8.405
P-5	E07610 / CTG, 30MM, Progmabl Air Burst Mun, Mk310, Linked [AC47]	P-5a, P-21	B		- / -	- / 1.765	- / 13.412	- / 14.550	- / -	- / 14.550
P-5	E09191 / CTG, 30mm TPDS-T, MK317 (SABOT Trng), Single [AC28]	P-5a, P-21	B		- / 20.582	- / 15.123	- / 4.000	- / 6.992	- / 4.000	- / 10.992
P-5	E09292 / CTG, 30mm APFSDS-T, MK258, Single [AC26]	P-5a, P-21	B		- / 39.254	- / 8.788	- / 25.232	- / 2.564	- / 11.900	- / 14.464
P-5	E09900 / CTG, 30mm HEDP, M789, Single, f/Gun M230 [B129]	P-5a, P-21	A		- / 992.218	- / 5.105	- / 5.221	- / 5.323	- / -	- / 5.323
P-5	E10100 / CTG, 30mm TP, M788, Single, f/Gun M230 [B118]	P-5a, P-21	A		- / 419.649	- / 36.133	- / 22.868	- / 23.341	- / -	- / 23.341
P-40	Total Gross/Weapon System Cost				- / 1,516.316	- / 85.617	- / 90.237	- / 58.172	- / 24.900	- / 83.072

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense (DoD) Instruction 3000.04 (Munitions Requirements Process) and Army Regulation (AR) 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Base procurement dollars in the amount of \$58.172 million support procurement of 0.883 million 30mm cartridges in support of the National Defense Strategy and Combatant Command (COCOM) requirements. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of 30MM ALL TYPES when possible.

FY 2021 Overseas Contingency Operations (OCO) dollars in the amount of \$24.900 million support the enduring COCOM requirement for procurement of 0.103 million 30mm cartridges to deter potential adversaries and support the European Deterrence Initiative.

(E07306) CTG 30x173mm MK239 - This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$2.997 million support the procurement of 0.021 million cartridges. FY 2021 Overseas Contingency Operations (OCO) dollars in the amount of \$3.000 million support the enduring COCOM requirement for procurement of 0.036 million MK239 cartridges to deter potential adversaries and support the European Deterrence Initiative. Type classification date: PENDING

(E07406) CTG 30x173mm MK238 High Explosive Incendiary with Tracer (HEI-T) - This is a war reserve item used in combat. The FY 2021 request builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$2.405 million support the procurement of 0.005 million cartridges. FY 2021 Overseas Contingency Operations (OCO) dollars in the amount of \$6.000 million support the enduring COCOM requirement for procurement of 0.022 million MK238 cartridges to deter potential adversaries and support the European Deterrence Initiative.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Type classification date: PENDING		
(E07610) 30x173mm MK310 Programmable Air Burst Munition with Tracer (PABM-T) - This is a war reserve item used in combat. The FY 2021 request builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$14.550 million support the procurement of 0.011 million cartridges. Type classification date: PENDING		
(E09191) CTG 30x173mm MK317 - This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$6.992 million support the procurement of 0.041 million cartridges. FY 2021 Overseas Contingency Operations (OCO) dollars in the amount of \$4.000 million support the enduring COCOM requirement for procurement of 0.029 million MK317 cartridges to deter potential adversaries and support the European Deterrence Initiative. Type classification date: PENDING		
(E09292) CTG 30x173mm MK258 - This is a war reserve item used in combat. The FY 2021 request builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$2.564 million support the procurement of 0.002 million cartridges. FY 2021 Overseas Contingency Operations (OCO) dollars in the amount of \$11.900 million support the enduring COCOM requirement for procurement of 0.016 million MK258 cartridges to deter potential adversaries and support the European Deterrence Initiative. Type classification date: PENDING		
(E09900) CTG 30mm HEDP M789 - This is a war reserve item used in combat. The FY 2021 request builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$5.323 million support the procurement of 0.039 million cartridges. Type classification date: 1982		
(E10100) CTG 30mm TP M788 - This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$23.341 million supports the procurement of 0.764 million cartridges. Type classification date: 1982		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E07306 / CTG, 30mm TP-T, MK239, Single [AC25]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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)	20.987	8.686	8.528	2.997	3.000	5.997
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	20.987	8.686	8.528	2.997	3.000	5.997
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	20.987	8.686	8.528	2.997	3.000	5.997

(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																		
Complete Round ^(†)	44.52	415,116	18.481	50.72	150,046	7.610	59.15	123,182	7.286	83.98	21,265	1.786	83.98	35,722	3.000	83.98	56,987	4.786
Subtotal: Recurring Cost	-	-	18.481	-	-	7.610	-	-	7.286	-	-	1.786	-	-	3.000	-	-	4.786
Subtotal: Hardware Cost	-	-	18.481	-	-	7.610	-	-	7.286	-	-	1.786	-	-	3.000	-	-	4.786
Support - Acceptance Testing Cost																		
First Article Test	-	-	0.820	-	-	0.505	-	-	0.445	-	-	0.445	-	-	-	-	-	0.445
Subtotal: Support - Acceptance Testing Cost	-	-	0.820	-	-	0.505	-	-	0.445	-	-	0.445	-	-	-	-	-	0.445
Support - Production Engineering Cost																		
Production Engineering	-	-	1.668	-	-	0.565	-	-	0.794	-	-	0.766	-	-	0.000	-	-	0.766
Subtotal: Support - Production Engineering Cost	-	-	1.668	-	-	0.565	-	-	0.794	-	-	0.766	-	-	0.000	-	-	0.766
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.018	-	-	0.006	-	-	0.003	-	-	-	-	-	-	-	-	-
Subtotal: Support - Quality Assurance Cost	-	-	0.018	-	-	0.006	-	-	0.003	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	20.987	-	-	8.686	-	-	8.528	-	-	2.997	-	-	3.000	-	-	5.997

Remarks:

FY 2021 unit price increase is due to decrease in demand, resulting in a lower quantity range at a higher price.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E07306 / CTG, 30mm TP-T, MK239, Single [AC25]
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types				Item Number / Title [DODIC]: E07306 / CTG, 30mm TP-T, MK239, Single [AC25]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round		2019	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Jul 2019	Jul 2020	150,046	50.72	Y		
Complete Round		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	123,182	59.15	Y		
Complete Round		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	21,265	83.98	Y		
Complete Round	✓	2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	35,722	83.98	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E07406 / CTG, 30mm Hi Expl Incendry-T(HEI-T), Mk238 Series [AC27]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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)	23.626	10.017	10.976	2.405	6.000	8.405
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	23.626	10.017	10.976	2.405	6.000	8.405
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	23.626	10.017	10.976	2.405	6.000	8.405

(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																		
COMPLETE ROUND(†)	143.62	143,276	20.577	96.00	89,015	8.545	171.68	55,475	9.524	267.80	4,586	1.228	267.80	22,404	6.000	267.80	26,990	7.228
Subtotal: Recurring Cost	-	-	20.577	-	-	8.545	-	-	9.524	-	-	1.228	-	-	6.000	-	-	7.228
Subtotal: Hardware Cost	-	-	20.577	-	-	8.545	-	-	9.524	-	-	1.228	-	-	6.000	-	-	7.228
Support - Acceptance Testing Cost																		
First Article Test	-	-	1.195	-	-	0.691	-	-	0.615	-	-	0.615	-	-	-	-	-	0.615
Subtotal: Support - Acceptance Testing Cost	-	-	1.195	-	-	0.691	-	-	0.615	-	-	0.615	-	-	-	-	-	0.615
Support - Production Engineering Cost																		
Production Engineering	-	-	1.836	-	-	0.775	-	-	0.832	-	-	0.558	-	-	0.000	-	-	0.558
Subtotal: Support - Production Engineering Cost	-	-	1.836	-	-	0.775	-	-	0.832	-	-	0.558	-	-	0.000	-	-	0.558
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.018	-	-	0.006	-	-	0.004	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	0.018	-	-	0.006	-	-	0.004	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	23.626	-	-	10.017	-	-	10.976	-	-	2.405	-	-	6.000	-	-	8.405

Remarks:
FY 2021 unit price increase is due to decrease in demand, resulting in a lower quantity range at a higher price.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E07406 / CTG, 30mm Hi Expl Incendry-T(HEI-T), Mk238 Series [AC27]
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types				Item Number / Title [DODIC]: E07406 / CTG, 30mm Hi Expl Incendry-T(HEI-T), Mk238 Series [AC27]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Sep 2021	89,015	96.00	Y		
COMPLETE ROUND ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Sep 2021	55,475	171.68	Y		
COMPLETE ROUND ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2022	4,586	267.80	Y		
COMPLETE ROUND ^(†)	✓	2021	NORTHROP GRUMMAN INNOVATION (OCO) / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2022	22,404	267.80	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army												Date: February 2020											
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30						P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types						Item Number / Title [DODIC]: E07406 / CTG, 30mm Hi Expl Incendry-T(HEI-T), Mk238 Series [AC27]											

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2020												Fiscal Year 2021												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 9	BAL D U E A S O F 1 O C T	Calendar Year 2020												Calendar Year 2021												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
Prior Years Deliveries: 143276																															
	1	2019	ARMY	89.015	.000	89.015																									
	1	2020	ARMY	55.475	.000	55.475																									
	1	2021	ARMY	4.586	.000	4.586																									
✓	2	2021	ARMY	22.404	.000	22.404																									
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army													Date: February 2020																
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30								P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types											Item Number / Title [DODIC]: E07406 / CTG, 30mm Hi Expl Incendry-T(HEI-T), Mk238 Series [AC27]										

Cost Elements <i>(Units in Thousands)</i>				Fiscal Year 2022													Fiscal Year 2023													B A L A N C E							
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCE PT P R I O R T O 1 O C T 2 0 2 1	BAL D U E A S O F 1 O C T	Calendar Year 2022													Calendar Year 2023																	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P						
COMPLETE ROUND																																					
Prior Years Deliveries: 143276																																					
	1	2019	ARMY	89.015	75.378	13.637	13.637																														.000
	1	2020	ARMY	55.475	4.622	50.853	50.853																														.000
	1	2021	ARMY	4.586	.000	4.586	-	-	-	-	-	-	-	-	-	-	.384	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.000		
✓	2	2021	ARMY	22.404	.000	22.404	-	-	-	-	-	-	-	-	-	-	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	1.867	.000			

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
		Item Number / Title [DODIC]: E07406 / CTG, 30mm Hi Expl Incendry-T(HEI-T), Mk238 Series [AC27]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	1,000	80,000	160,000	6	6	18	24	6	6	18	24
2	NORTHROP GRUMMAN INNOVATION (OCO) - PLYMOUTH, MN	1,000	80,000	160,000	6	6	18	24	6	6	18	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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E07610 / CTG, 30MM, Progrmabl Air Burst Mun, Mk310, Linked [AC47]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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)	-	1.765	13.412	14.550	-	14.550
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	1.765	13.412	14.550	-	14.550
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	1.765	13.412	14.550	-	14.550

(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																		
Complete Round ^(†)	-	-	-	968.64	1,278	1.238	1,102.44	10,245	11.294	1,091.10	11,374	12.410	-	-	-	1,091.10	11,374	12.410
Subtotal: Recurring Cost	-	-	-	-	-	1.238	-	-	11.294	-	-	12.410	-	-	-	-	-	12.410
Subtotal: Hardware Cost	-	-	-	-	-	1.238	-	-	11.294	-	-	12.410	-	-	-	-	-	12.410
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	1.134	-	-	1.157	-	-	-	-	-	1.157
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	1.134	-	-	1.157	-	-	-	-	-	1.157
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.517	-	-	0.973	-	-	0.983	-	-	-	-	-	0.983
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	0.517	-	-	0.973	-	-	0.983	-	-	-	-	-	0.983
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.010	-	-	0.010	-	-	-	-	-	-	-	-	-
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	0.010	-	-	0.010	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-	-	1.765	-	-	13.412	-	-	14.550	-	-	-	-	-	14.550

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types				Item Number / Title [DODIC]: E07610 / CTG, 30MM, Progrmabl Air Burst Mun, Mk310, Linked [AC47]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round ^(†)		2019	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Aug 2019	Feb 2021	1,278	968.64	Y		
Complete Round ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	10,245	1,102.44	Y		
Complete Round ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	11,374	1,091.10	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types										Item Number / Title [DODIC]: E07610 / CTG, 30MM, Progrmabl Air Burst Mun, Mk310, Linked [AC47]									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2019												Fiscal Year 2020												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
Complete Round																															
1		2019	ARMY	1.278	.000	1.278																								1.278	
1		2020	ARMY	10.245	.000	10.245																								10.245	
1		2021	ARMY	11.374	.000	11.374																								11.374	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types										Item Number / Title [DODIC]: E07610 / CTG, 30MM, Progrmabl Air Burst Mun, Mk310, Linked [AC47]									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2021												Fiscal Year 2022												B A L A N C E			
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 0	BAL D U E A 	Calendar Year 2021												Calendar Year 2022														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P		
Complete Round																																	
1		2019	ARMY	1.278	.000	1.278	-	-	-	-	1.278																						.000
1		2020	ARMY	10.245	.000	10.245	-	-	-	-	-	.862	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.853	.000
1		2021	ARMY	11.374	.000	11.374						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.735	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types										Item Number / Title [DODIC]: E07610 / CTG, 30MM, Progrmabl Air Burst Mun, Mk310, Linked [AC47]									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2023												Fiscal Year 2024												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
Complete Round																															
	1	2019	ARMY	1.278	1.278	.000																								.000	
	1	2020	ARMY	10.245	10.245	.000																								.000	
	1	2021	ARMY	11.374	6.639	4.735	.947	.947	.947	.947	.947																			.000	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
		Item Number / Title [DODIC]: E07610 / CTG, 30MM, Progrmabl Air Burst Mun, Mk310, Linked [AC47]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	100	70,000	110,000	6	6	12	18	6	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E09191 / CTG, 30mm TPDS-T, MK317 (SABOT Trng), Single [AC28]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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)	20.582	15.123	4.000	6.992	4.000	10.992
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	20.582	15.123	4.000	6.992	4.000	10.992
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	20.582	15.123	4.000	6.992	4.000	10.992

(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																		
Complete Round(†)	72.08	244,643	17.634	76.64	174,796	13.396	136.45	23,004	3.139	135.87	41,286	5.610	135.87	29,438	4.000	135.87	70,724	9.609
Subtotal: Recurring Cost	-	-	17.634	-	-	13.396	-	-	3.139	-	-	5.610	-	-	4.000	-	-	9.609
Subtotal: Hardware Cost	-	-	17.634	-	-	13.396	-	-	3.139	-	-	5.610	-	-	4.000	-	-	9.609
Support - Acceptance Testing Cost																		
First Article Test	-	-	1.162	-	-	0.683	-	-	0.304	-	-	0.304	-	-	-	-	-	0.304
Subtotal: Support - Acceptance Testing Cost	-	-	1.162	-	-	0.683	-	-	0.304	-	-	0.304	-	-	-	-	-	0.304
Support - Product Improvement Cost																		
Reliability	-	-	-	-	-	0.100	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	0.100	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.768	-	-	0.938	-	-	0.554	-	-	1.075	-	-	-	-	-	1.075
Subtotal: Support - Production Engineering Cost	-	-	1.768	-	-	0.938	-	-	0.554	-	-	1.075	-	-	-	-	-	1.075
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.018	-	-	0.006	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003
Subtotal: Support - Quality Assurance Cost	-	-	0.018	-	-	0.006	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E09191 / CTG, 30mm TPDS-T, MK317 (SABOT Trng), Single [AC28]
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	20.582	-	-	15.123	-	-	4.000	-	-	6.992	-	-	4.000	-	-	10.992

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types				Item Number / Title [DODIC]: E09191 / CTG, 30mm TPDS-T, MK317 (SABOT Trng), Single [AC28]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round ^(†)		2019	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Jan 2021	174,796	76.64	Y		
Complete Round ^(†)		2020	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	23,004	136.45	Y		
Complete Round ^(†)		2021	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	41,286	135.87	Y		
Complete Round ^(†)	✓	2021	GENERAL DYNAMICS ORD & TAC (OCO) / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	29,438	135.87	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types										Item Number / Title [DODIC]: E09191 / CTG, 30mm TPDS-T, MK317 (SABOT Trng), Single [AC28]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2021															Fiscal Year 2022															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021															Calendar Year 2022															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
Complete Round																																					
Prior Years Deliveries: 244643																																					
	1	2019	ARMY	174.796	.000	174.796	-	-	-	73.974	80.000	20.822																						.000			
	1	2020	ARMY	23.004	.000	23.004	-	-	-	-	-	1.917	1.917	1.917	1.917	1.917	1.917	1.917	1.917	1.917													.000				
	1	2021	ARMY	41.286	.000	41.286						A -	-	-	-	-	-	-	-	-	-	3.446	3.440	3.440	3.440	3.440	3.440	3.440	3.440			17.200					
✓	2	2021	ARMY	29.438	.000	29.438						A -	-	-	-	-	-	-	-	-	-	2.455	2.453	2.453	2.453	2.453	2.453	2.453	2.453			12.265					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
		Item Number / Title [DODIC]: E09191 / CTG, 30mm TPDS-T, MK317 (SABOT Trng), Single [AC28]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	GENERAL DYNAMICS ORD & TAC - MARION, IL	1,000	80,000	160,000	6	6	12	18	6	6	12	18
2	GENERAL DYNAMICS ORD & TAC (OCO) - MARION, IL	1,000	80,000	160,000	6	6	12	18	6	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E09292 / CTG, 30mm APFSDS-T, MK258, Single [AC26]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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)	39.254	8.788	25.232	2.564	11.900	14.464
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	39.254	8.788	25.232	2.564	11.900	14.464
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	39.254	8.788	25.232	2.564	11.900	14.464

(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																		
COMPLETE ROUND(†)	483.17	70,983	34.297	555.55	13,932	7.740	553.43	41,957	23.220	762.61	1,545	1.178	762.61	15,604	11.900	762.61	17,149	13.078
Subtotal: Recurring Cost	-	-	34.297	-	-	7.740	-	-	23.220	-	-	1.178	-	-	11.900	-	-	13.078
Subtotal: Hardware Cost	-	-	34.297	-	-	7.740	-	-	23.220	-	-	1.178	-	-	11.900	-	-	13.078
Support - Acceptance Testing Cost																		
First Article Test	-	-	2.707	-	-	-	-	-	0.709	-	-	0.709	-	-	-	-	-	0.709
Subtotal: Support - Acceptance Testing Cost	-	-	2.707	-	-	-	-	-	0.709	-	-	0.709	-	-	-	-	-	0.709
Support - Production Engineering Cost																		
Production Engineering	-	-	2.230	-	-	1.033	-	-	1.297	-	-	0.674	-	-	0.000	-	-	0.674
Subtotal: Support - Production Engineering Cost	-	-	2.230	-	-	1.033	-	-	1.297	-	-	0.674	-	-	0.000	-	-	0.674
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.020	-	-	0.016	-	-	0.006	-	-	0.003	-	-	-	-	-	0.003
Subtotal: Support - Quality Assurance Cost	-	-	0.020	-	-	0.016	-	-	0.006	-	-	0.003	-	-	-	-	-	0.003
Gross/Weapon System Cost	-	-	39.254	-	-	8.788	-	-	25.232	-	-	2.564	-	-	11.900	-	-	14.464

Remarks:
FY 2021 unit price increase is due to decrease in demand, resulting in a lower quantity range at a higher price.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E09292 / CTG, 30mm APFSDS-T, MK258, Single [AC26]
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types				Item Number / Title [DODIC]: E09292 / CTG, 30mm APFSDS-T, MK258, Single [AC26]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Sep 2021	13,932	555.55	Y		
COMPLETE ROUND ^(†)		2020	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Sep 2021	41,957	553.43	Y		
COMPLETE ROUND ^(†)		2021	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2022	1,545	762.61	Y		
COMPLETE ROUND ^(†)	✓	2021	GENERAL DYNAMICS ORD & TAC (OCO) / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2022	15,604	762.61	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types										Item Number / Title [DODIC]: E09292 / CTG, 30mm APFSDS-T, MK258, Single [AC26]									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2022															Fiscal Year 2023															B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022															Calendar Year 2023															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

COMPLETE ROUND																														
Prior Years Deliveries: 70983																														
	1	2019	ARMY	13.932	13.932	.000																								.000
	1	2020	ARMY	41.957	41.957	.000																								.000
	1	2021	ARMY	1.545	.000	1.545	-	-	-	-	-	-	-	-	-	-	.137	.128	.128	.128	.128	.128	.128	.128	.128	.128	.128	.128	.128	.000
✓	2	2021	ARMY	15.604	.000	15.604	-	-	-	-	-	-	-	-	-	-	1.304	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	.000

							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P
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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
		Item Number / Title [DODIC]: E09292 / CTG, 30mm APFSDS-T, MK258, Single [AC26]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	GENERAL DYNAMICS ORD & TAC - MARION, IL	1,000	100,000	200,000	6	6	18	24	6	6	18	24
2	GENERAL DYNAMICS ORD & TAC (OCO) - MARION, IL	1,000	100,000	200,000	6	6	18	24	6	6	18	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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
		Item Number / Title [DODIC]: E09900 / CTG, 30mm HEDP, M789, Single, f/Gun M230 [B129]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	992.218	5.105	5.221	5.323	-	5.323
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	992.218	5.105	5.221	5.323	-	5.323
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	992.218	5.105	5.221	5.323	-	5.323

(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 Cost																		
Recurring Cost																		
COMPLETE ROUND ^(†)	74.56	13,189,425	983.404	92.89	49,769	4.623	127.40	39,096	4.981	130.48	38,768	5.058	-	-	-	130.48	38,768	5.058
Subtotal: Recurring Cost	-	-	983.404	-	-	4.623	-	-	4.981	-	-	5.058	-	-	-	-	-	5.058
Subtotal: Hardware Cost	-	-	983.404	-	-	4.623	-	-	4.981	-	-	5.058	-	-	-	-	-	5.058
Support - Product Improvement Cost																		
Safety	-	-	-	-	-	0.051	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	0.051	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	8.701	-	-	0.415	-	-	0.236	-	-	0.258	-	-	-	-	-	0.258
Subtotal: Support - Production Engineering Cost	-	-	8.701	-	-	0.415	-	-	0.236	-	-	0.258	-	-	-	-	-	0.258
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.113	-	-	0.015	-	-	0.004	-	-	0.006	-	-	-	-	-	0.006
Subtotal: Support - Quality Assurance Cost	-	-	0.113	-	-	0.015	-	-	0.004	-	-	0.006	-	-	-	-	-	0.006
Gross/Weapon System Cost	-	-	992.218	-	-	5.105	-	-	5.221	-	-	5.323	-	-	-	-	-	5.323

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types				Item Number / Title [DODIC]: E09900 / CTG, 30mm HEDP, M789, Single, f/Gun M230 [B129]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Feb 2019	Jul 2020	49,769	92.89	Y		
COMPLETE ROUND ^(†)		2020	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	19,548	127.40	Y		
COMPLETE ROUND ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	19,548	127.40	Y		
COMPLETE ROUND ^(†)		2021	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	19,384	130.48	Y		
COMPLETE ROUND ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	19,384	130.48	Y		

^(†) indicates the presence of a P-21

Remarks:
Load, Assemble, Pack (LAP) is an average unit cost between two contractors. The Government will determine the quantity split between the two contractors in the year of execution.

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Exhibit P-21, Production Schedule: PB 2021 Army				Date: February 2020							
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30				P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types				Item Number / Title [DODIC]: E09900 / CTG, 30mm HEDP, M789, Single, f/Gun M230 [B129]			

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2019											Fiscal Year 2020											B A L A N C E	
O C C O	M F R #	F Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 1 8	B A L D U E A S O F 1 O C T	Calendar Year 2019											Calendar Year 2020											
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N		J U L

COMPLETE ROUND																														
Prior Years Deliveries: 13189425																														
1	2019	ARMY	49.769	.000	49.769																									
1	2020	ARMY	19.548	.000	19.548																									
1	2020	MC (+)	.970	.000	.970																									
1	2020	Total	20.518	.000	20.518																									
2	2020	ARMY	19.548	.000	19.548																									
2	2020	MC (+)	.970	.000	.970																									
2	2020	Total	20.518	.000	20.518																									
1	2021	ARMY	19.384	.000	19.384																									
1	2021	MC (+)	1.887	.000	1.887																									
1	2021	Total	21.271	.000	21.271																									
2	2021	ARMY	19.384	.000	19.384																									
2	2021	MC (+)	1.887	.000	1.887																									
2	2021	Total	21.271	.000	21.271																									

O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P
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Exhibit P-21, Production Schedule: PB 2021 Army Date: February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E09900 / CTG, 30mm HEDP, M789, Single, f/Gun M230 [B129]
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Cost Elements (Units in Thousands)					Fiscal Year 2021														Fiscal Year 2022												B A L A N C E					
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021														Calendar Year 2022															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						
COMPLETE ROUND																																				
Prior Years Deliveries: 13189425																																				
	1	2019	ARMY	49.769	49.769	.000																							.000							
	1	2020	ARMY	19.548	.000	19.548	-	-	-	-	-	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	.000							
	1	2020	MC (+)	.970	.000	.970	-	-	-	-	-	.970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000							
	1	2020	Total	20.518	.000	20.518	-	-	-	-	-	2.599	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	-	.000							
	2	2020	ARMY	19.548	.000	19.548	-	-	-	-	-	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	.000							
	2	2020	MC (+)	.970	.000	.970	-	-	-	-	-	.970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000							
	2	2020	Total	20.518	.000	20.518	-	-	-	-	-	2.599	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	1.629	-	.000							
	1	2021	ARMY	19.384	.000	19.384						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.618	1.616	1.615	1.615	1.615	1.615	1.615	1.615	8.075
	1	2021	MC (+)	1.887	.000	1.887						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.160	.157	.157	.157	.157	.157	.157	.157	.785
	1	2021	Total	21.271	.000	21.271						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.778	1.773	1.772	1.772	1.772	1.772	1.772	1.772	8.860
	2	2021	ARMY	19.384	.000	19.384						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.618	1.616	1.615	1.615	1.615	1.615	1.615	1.615	8.075
	2	2021	MC (+)	1.887	.000	1.887						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.160	.157	.157	.157	.157	.157	.157	.157	.785
	2	2021	Total	21.271	.000	21.271						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.778	1.773	1.772	1.772	1.772	1.772	1.772	1.772	8.860
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
		Item Number / Title [DODIC]: E09900 / CTG, 30mm HEDP, M789, Single, f/Gun M230 [B129]

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2023													Fiscal Year 2024													B A L A N C E					
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023													Calendar Year 2024																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						
COMPLETE ROUND																																				
Prior Years Deliveries: 13189425																																				
1	2019	ARMY		49.769	49.769	.000																														.000
1	2020	ARMY		19.548	19.548	.000																														.000
1	2020	MC (+)		.970	.970	.000																													.000	
1	2020	Total		20.518	20.518	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
2	2020	ARMY		19.548	19.548	.000																													.000	
2	2020	MC (+)		.970	.970	.000																													.000	
2	2020	Total		20.518	20.518	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
1	2021	ARMY		19.384	11.309	8.075	1.615	1.615	1.615	1.615	1.615																								.000	
1	2021	MC (+)		1.887	1.102	.785	.157	.157	.157	.157	.157																								.000	
1	2021	Total		21.271	12.411	8.860	1.772	1.772	1.772	1.772	1.772	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000		
2	2021	ARMY		19.384	11.309	8.075	1.615	1.615	1.615	1.615	1.615																								.000	
2	2021	MC (+)		1.887	1.102	.785	.157	.157	.157	.157	.157																								.000	
2	2021	Total		21.271	12.411	8.860	1.772	1.772	1.772	1.772	1.772	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
		Item Number / Title [DODIC]: E09900 / CTG, 30mm HEDP, M789, Single, f/Gun M230 [B129]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	GENERAL DYNAMICS ORD & TAC - MARION, IL	100	30,000	65,000	6	6	12	18	6	6	12	18
2	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	100	85,000	150,000	6	6	12	18	6	6	12	18

(†) Delivery rows marked with this symbol indicate that they are funded through a separate Line Item. See the respective components' exhibits for details, including the full delivery schedule.

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

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to 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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types	Item Number / Title [DODIC]: E10100 / CTG, 30mm TP, M788, Single, f/Gun M230 [B118]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	419.649	36.133	22.868	23.341	-	23.341
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	419.649	36.133	22.868	23.341	-	23.341
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	419.649	36.133	22.868	23.341	-	23.341

(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																		
COMPLETE ROUND ^(†)	18.21	22,123,077	402.861	22.65	1,505,950	34.110	25.85	810,864	20.961	27.59	764,368	21.089	-	-	-	27.59	764,368	21.089
Subtotal: Recurring Cost	-	-	402.861	-	-	34.110	-	-	20.961	-	-	21.089	-	-	-	-	-	21.089
Subtotal: Hardware Cost	-	-	402.861	-	-	34.110	-	-	20.961	-	-	21.089	-	-	-	-	-	21.089
Support - Product Improvement Cost																		
Safety	-	-	-	-	-	0.097	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	0.097	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	16.761	-	-	1.911	-	-	1.904	-	-	2.236	-	-	-	-	-	2.236
Subtotal: Support - Production Engineering Cost	-	-	16.761	-	-	1.911	-	-	1.904	-	-	2.236	-	-	-	-	-	2.236
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.027	-	-	0.015	-	-	0.003	-	-	0.016	-	-	-	-	-	0.016
Subtotal: Support - Quality Assurance Cost	-	-	0.027	-	-	0.015	-	-	0.003	-	-	0.016	-	-	-	-	-	0.016
Gross/Weapon System Cost	-	-	419.649	-	-	36.133	-	-	22.868	-	-	23.341	-	-	-	-	-	23.341

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types				Item Number / Title [DODIC]: E10100 / CTG, 30mm TP, M788, Single, f/Gun M230 [B118]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Feb 2019	Feb 2020	752,975	22.65	Y		
COMPLETE ROUND ^(†)		2019	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Feb 2019	Oct 2020	752,975	22.65	Y		
COMPLETE ROUND ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	405,432	25.85	Y		
COMPLETE ROUND ^(†)		2020	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	405,432	25.85	Y		
COMPLETE ROUND ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	382,184	27.59	Y		
COMPLETE ROUND ^(†)		2021	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	382,184	27.59	Y		

^(†) indicates the presence of a P-21

Remarks:
Load, Assemble, Pack (LAP) is an average unit cost between two contractors. The Government will determine the quantity split between the two contractors in the year of execution.

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Exhibit P-21, Production Schedule: PB 2021 Army												Date: February 2020											
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30						P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types						Item Number / Title [DODIC]: E10100 / CTG, 30mm TP, M788, Single, f/Gun M230 [B118]											

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2019												Fiscal Year 2020												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P

COMPLETE ROUND																														
Prior Years Deliveries: 22123077																														
	1	2019	ARMY	752.975	.000	752.975																							235.029	
	2	2019	ARMY	752.975	.000	752.975																							752.975	
	1	2020	ARMY	405.432	.000	405.432																							405.432	
	1	2020	MC (+)	4.593	.000	4.593																							4.593	
	1	2020	Total	410.025	.000	410.025																							410.025	
	2	2020	ARMY	405.432	.000	405.432																							405.432	
	2	2020	MC (+)	4.593	.000	4.593																							4.593	
	2	2020	Total	410.025	.000	410.025																							410.025	
	1	2021	ARMY	382.184	.000	382.184																							382.184	
	1	2021	MC (+)	8.484	.000	8.484																							8.484	
	1	2021	Total	390.668	.000	390.668																							390.668	
	2	2021	ARMY	382.184	.000	382.184																							382.184	
	2	2021	MC (+)	8.484	.000	8.484																							8.484	
	2	2021	Total	390.668	.000	390.668																							390.668	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

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Exhibit P-21, Production Schedule: PB 2021 Army												Date: February 2020											
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30						P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types						Item Number / Title [DODIC]: E10100 / CTG, 30mm TP, M788, Single, f/Gun M230 [B118]											

Cost Elements <i>(Units in Thousands)</i>				Fiscal Year 2021														Fiscal Year 2022														B A L A N C E			
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 0	BAL D U E A 	Calendar Year 2021														Calendar Year 2022														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

COMPLETE ROUND																																		
Prior Years Deliveries: 22123077																																		
1	2019	ARMY	752.975	517.946	235.029	64.743	64.743	64.743	40.800																				.000					
2	2019	ARMY	752.975	.000	752.975	109.806	200.000	200.000	200.000	43.169																			.000					
1	2020	ARMY	405.432	.000	405.432	-	-	-	-	-	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	.000						
1	2020	MC (+)	4.593	.000	4.593	-	-	-	-	-	.391	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.000						
1	2020	Total	410.025	.000	410.025	-	-	-	-	-	34.177	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	-	-	.000					
2	2020	ARMY	405.432	.000	405.432	-	-	-	-	-	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	33.786	.000						
2	2020	MC (+)	4.593	.000	4.593	-	-	-	-	-	.391	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.382	.000						
2	2020	Total	410.025	.000	410.025	-	-	-	-	-	34.177	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	34.168	-	-	.000					
1	2021	ARMY	382.184	.000	382.184						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	159.240						
1	2021	MC (+)	8.484	.000	8.484						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.535						
1	2021	Total	390.668	.000	390.668						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	162.775						
2	2021	ARMY	382.184	.000	382.184						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	159.240						
2	2021	MC (+)	8.484	.000	8.484						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.535						
2	2021	Total	390.668	.000	390.668						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	162.775						
											O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
		Item Number / Title [DODIC]: E10100 / CTG, 30mm TP, M788, Single, f/Gun M230 [B118]

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2023													Fiscal Year 2024													B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023													Calendar Year 2024													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
COMPLETE ROUND																																	
Prior Years Deliveries: 22123077																																	
	1	2019	ARMY	752.975	752.975	.000																							.000				
	2	2019	ARMY	752.975	752.975	.000																							.000				
	1	2020	ARMY	405.432	405.432	.000																							.000				
	1	2020	MC (+)	4.593	4.593	.000																							.000				
	1	2020	Total	410.025	410.025	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
	2	2020	ARMY	405.432	405.432	.000																							.000				
	2	2020	MC (+)	4.593	4.593	.000																							.000				
	2	2020	Total	410.025	410.025	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
	1	2021	ARMY	382.184	222.944	159.240	31.848	31.848	31.848	31.848	31.848																		.000				
	1	2021	MC (+)	8.484	4.949	3.535	.707	.707	.707	.707	.707																		.000				
	1	2021	Total	390.668	227.893	162.775	32.555	32.555	32.555	32.555	32.555	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000					
	2	2021	ARMY	382.184	222.944	159.240	31.848	31.848	31.848	31.848	31.848																		.000				
	2	2021	MC (+)	8.484	4.949	3.535	.707	.707	.707	.707	.707																		.000				
	2	2021	Total	390.668	227.893	162.775	32.555	32.555	32.555	32.555	32.555	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 2938ER8120 / CTG, 30mm, All Types
		Item Number / Title [DODIC]: E10100 / CTG, 30mm TP, M788, Single, f/Gun M230 [B118]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	1,000	120,000	200,000	6	6	12	18	6	6	12	18
2	GENERAL DYNAMICS ORD & TAC - MARION, IL	1,000	120,000	200,000	6	6	12	18	6	6	12	18

(†) Delivery rows marked with this symbol indicate that they are funded through a separate Line Item. See the respective components' exhibits for details, including the full delivery schedule.

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

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to 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 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition	P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,451.940	69.781	103.952	114.638	-	114.638	139.216	157.101	144.990	143.985	-	3,325.603
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,451.940	69.781	103.952	114.638	-	114.638	139.216	157.101	144.990	143.985	-	3,325.603
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,451.940	69.781	103.952	114.638	-	114.638	139.216	157.101	144.990	143.985	-	3,325.603

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

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

Description:

This budget line includes 40MM ALL TYPES:

(E05610) CTG 40mm M781E1 Low Velocity Day Night Thermal cartridge is a training cartridge for the M203 and M320 Grenade Launchers. This ammunition consists of a projectile assembly and cartridge case assembly. The projectile ogive is filled with a signature material that provides a signature upon impact that can be seen day or night with the unaided eye and thermal and night vision weapon sights. The cartridge does not contain any fuzing or explosives, eliminating unexploded ordnance issues on the training ranges due to non-functioning training ammunition. This item is code B, not approved for service use.

(E05611) CTG 40mm M918E1 High Velocity Day Night Thermal cartridge is a training cartridge for the MK19 Grenade Machine Gun. This ammunition consists of a projectile assembly and cartridge case assembly. The projectile ogive is filled with a signature material that provides a signature upon impact that can be seen day or night with the unaided eye and thermal and night vision weapon sights. The cartridge does not contain any fuzing or explosives, eliminating unexploded ordnance issues on the training ranges due to non-functioning training ammunition. This item is code B, not approved for service use.

(E11800) CTG 40mm High Velocity M430A1 is a High-Explosive Dual Purpose (HEDP) cartridge and is fired from the MK19 Grenade Machine Gun at a rate of 300-400 rounds per minute to a max range of 2,200 meters. The M430 cartridge consists of a steel projectile body with a Composite A5 high explosive charge, copper cone liner, Point Initiating Base Detonating (PIBD) fuze assembly with a Spitback charge, and aluminum cartridge case. Upon impact, detonation of the Composite A5 causes fragmentation of the projectile body on the target and forms an armor piercing jet created by the copper shaped-charge liner, which is capable of penetrating a minimum of three inches of Rolled Homogeneous Armor (RHA) plate. This item is Code A, approved for service use.

(E12000) CTG 40mm M583A1 White Star Parachute cartridge is a cartridge designed for illumination and signaling with less weight and bulk and greater accuracy than comparable handheld signals. They are fired from a 40mm Grenade Launcher M203 and M320. The cartridge is fired to a height of approximately 600 feet, where the parachute is deployed, lowering the candle at 7 feet per second. The candle is illuminated for approximately 40 seconds and is visible to an air observer at a slant range of at least 3 miles from 300 feet altitude. This item is Code A, approved for service use.

(E12601) CTG 40mm Low Velocity M433 is a High Explosive Dual Purpose (HEDP) cartridge fired from the M203 and M320 Grenade Launchers to a max range of 400 meters. The M433 cartridge consists of an aluminum projectile assembly with a Comp A5 high explosive charge, Point Initiating Base Detonating (PIBD) fuze assembly with a Spitback charge, copper cone liner, and aluminum cartridge case. Upon impact, detonation of the Comp A5 causes fragmentation of the projectile body on the target and forms an armor piercing jet created by the copper shaped-charge liner, which is capable of penetrating a minimum of two inches of Rolled Homogeneous Armor (RHA) plate. In FY 2021, this item will transition to an improved version for lethality (fragmentation) and accuracy, as the M433E1 under the new DODIC BA51. This item is code B, not approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

(E74315) The 40mm Practice M918/M385A1 Mixed Belt cartridge configuration for the MK19 Grenade Machine Gun is a high velocity training projectile with realistic signature effects providing sufficient flash, smoke, and sound upon impact to be seen/heard out to 1,200 meters. In addition to providing audible/visual signature for day or night firing, the mixed belt for MK19 Grenade Machine Gun will minimize hazards to troops in the training area. This item is Code A, approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/
Medium Cal Ammunition **P-1 Line Item Number / Title:**
3222ER8001 / CTG, 40mm, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E05610 / CTG, 40mm TP-Day/Nite/Ther,Lo Vel M781E1, f/M203GL [BA54]	P-5a, P-21	B		- / 57.000	- / 11.206	- / 17.576	- / 12.845	- / -	- / 12.845
P-5	E05611 / CTG, 40mm TP-Day/Nite/Ther,Hi Vel,M918E1 f/MK19Gmg [BA55]	P-5a, P-21	B		- / 166.761	- / 55.626	- / 2.931	- / 95.905	- / -	- / 95.905
P-5	E11800 / CTG, 40mm HEDP, M430A1 Series f/MK19 MG [B542]		A		- / 730.923	- / 2.949	- / -	- / -	- / -	- / -
P-5	E12000 / CTG 40MM WHITE STAR PARA M583 [B535]		A		- / 59.434	- / -	- / 0.445	- / -	- / -	- / -
P-5	E12601 / CTG, 40mm HEDP, M433 f/M203 Grenade Launcher	P-5a	B		- / 542.414	- / -	- / -	- / 5.888	- / -	- / 5.888
P-5	E74315 / CTG, 40mm Practice, M918/M385A1 w/M16A2 Lnk f/MK19	P-5a	A		- / 895.408	- / -	- / 83.000	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / 2,451.940	- / 69.781	- / 103.952	- / 114.638	- / -	- / 114.638

*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 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense (DoD) Instruction 3000.04 (Munitions Requirements Process) and Army Regulation (AR) 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base procurement dollars in the amount of \$114.638 million support procurement of 4.972 million cartridges in support of the National Defense Strategy and Combatant Command (COCOM) requirements. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of 40MM ALL TYPES when possible.

(E05610) CTG, 40MM, M781E1 Low Velocity Day Night Thermal - This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$12.845 million support the procurement of 0.906 million cartridges.
 Type classification date: 31 December 2020, Limited Procurement

(E05611) CTG, 40MM, M918E1 High Velocity Day Night Thermal - This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$95.905 million support the procurement of 4.048 million cartridges.
 Type classification date: 31 December 2019, Limited Procurement

(E11800) CTG 40MM High Velocity HEDP M430A1 F/MK19 MG - This is a war reserve item used in combat. The request builds a war reserve inventory in accordance with the Army's procurement goals. There is no FY 2021 funding request.
 Type Classification Date: 1971

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 30: Small/ Medium Cal Ammunition		P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E12000) CTG 40mm White Star Para M583A1 - This is a war reserve item used in combat. The request builds a war reserve inventory in accordance with the Army's procurement goals. There is no FY 2021 funding request. Type classification date: 1972</p> <p>(E12601) CTG 40MM Low Velocity HEDP M433E1 - This is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$5.888 million support the procurement of 0.019 million cartridges. E12601 is a New Start in FY 2021. Type classification date: PENDING</p> <p>(E74315) CTG 40MM PRAC, M918/M385A1 - This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: 1985</p>		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types	Item Number / Title [DODIC]: E05610 / CTG, 40mm TP-Day/Nite/ Ther,Lo Vel M781E1, f/M203GL [BA54]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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)	57.000	11.206	17.576	12.845	-	12.845
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	57.000	11.206	17.576	12.845	-	12.845
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	57.000	11.206	17.576	12.845	-	12.845

(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)	-	-	-	-	-	-

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																		
COMPLETE ROUND ^(†)	11.08	4,727,660	52.382	14.98	604,145	9.050	12.48	1,267,928	15.824	12.67	905,969	11.479	-	-	-	12.67	905,969	11.479
Subtotal: Recurring Cost	-	-	52.382	-	-	9.050	-	-	15.824	-	-	11.479	-	-	-	-	-	11.479
Subtotal: Hardware Cost	-	-	52.382	-	-	9.050	-	-	15.824	-	-	11.479	-	-	-	-	-	11.479
Support - Acceptance Testing Cost																		
First Article Test	-	-	0.320	-	-	-	-	-	0.132	-	-	0.103	-	-	-	-	-	0.103
Subtotal: Support - Acceptance Testing Cost	-	-	0.320	-	-	-	-	-	0.132	-	-	0.103	-	-	-	-	-	0.103
Support - Product Improvement Cost																		
Reliability	-	-	-	-	-	0.200	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	0.200	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	4.287	-	-	1.942	-	-	1.615	-	-	1.260	-	-	-	-	-	1.260
Subtotal: Support - Production Engineering Cost	-	-	4.287	-	-	1.942	-	-	1.615	-	-	1.260	-	-	-	-	-	1.260
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.010	-	-	0.014	-	-	0.005	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	0.010	-	-	0.014	-	-	0.005	-	-	0.004	-	-	-	-	-	0.004

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types	Item Number / Title [DODIC]: E05610 / CTG, 40mm TP-Day/Nite/ Ther,Lo Vel M781E1, f/M203GL [BA54]
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	57.000	-	-	11.206	-	-	17.576	-	-	12.845	-	-	-	-	-	12.845

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types				Item Number / Title [DODIC]: E05610 / CTG, 40mm TP-Day/Nite/ Ther,Lo Vel M781E1, f/M203GL [BA54]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Jul 2021	604,145	14.98	Y		
COMPLETE ROUND ^(†)		2020	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Jul 2021	1,267,928	12.48	Y		
COMPLETE ROUND ^(†)		2021	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Jul 2022	905,969	12.67	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army			Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types	
Item Number / Title [DODIC]: E05610 / CTG, 40mm TP-Day/Nite/ Ther,Lo Vel M781E1, f/M203GL [BA54]			

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2020												Fiscal Year 2021												B A L A N C E
O C C O #	M F R Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 1 9	B A L D U E A S O F 1 O C T	Calendar Year 2020												Calendar Year 2021												
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	
COMPLETE ROUND																														
Prior Years Deliveries: 4727660																														
2	2019	ARMY	.604	.000	.604																									
2	2020	ARMY	1.268	.000	1.268																									
2	2020	MC (+)	.193	.000	.193																									
2	2020	Total	1.461	.000	1.461																									
1	2021	AF (+)	.093	.000	.093																									
1	2021	ARMY	.906	.000	.906																									
1	2021	MC (+)	.767	.000	.767																									
1	2021	Total	1.766	.000	1.766																									

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types										Item Number / Title [DODIC]: E05610 / CTG, 40mm TP-Day/Nite/ Ther,Lo Vel M781E1, f/M203GL [BA54]									

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2022															Fiscal Year 2023															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 1	BAL D U E A S O F 1 O C T	Calendar Year 2022															Calendar Year 2023															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
COMPLETE ROUND																																					
Prior Years Deliveries: 4727660																																					
	2	2019	ARMY	.604	.375	.229	.125	.104																										.000			
	2	2020	ARMY	1.268	.317	.951	.106	.106	.106	.106	.106	.106	.106	.106	.106																			.000			
	2	2020	MC (+)	.193	.048	.145	.016	.016	.016	.016	.016	.016	.016	.016	.016																			.000			
	2	2020	Total	1.461	.365	1.096	.122	.122	.122	.122	.122	.122	.122	.122	.122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
	1	2021	AF (+)	.093	.000	.093	-	-	-	-	-	-	-	-	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008				.000				
	1	2021	ARMY	.906	.000	.906	-	-	-	-	-	-	-	-	.076	.075	.075	.075	.075	.075	.075	.075	.075	.075	.075	.075	.075	.075	.075				.000				
	1	2021	MC (+)	.767	.000	.767	-	-	-	-	-	-	-	-	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064				.000				
	1	2021	Total	1.766	.000	1.766	-	-	-	-	-	-	-	-	.147	.147	.147	.147	.147	.147	.147	.147	.147	.147	.147	.147	.147	.147	.147	.147	-	-	-	.000			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types
		Item Number / Title [DODIC]: E05610 / CTG, 40mm TP-Day/Nite/ Ther,Lo Vel M781E1, f/M203GL [BA54]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TO BE SELECTED - TBS01	100	125,000	375,000	6	6	16	22	6	6	16	22
2	GENERAL DYNAMICS ORD & TAC - MARION, IL	100	125,000	375,000	6	6	16	22	6	6	16	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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types	Item Number / Title [DODIC]: E05611 / CTG, 40mm TP-Day/Nite/ Ther,Hi Vel,M918E1 f/MK19Gmg [BA55]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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)	166.761	55.626	2.931	95.905	-	95.905
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	166.761	55.626	2.931	95.905	-	95.905
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	166.761	55.626	2.931	95.905	-	95.905

(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																		
COMPLETE ROUND ^(†)	20.36	7,633,336	155.415	19.96	2,560,068	51.099	-	-	-	21.82	4,047,535	88.317	-	-	-	21.82	4,047,535	88.317
Subtotal: Recurring Cost	-	-	155.415	-	-	51.099	-	-	-	-	-	88.317	-	-	-	-	-	88.317
Subtotal: Hardware Cost	-	-	155.415	-	-	51.099	-	-	-	-	-	88.317	-	-	-	-	-	88.317
Support - Acceptance Testing Cost																		
First Article Test	-	-	0.409	-	-	-	-	-	-	-	-	0.343	-	-	-	-	-	0.343
Subtotal: Support - Acceptance Testing Cost	-	-	0.409	-	-	-	-	-	-	-	-	0.343	-	-	-	-	-	0.343
Support - Product Improvement Cost																		
Production Qualification Test	-	-	-	-	-	-	-	-	0.166	-	-	-	-	-	-	-	-	-
Safety	-	-	-	-	-	-	-	-	2.162	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	-	-	-	2.328	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	10.917	-	-	4.480	-	-	0.596	-	-	7.238	-	-	-	-	-	7.238
Subtotal: Support - Production Engineering Cost	-	-	10.917	-	-	4.480	-	-	0.596	-	-	7.238	-	-	-	-	-	7.238
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.020	-	-	0.014	-	-	0.007	-	-	0.006	-	-	-	-	-	0.006

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types	Item Number / Title [DODIC]: E05611 / CTG, 40mm TP-Day/Nite/ Ther,Hi Vel,M918E1 f/MK19Gmg [BA55]
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.020	-	-	0.014	-	-	0.007	-	-	0.006	-	-	-	-	-	0.006
Support - System Test and Evaluation Cost																		
Test and Evaluation Support	-	-	-	-	-	0.034	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - System Test and Evaluation Cost</i>	-	-	-	-	-	0.034	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	166.761	-	-	55.626	-	-	2.931	-	-	95.905	-	-	-	-	-	95.905

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types				Item Number / Title [DODIC]: E05611 / CTG, 40mm TP-Day/Nite/ Ther,Hi Vel,M918E1 f/MK19Gmg [BA55]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Jul 2020	2,560,068	19.96	Y		
COMPLETE ROUND ^(†)		2021	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Jul 2022	4,047,535	21.82	Y		

^(†) indicates the presence of a P-21

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

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types	Item Number / Title [DODIC]: E05611 / CTG, 40mm TP-Day/Nite/ Ther,Hi Vel,M918E1 f/MK19Gmg [BA55]
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Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2019													Fiscal Year 2020													B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 8	BAL D U E A S O F 1 O C T	Calendar Year 2019													Calendar Year 2020													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

COMPLETE ROUND

Prior Years Deliveries: 7633336

O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 8	BAL D U E A S O F 1 O C T	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	B A L A N C E
	1	2019	ARMY	2.560	.000	2.560																									1.920
	2	2021	ARMY	4.048	.000	4.048																									4.048
	2	2021	MC (†)	.671	.000	.671																									.671
	2	2021	Total	4.719	.000	4.719																									4.719

O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 8	BAL D U E A S O F 1 O C T	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	B A L A N C E

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types										Item Number / Title [DODIC]: E05611 / CTG, 40mm TP-Day/Nite/ Ther,Hi Vel,M918E1 f/MK19Gmg [BA55]									

Cost Elements <i>(Units in Millions, * = < 500)</i>					Fiscal Year 2021															Fiscal Year 2022															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 0	BAL D U E A S O F 1 O C T	Calendar Year 2021															Calendar Year 2022															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
COMPLETE ROUND																																					
Prior Years Deliveries: 7633336																																					
	1	2019	ARMY	2.560	.640	1.920	.213	.213	.213	.213	.213	.213	.213	.213	.213	.213																			.000		
	2	2021	ARMY	4.048	.000	4.048											A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.337	.337	.337	3.036	
	2	2021	MC (†)	.671	.000	.671										A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.056	.056	.056	.503	
	2	2021	Total	4.719	.000	4.719										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.393	.393	.393	3.539	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types
		Item Number / Title [DODIC]: E05611 / CTG, 40mm TP-Day/Nite/ Ther,Hi Vel,M918E1 f/MK19Gmg [BA55]

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2023												Fiscal Year 2024												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 2	BAL D U E A S O F 1 O C T	Calendar Year 2023												Calendar Year 2024												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
Prior Years Deliveries: 7633336																															
	1	2019	ARMY	2.560	2.560	.000																							.000		
	2	2021	ARMY	4.048	1.012	3.036	.337	.337	.337	.337	.337	.337	.337	.337															.000		
	2	2021	MC (†)	.671	.168	.503	.056	.056	.056	.056	.056	.056	.056	.056														.000			
	2	2021	Total	4.719	1.180	3.539	.393	.393	.393	.393	.393	.393	.393	.393	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types
Item Number / Title [DODIC]: E05611 / CTG, 40mm TP-Day/Nite/ Ther,Hi Vel,M918E1 f/MK19Gmg [BA55]		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	AMERICAN ORDNANCE LLC (IAAP) - MIDDLETOWN, IA	100	250,000	850,000	6	6	16	22	6	6	16	22
2	TO BE SELECTED - TBS01	100	250,000	600,000	6	6	16	22	6	6	16	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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types
		Item Number / Title [DODIC]: E11800 / CTG, 40mm HEDP, M430A1 Series f/MK19 MG [B542]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	730.923	2.949	-	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	730.923	2.949	-	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	730.923	2.949	-	-	-	-

(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																		
COMPLETE ROUND	49.91	14,525,141	724.950	46.86	45,192	2.118	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	724.950	-	-	2.118	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	724.950	-	-	2.118	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	5.926	-	-	0.824	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Production Engineering Cost	-	-	5.926	-	-	0.824	-	-	-	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.048	-	-	0.008	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Quality Assurance Cost	-	-	0.048	-	-	0.008	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	730.923	-	-	2.949	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types	Item Number / Title [DODIC]: E12000 / CTG 40MM WHITE STAR PARA M583 [B535]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	59.434	-	0.445	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	59.434	-	0.445	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	59.434	-	0.445	-	-	-

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	61.01	947,762	57.823	-	-	-	68.01	4,211	0.286	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	57.823	-	-	-	-	-	0.286	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	57.823	-	-	-	-	-	0.286	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
First Article Test	-	-	0.353	-	-	-	-	-	0.143	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.353	-	-	-	-	-	0.143	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.258	-	-	-	-	-	0.016	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.258	-	-	-	-	-	0.016	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	59.434	-	-	-	-	-	0.445	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types
		Item Number / Title [DODIC]: E12601 / CTG, 40mm HEDP, M433 f/ M203 Grenade Launcher

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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)	542.414	-	-	5.888	-	5.888
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	542.414	-	-	5.888	-	5.888
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	542.414	-	-	5.888	-	5.888

(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																		
COMPLETE ROUND ^(†)	68.70	7,894,593	542.359	-	-	-	-	-	-	199.59	18,520	3.696	-	-	-	199.59	18,520	3.696
Subtotal: Recurring Cost	-	-	542.359	-	-	-	-	-	-	-	-	3.696	-	-	-	-	-	3.696
Subtotal: Hardware Cost	-	-	542.359	-	-	-	-	-	-	-	-	3.696	-	-	-	-	-	3.696
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	-	-	-	1.809	-	-	-	-	-	1.809
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	-	-	-	1.809	-	-	-	-	-	1.809
Support - Production Engineering Cost																		
Production Engineering	-	-	0.055	-	-	-	-	-	-	-	-	0.375	-	-	-	-	-	0.375
Subtotal: Support - Production Engineering Cost	-	-	0.055	-	-	-	-	-	-	-	-	0.375	-	-	-	-	-	0.375
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.008	-	-	-	-	-	0.008
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	-	-	-	-	-	-	0.008	-	-	-	-	-	0.008
Gross/Weapon System Cost	-	-	542.414	-	-	-	-	-	-	-	-	5.888	-	-	-	-	-	5.888

Remarks:

Unit price increase from prior years to FY 2021 due to transition to enhanced version for lethality (fragmentation) and accuracy.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types	Item Number / Title [DODIC]: E12601 / CTG, 40mm HEDP, M433 f/ M203 Grenade Launcher
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types					Item Number / Title [DODIC]: E12601 / CTG, 40mm HEDP, M433 f/ M203 Grenade Launcher				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND		2021	AMTEC CORPORATION / JANESVILLE, WI	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Aug 2022	18,520	199.59	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types	Item Number / Title [DODIC]: E74315 / CTG, 40mm Practice, M918/ M385A1 w/M16A2 Lnk f/MK19

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	895.408	-	83.000	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	895.408	-	83.000	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	895.408	-	83.000	-	-	-

(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 Cost																		
Recurring Cost																		
Complete Round ^(†)	-	-	895.408	-	-	-	30.00	2,543,700	76.311	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>895.408</i>	-	-	-	-	-	<i>76.311</i>	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	895.408	-	-	-	-	-	76.311	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	0.160	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.160	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	6.529	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	6.529	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	895.408	-	-	-	-	-	83.000	-	-	-	-	-	-	-	-	-

^(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 3222ER8001 / CTG, 40mm, All Types				Item Number / Title [DODIC]: E74315 / CTG, 40mm Practice, M918/ M385A1 w/M16A2 Lnk f/MK19					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round		2020	AMTEC CORPORATION / JANESVILLE, WI	Option / FFP	ROCK ISLAND ARSENAL, IL	Jul 2020	Jul 2022	2,543,700	30.00	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	554.837	45.498	49.580	31.222	-	31.222	31.748	32.280	32.833	32.833	-	810.831
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	554.837	45.498	49.580	31.222	-	31.222	31.748	32.280	32.833	32.833	-	810.831
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	554.837	45.498	49.580	31.222	-	31.222	31.748	32.280	32.833	32.833	-	810.831

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

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

Description:

(E89600) 60MM Mortar, All Types
This line includes 60mm Mortar Ammunition, All Types.

The 60mm Mortar cartridges are designed for use with the M224A1 Lightweight Company Mortar System (LWCMS) used by the Stryker Brigade Combat Teams as well as light infantry battalions including Airborne, Air Assault and Ranger. The short minimum range of the M224 makes the 60mm mortar ammunition well suited for close protective fires against an assaulting enemy, for block-to-block fighting in cities, and combat over close terrain with restricted visibility.

(E72199) CTG, 60mm Mortar HE ENFRAG, M1061 Series w/MOFM

The M1061, 60mm High Explosive Enhanced Fragmentation (EF) cartridge with Multi Option Fuze for Mortars (MOFM) (Range 70 meter minimum to 3,400 meter maximum) is used against personnel and a higher category of materiel target sets providing both fragmentation and blast effect. This round uses the insensitive main charge explosive PBNX-110. Lethality is maintained by an enhanced fragmentation warhead. The M1061 EF uses the highly reliable and robust electronic countermeasure resistant M734A1 multi-option fuze. When the fuze is set in the proximity mode, it functions at a height over the target that is optimized for lethality.

This item is Code A, approved for service use.

(E85700) CTG, 60mm Mortar IR ILLUM, M767 Series w/MTSQ Fuze

The M767 cartridge is a fin stabilized, mortar cartridge that consists of a M776 Mechanical Time Superquick (MTSQ) fuze, a thin wall steel body tube and aluminum tail cone that contains the payload (parachute and canister), and a fin assembly that contains the ignition cartridge and propelling charges. The payload is base ejected and upon ignition produces infrared (IR) illumination. The advantage of the infrared over conventional illumination is that there is minimal visible light. This reduces the possibility of exposing forward friendly troop positions while also allowing covert adjustment of fire at greater observation distances through use of passive Night Vision Devices (NVD). The M721/M767 Illumination cartridges (Range 300 meter minimum to 3,175 meter maximum) are ballistically similar to the M720A1 HE cartridge, allowing a gun to illuminate and fire on the same target without adjustments.

This item is Code A, approved for service use.

(E92200) CTG, 60mm Mortar FRTR, M769 Series w/Practice Fuze

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition		P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>The M769 is a low-cost, full range, training round (FRTR) that will replace a percentage of the standard HE rounds used in 60mm mortar training. The M769 FRTR (Range 70 meter minimum to 3,500 meter maximum) has been designed to provide the user with realistic training at a fraction of the cost. It is identical in shape, size and weight to the M720/M720A1 High Explosive cartridges. The flash, bang and smoke signature provided by the M775 fuze is channeled to exhaust holes in the rear of the cartridge through the use of a center vent tube. This item is Code A, approved for service use.</p> <p>(E92900) CTG, 60mm Mortar HE, M768 Series w/PD Fuze The 60mm High Explosive (HE) Cartridges are Insensitive Munitions (IM) enhanced, HE rounds. The M768 High Explosive cartridge (Range 70 meter minimum to 3,400 meter maximum) is used with the new M783 dual safety, point detonating/delay fuze, tail fin assembly, and high fragmentation steel (HF-1) shell body loaded with approximately 2 pounds. of an IM explosive. This cartridge is used primarily in training because it is significantly less expensive than the M720A1, the preferred war fighting cartridge. However, the M768 is lethal and can be used in combat. This item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition

P-1 Line Item Number / Title:
0050E89600 / 60MM Mortar, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E72199 / CTG, 60mm Mortar HE ENFRAG, M1061 Series w/MOFM [BA42]	P-5a	A		- / 61.519	- / 17.457	- / 10.964	- / -	- / -	- / -
P-5	E85700 / CTG, 60mm Mortar IR ILLUM, M767 Series w/MTSQ Fuze [BA04]	P-5a	A		- / 52.656	- / -	- / 8.700	- / -	- / -	- / -
P-5	E92200 / CTG, 60mm Mortar FRTR, M769 Series w/Practice Fuze [BA15]	P-5a	A		- / 173.348	- / 12.772	- / 14.433	- / 10.201	- / -	- / 10.201
P-5	E92900 / CTG, 60mm Mortar HE, M768 Series w/PD Fuze [BA45]	P-5a	A		- / 267.314	- / 15.269	- / 15.483	- / 21.021	- / -	- / 21.021
P-40	Total Gross/Weapon System Cost				- / 554.837	- / 45.498	- / 49.580	- / 31.222	- / -	- / 31.222

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 total base procurement dollars in the amount of \$31.222 million supports the procurement of 93,335 cartridges.

E72199 - CTG, 60mm Mortar HE ENFRAG, M1061 Series w/MOFM
This is a war reserve item used in combat. There is no FY 2021 funding request.
TYPE CLASSIFICATION DATE: 2013

E85700 - CTG, 60mm Mortar IR ILLUM, M767 Series w/MTSQ Fuze
This is a training standard item used in training and combat. There is no FY 2021 funding request.
TYPE CLASSIFICATION DATE: DECEMBER 1999

E92200 - CTG, 60mm Mortar FRTR, M769 Series w/Practice Fuze
This is a training unique item not used in combat. FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Total base procurement dollars in the amount of \$10.201 million supports the procurement of 53,387 rounds.
TYPE CLASSIFICATION DATE: 2001

E92900 - CTG, 60mm Mortar HE, M768 Series w/PD Fuze

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition		P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
This is a training standard item used in training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Total base procurement dollars in the amount of \$21.021 million supports the procurement of 39,948 cartridges. TYPE CLASSIFICATION DATE: 2001		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types
		Item Number / Title [DODIC]: E72199 / CTG, 60mm Mortar HE ENFRAG, M1061 Series w/MOFM [BA42]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	61.519	17.457	10.964	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	61.519	17.457	10.964	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	61.519	17.457	10.964	-	-	-

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	599.88	35,890	21.530	584.80	14,202	8.305	720.06	8,245	5.937	-	-	-	-	-	-	-	-	-
FUZE MOFM, M734A1 ^(†)	267.52	36,967	9.889	360.86	14,628	5.279	280.61	8,492	2.383	-	-	-	-	-	-	-	-	-
M702 IGNITION CARTRIDGE ^(†)	14.14	36,967	0.523	17.77	14,628	0.260	18.12	8,492	0.154	-	-	-	-	-	-	-	-	-
PROPELLANT CHARGE, M236 ^(†)	10.58	147,866	1.564	14.46	58,512	0.846	12.83	33,969	0.436	-	-	-	-	-	-	-	-	-
FIN ASSEMBLY M27 ^(†)	7.32	36,967	0.271	7.65	14,628	0.112	7.54	8,492	0.064	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	33.777	-	-	14.802	-	-	8.974	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	33.777	-	-	14.802	-	-	8.974	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.517	-	-	0.263	-	-	0.120	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.517	-	-	0.263	-	-	0.120	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	27.226	-	-	2.392	-	-	1.870	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types	Item Number / Title [DODIC]: E72199 / CTG, 60mm Mortar HE ENFRAG, M1061 Series w/MOFM [BA42]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	27.226	-	-	2.392	-	-	1.870	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	61.519	-	-	17.457	-	-	10.964	-	-	-	-	-	-	-	-	-

Remarks:

Unit price increase in FY 2020 is due to quantity reduction.

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types				Item Number / Title [DODIC]: E72199 / CTG, 60mm Mortar HE ENFRAG, M1061 Series w/MOFM [BA42]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2019	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	Option / FFP	PICATINNY ARSENAL, NJ	Dec 2018	Dec 2021	14,202	584.80	Y		
LOAD, ASSEMBLE, PACK (LAP)		2020	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	Option / FFP	PICATINNY ARSENAL, NJ	May 2020	May 2023	8,245	720.06	Y		
FUZE MOFM, M734A1		2019	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2021	14,628	360.86	Y		
FUZE MOFM, M734A1		2020	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	Option / FFP	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2022	8,492	280.62	Y		
M702 IGNITION CARTRIDGE		2019	PYROTECHNIQUE BY GRUCCI INC / RADFORD, VA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	14,628	17.77	Y		
M702 IGNITION CARTRIDGE		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	8,492	18.12	Y		
PROPELLANT CHARGE, M236		2019	GENERAL DYNAMICS ORD & TAC / MARION, IL	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	58,512	14.46	Y		
PROPELLANT CHARGE, M236		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	33,969	12.84	Y		
FIN ASSEMBLY M27		2019	GAYSTON CORPORATION / MIAMISBURG, OH	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Dec 2018	Aug 2020	14,628	7.65	Y		
FIN ASSEMBLY M27		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	8,492	7.55	Y		

Remarks:

M27 FINS: IDIQ awarded (FY 2017) to multiple contractors. Requirements are competed among the following contractors: Gayston, Springboro, OH; Flexible Concepts Elkhart, IN. Ignition Cartridges: IDIQ awarded (FY 2018) to multiple contractors. Requirements are competed among the following contractors: Nammo Pocal INC. , Scranton, PA and Pyrotechnique by Grucci INC., Radford, VA. Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements are competed among the following contractors: American Ordnance, Middletown, IA; and General Dynamics, Marion, IL.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types	Item Number / Title [DODIC]: E85700 / CTG, 60mm Mortar IR ILLUM, M767 Series w/MTSQ Fuze [BA04]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	52.656	-	8.700	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	52.656	-	8.700	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	52.656	-	8.700	-	-	-

(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)	-	-	-	-	-	-

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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	109.80	11,648	1.279	-	-	-	167.46	11,260	1.886	-	-	-	-	-	-	-	-	-
FIN ASSEMBLY M27 ^(†)	7.89	11,997	0.095	-	-	-	7.54	11,597	0.087	-	-	-	-	-	-	-	-	-
M702 IGNITION CARTRIDGE ^(†)	14.49	11,997	0.174	-	-	-	18.12	11,597	0.210	-	-	-	-	-	-	-	-	-
PROPELLANT CHARGE, M235 ^(†)	9.26	47,990	0.444	-	-	-	13.51	46,391	0.627	-	-	-	-	-	-	-	-	-
FUZE MTSQ, M776 ^(†)	225.52	11,997	2.706	-	-	-	250.05	11,597	2.900	-	-	-	-	-	-	-	-	-
BODY TUBE, 60MM ILLUM ^(†)	26.84	11,997	0.322	-	-	-	17.41	11,597	0.202	-	-	-	-	-	-	-	-	-
TAIL CONE, 60MM ILLUM ^(†)	20.16	11,997	0.242	-	-	-	16.84	11,597	0.195	-	-	-	-	-	-	-	-	-
PARACHUTE, 60MM ^(†)	22.00	11,997	0.264	-	-	-	23.92	11,597	0.277	-	-	-	-	-	-	-	-	-
IR ILLUM CANNISTER, 60MM ^(†)	101.96	11,997	1.223	-	-	-	108.73	11,597	1.261	-	-	-	-	-	-	-	-	-
FIBER CONTAINER PA 175, 60MM ^(†)	3.47	11,997	0.042	-	-	-	3.60	11,597	0.042	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types	Item Number / Title [DODIC]: E85700 / CTG, 60mm Mortar IR ILLUM, M767 Series w/MTSQ Fuze [BA04]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
METAL CONTAINER PA191, 60MM ^(t)	48.60	1,500	0.073	-	-	-	53.36	1,407	0.075	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	6.863	-	-	-	-	-	7.762	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	6.863	-	-	-	-	-	7.762	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.187	-	-	-	-	-	0.090	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.187	-	-	-	-	-	0.090	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	45.606	-	-	-	-	-	0.848	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	45.606	-	-	-	-	-	0.848	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	52.656	-	-	-	-	-	8.700	-	-	-	-	-	-	-	-	-

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types	Item Number / Title [DODIC]: E85700 / CTG, 60mm Mortar IR ILLUM, M767 Series w/MTSQ Fuze [BA04]
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2020	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jan 2020	Jan 2022	11,260	167.46	Y		
FIN ASSEMBLY M27		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	11,597	7.54	Y		
M702 IGNITION CARTRIDGE		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	11,597	18.12	Y		
PROPELLANT CHARGE, M235		2020	TO BE SELECTED / TBS01	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	46,391	13.51	Y		
FUZE MTSQ, M776		2020	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Feb 2020	Oct 2021	11,597	250.05	Y		
BODY TUBE, 60MM ILLUM		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	11,597	17.41	Y		
TAIL CONE, 60MM ILLUM		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	11,597	16.84	Y		
PARACHUTE, 60MM		2020	YOLAND CORPORATION / BROOKLYN, NY	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	11,597	23.92	Y		
IR ILLUM CANNISTER, 60MM		2020	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2020	Jul 2021	11,597	108.73	Y		
FIBER CONTAINER PA 175, 60MM		2020	UNITED AMMUNITION CONTAINER / WYNNEWOOD, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	11,597	3.60	Y		
METAL CONTAINER PA191, 60MM		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	1,407	53.36	Y		

Remarks:
M27 FINS: IDIQ awarded (FY 2017) to multiple contractors. Requirements are competed among the following contractors: Gayston, Springboro, OH; Flexible Concepts Elkhart, IN. Ignition Cartridges: IDIQ awarded (FY 2018) to multiple contractors. Requirements are competed among the following contractors: Nammo Pocal INC., Scranton, PA and Pyrotechnique by Grucci INC., Radford, VA. Body Tube / Tail Cones: IDIQ awarded (FY 2018) to multiple contractors. Requirements are competed among the following contractors: Medico Industries Inc., Wilkes Barre, PA and Lewis Engineering Company, Marshall, TX. Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements are competed among the following contractors: American Ordnance, Middletown, IA; and General Dynamics, Marion, IL.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types	Item Number / Title [DODIC]: E92200 / CTG, 60mm Mortar FRTR, M769 Series w/Practice Fuze [BA15]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	173.348	12.772	14.433	10.201	-	10.201
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	173.348	12.772	14.433	10.201	-	10.201
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	173.348	12.772	14.433	10.201	-	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 Cost																		
Recurring Cost																		
Load, Assemble, Pack (LAP) ^(†)	18.28	129,410	2.366	18.53	73,000	1.353	19.42	74,474	1.446	19.94	53,387	1.065	-	-	-	19.94	53,387	1.065
Fuze Practice, M775 ^(†)	20.14	133,293	2.685	19.92	75,190	1.498	21.62	76,708	1.658	22.05	54,988	1.212	-	-	-	22.05	54,988	1.212
Shell Body, 60MM FRPC ^(†)	36.34	133,293	4.844	36.59	75,190	2.751	37.93	76,708	2.910	38.69	54,988	2.127	-	-	-	38.69	54,988	2.127
M702 Ignition Cartridge ^(†)	14.17	133,293	1.889	14.25	75,190	1.071	18.12	76,708	1.390	16.70	54,988	0.918	-	-	-	16.70	54,988	0.918
Propellant Charge, M235 ^(†)	11.10	533,169	5.918	14.46	300,760	4.349	13.51	306,832	4.145	14.79	219,954	3.253	-	-	-	14.79	219,954	3.253
Fin Assembly M27 ^(†)	7.41	133,293	0.988	7.10	75,190	0.534	7.54	76,708	0.578	7.69	54,988	0.423	-	-	-	7.69	54,988	0.423
<i>Subtotal: Recurring Cost</i>	-	-	18.689	-	-	11.556	-	-	12.128	-	-	8.999	-	-	-	-	-	8.999
<i>Subtotal: Hardware Cost</i>	-	-	18.689	-	-	11.556	-	-	12.128	-	-	8.999	-	-	-	-	-	8.999
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.887	-	-	0.165	-	-	0.508	-	-	0.386	-	-	-	-	-	0.386
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.887	-	-	0.165	-	-	0.508	-	-	0.386	-	-	-	-	-	0.386
Support - Production Engineering Cost																		
Production Engineering	-	-	153.772	-	-	1.051	-	-	1.797	-	-	0.816	-	-	-	-	-	0.816
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	153.772	-	-	1.051	-	-	1.797	-	-	0.816	-	-	-	-	-	0.816

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types	Item Number / Title [DODIC]: E92200 / CTG, 60mm Mortar FRTR, M769 Series w/Practice Fuze [BA15]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	173.348	-	-	12.772	-	-	14.433	-	-	10.201	-	-	-	-	-	10.201

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types					Item Number / Title [DODIC]: E92200 / CTG, 60mm Mortar FRTR, M769 Series w/Practice Fuze [BA15]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Load, Assemble, Pack (LAP)		2019	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jan 2021	73,000	18.53	Y		
Load, Assemble, Pack (LAP)		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2020	May 2022	74,474	19.42	Y		
Load, Assemble, Pack (LAP)		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2021	May 2023	53,387	19.94	Y		
Fuze Practice, M775		2019	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2019	Jun 2020	75,190	19.92	Y		
Fuze Practice, M775		2020	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	76,708	21.62	Y		
Fuze Practice, M775		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	54,988	22.05	Y		
Shell Body, 60MM FRPC		2019	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2018	Jun 2020	75,190	36.59	Y		
Shell Body, 60MM FRPC		2020	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	76,708	37.93	Y		
Shell Body, 60MM FRPC		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	54,988	38.69	Y		
M702 Ignition Cartridge		2019	PYROTECHNIQUE BY GRUCCI INC / RADFORD, VA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	75,190	14.25	Y		
M702 Ignition Cartridge		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	76,708	18.12	Y		
M702 Ignition Cartridge		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	54,988	16.70	Y		
Propellant Charge, M235		2019	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	300,760	14.46	Y		
Propellant Charge, M235		2020	TO BE SELECTED / TBS01	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	306,832	13.51	Y		
Propellant Charge, M235		2021	TO BE SELECTED / TBS01	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	219,954	14.79	Y		
Fin Assembly M27		2019	FLEXIBLE CONCEPTS, INC. / ELKHART, IN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Dec 2018	Jun 2020	75,190	7.10	Y		
Fin Assembly M27		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	76,708	7.54	Y		
Fin Assembly M27		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	54,988	7.69	Y		
Remarks:												

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types	Item Number / Title [DODIC]: E92200 / CTG, 60mm Mortar FRTR, M769 Series w/Practice Fuze [BA15]

M27 FINS: IDIQ awarded (FY 2017) to multiple contractors. Requirements are competed among the following contractors: Gayston, Springboro, OH; Flexible Concepts Elkhart, IN. Ignition Cartridges: IDIQ awarded (FY 2018) to multiple contractors. Requirements will be competed among the following contractors: Nammo Pocal INC., Scranton, PA and Pyrotechnique by Grucci INC., Radford, VA. Shell Bodies: IDIQ awarded (FY 2018) to Medico Industries, Wilkes Barre, PA. Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements are competed among the following contractors: American Ordnance, Middletown, IA; and General Dynamics, Marion, IL.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types	Item Number / Title [DODIC]: E92900 / CTG, 60mm Mortar HE, M768 Series w/PD Fuze [BA45]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	267.314	15.269	15.483	21.021	-	21.021
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	267.314	15.269	15.483	21.021	-	21.021
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	267.314	15.269	15.483	21.021	-	21.021

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	51.68	101,756	5.259	55.35	29,700	1.644	55.40	32,827	1.819	57.86	39,948	2.311	-	-	-	57.86	39,948	2.311
SHELL BODY (HF1), 60MM HE ^(†)	39.81	104,810	4.172	40.19	30,591	1.229	41.60	33,811	1.407	42.43	41,146	1.746	-	-	-	42.43	41,146	1.746
FIN ASSEMBLY M27 ^(†)	7.18	104,810	0.753	7.65	30,591	0.234	7.54	33,811	0.255	7.69	41,146	0.316	-	-	-	7.69	41,146	0.316
M702 IGNITION CARTRIDGE ^(†)	20.28	104,810	2.126	17.77	30,591	0.544	18.12	33,811	0.613	16.70	41,146	0.687	-	-	-	16.70	41,146	0.687
PROPELLANT CHARGE, M235 ^(†)	10.41	419,235	4.364	14.46	122,364	1.769	13.51	135,247	1.827	14.79	164,585	2.434	-	-	-	14.79	164,585	2.434
FUZE POINT DETONATOR M783 ^(†)	175.41	104,810	18.385	211.14	30,591	6.459	200.08	33,811	6.765	204.00	41,146	8.394	-	-	-	204.00	41,146	8.394
PBXW-12 BULK EXPLOSIVE ^(†)	-	-	-	85.74	1,782	0.153	70.74	1,839	0.130	89.20	2,396	0.214	-	-	-	89.20	2,396	0.214
EXPLOSIVE FILL IMX-104 ^(†)	22.76	305,268	6.948	20.23	89,100	1.802	22.78	98,481	2.243	24.39	119,844	2.923	-	-	-	24.39	119,844	2.923
<i>Subtotal: Recurring Cost</i>	-	-	<i>42.006</i>	-	-	<i>13.835</i>	-	-	<i>15.058</i>	-	-	<i>19.025</i>	-	-	-	-	-	<i>19.025</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>42.006</i>	-	-	<i>13.835</i>	-	-	<i>15.058</i>	-	-	<i>19.025</i>	-	-	-	-	-	<i>19.025</i>
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.707	-	-	0.199	-	-	0.270	-	-	0.313	-	-	-	-	-	0.313

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types	Item Number / Title [DODIC]: E92900 / CTG, 60mm Mortar HE, M768 Series w/PD Fuze [BA45]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.707	-	-	0.199	-	-	0.270	-	-	0.313	-	-	-	-	-	0.313
Support - Production Engineering Cost																		
Production Engineering	-	-	224.600	-	-	1.236	-	-	0.154	-	-	1.683	-	-	-	-	-	1.683
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	224.600	-	-	1.236	-	-	0.154	-	-	1.683	-	-	-	-	-	1.683
Gross/Weapon System Cost	-	-	267.314	-	-	15.269	-	-	15.483	-	-	21.021	-	-	-	-	-	21.021

Remarks:

FY 2021 Production Engineering increase reflects the pro-rated share for the family of 60mm mortar support.

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types					Item Number / Title [DODIC]: E92900 / CTG, 60mm Mortar HE, M768 Series w/PD Fuze [BA45]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2019	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2022	29,700	55.35	Y		
LOAD, ASSEMBLE, PACK (LAP)		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2020	May 2023	32,827	55.40	Y		
LOAD, ASSEMBLE, PACK (LAP)		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2021	May 2024	39,948	57.86	Y		
SHELL BODY (HF1), 60MM HE		2019	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2018	Jun 2020	30,591	40.19	Y		
SHELL BODY (HF1), 60MM HE		2020	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	33,811	41.60	Y		
SHELL BODY (HF1), 60MM HE		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	41,146	42.43	Y		
FIN ASSEMBLY M27		2019	GAYSTON CORPORATION / MIAMISBURG, OH	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Dec 2018	Jun 2020	30,591	7.65	Y		
FIN ASSEMBLY M27		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2020	33,811	7.54	Y		
FIN ASSEMBLY M27		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2021	41,146	7.69	Y		
M702 IGNITION CARTRIDGE		2019	PYROTECHNIQUE BY GRUCCI INC / RADFORD, VA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	30,591	17.77	Y		
M702 IGNITION CARTRIDGE		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	33,811	18.12	Y		
M702 IGNITION CARTRIDGE		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	41,146	16.70	Y		
PROPELLANT CHARGE, M235		2019	GENERAL DYNAMICS ORD & TAC / MARION, IL	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	122,364	14.46	Y		
PROPELLANT CHARGE, M235		2020	TO BE SELECTED / TBS01	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	135,247	13.51	Y		
PROPELLANT CHARGE, M235		2021	TO BE SELECTED / TBS01	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	164,585	14.79	Y		
FUZE POINT DETONATOR M783		2019	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	May 2019	Nov 2021	30,591	211.14	Y		
FUZE POINT DETONATOR M783		2020	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2022	33,811	200.08	Y		
FUZE POINT DETONATOR M783		2021	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2023	41,146	204.00	Y		
PBXW-12 BULK EXPLOSIVE		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2019	Mar 2021	1,782	85.74	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types				Item Number / Title [DODIC]: E92900 / CTG, 60mm Mortar HE, M768 Series w/PD Fuze [BA45]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
PBXW-12 BULK EXPLOSIVE		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	1,839	70.74	Y		
PBXW-12 BULK EXPLOSIVE		2021	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	2,396	89.20	Y		
EXPLOSIVE FILL IMX-104		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2019	Mar 2022	89,100	20.23	Y		
EXPLOSIVE FILL IMX-104		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2022	98,481	22.78	Y		
EXPLOSIVE FILL IMX-104		2021	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2023	119,844	24.39	Y		

Remarks:
 HE LAP: IDIQ awarded (FY 2017) to multiple contractors. Requirements are competed among the following contractors: Day and Zimmerman, Parsons, KS; American Ordnance, Middletown, IA; General Dynamics, Le Gardeur, QC, Canada.
 M27 FINS: IDIQ awarded (FY 2017) to multiple contractors. Requirements are competed among the following contractors: Gayston, Springboro, OH; Flexible Concepts Elkhart, IN. Ignition Cartridges: IDIQ awarded (FY 2018) to multiple contractors. Requirements are competed among the following contractors: Nammo Pocal INC., Scranton, PA and Pyrotechnique by Grucci INC., Radford, VA. Shell Body: IDIQ awarded (FY 2018) to Medico Industries, Wilkes Barre, PA.
 Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements are competed among the following contractors: American Ordnance, Middletown, IA; and General Dynamics, Marion, IL.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition	P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	712.326	47.887	61.873	42.857	-	42.857	35.901	44.595	37.208	46.250	-	1,028.897
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	712.326	47.887	61.873	42.857	-	42.857	35.901	44.595	37.208	46.250	-	1,028.897
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	712.326	47.887	61.873	42.857	-	42.857	35.901	44.595	37.208	46.250	-	1,028.897

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

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

Description:

This budget line includes 81mm Mortar Ammunition, All Types.

The 81mm Mortar cartridges are designed for use with the M252 Mortar Weapon System used by the Stryker Brigade Combat Teams as well as light infantry battalions including Airborne, Air Assault and Ranger.

(E18403) CTG, MORTAR, 81MM HE M821 W/MOFM

The 81mm High Explosive (HE) Cartridges are Insensitive Munitions (IM) enhanced. The 81mm HE Cartridges consist of a fuze, a threaded plastic fuze adapter, a High Fragmentation (HF)-1 steel projectile body loaded with approximately 3lbs. of IMX-104 explosive, a plastic obturating ring, a M24 Fin, the M220 Propelling Charges, and a M299 Ignition Cartridge. The M821A2 HE (Range 70 meter minimum to 5,859 meter maximum) also incorporates the highly reliable and robust electronic countermeasure resistant M734A1 multi-option fuze. When the fuze is set in the proximity mode, it functions at a height over the target that is optimized for lethality. The IM features of this cartridge reduce the vulnerability to unplanned stimuli, e.g. fire/heat, shock and impact. In order to maintain the required effectiveness while implementing IM features, the M821A4 cartridge incorporates warhead modifications in order to meet all requirements. Specifically, the warhead will consists of a Fragmentation Sleeve with an HF-1 Steel body. All other components are the same and utilize existing production lines and production contracts. These items are Code A, approved for service use.

(E18404) CTG, MORTAR, 81MM HE M889 SERIES W/PD FUZE

The 81mm High Explosive Cartridges are Insensitive Munitions (IM) enhanced. The 81mm HE Cartridges consist of a fuze, a threaded plastic fuze adapter, a HF-1 steel projectile body loaded with approximately 3lbs. of IMX-104 explosive, a plastic obturating ring, a M24 Fin, the M220 Propelling Charges, and a M299 Ignition Cartridge. The M889A4 HE (Range 70 meter minimum to 5,859 meter maximum) is used with the new M783 dual safety, point detonating/delay fuze. This cartridge is used primarily in training because it is significantly less expensive than the M821A2, the preferred war fighting cartridge. However, the M889A4 is lethal and can be used in combat. The IM features of this cartridge reduce the vulnerability to unplanned stimuli, e.g. fire/heat, shock and impact, while maintaining or exceeding the same level of effectiveness in combat. These items are Code A, approved for service use.

(E69600) CTG, MORTAR, 81MM FRTR M879 SERIES W/PRACTICE FUZE

The M879 is a low-cost, full range, training round (FRTR) that will replace a percentage of the standard HE rounds used in 81mm mortar training. The M879 FRPC (Range 70 meter minimum to 5,800 meter maximum) has been designed to provide the user with realistic training at a fraction of the cost. It is identical in shape, size and weight to the M889A4/M821A4 HE cartridges. The flash, bang and smoke signature provided by the M751 practice fuze is channeled to exhaust holes in the rear of the cartridge through the use of a center vent tube.

This item is Code A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition		P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E76200) CTG, MORTAR, 81MM RP SMOKE M819 SERIES W/MTSQ FUZE The M819 Cartridge is a fin stabilized thin wall steel body tube containing 28 pelletized red phosphorous (RP) wedges; it uses the highly reliable M772 Mechanical Time Super Quick (MTSQ) fuze. After a set time delay, the RP wedges are ejected and dispersed on the target to quickly produce an obscuring smoke screen. A full screen can be developed with 3 rounds as opposed to 15 rounds with the M375 series WP cartridge that is used to create smoke screens to cover movement of troops and/or disrupt visibility of enemy forces. This cartridge was modified to include Gas Absorbent Modules (GAMS) that absorb the phosphine gas emitted by the RP to keep the cartridge stable. The M819 (Range 300 meter minimum and 4,900 maximum) is range-matched to the 81mm High Explosive (HE) and Illumination cartridges. This item is code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition

P-1 Line Item Number / Title:
3584E76000 / 81MM Mortar, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E18403 / CTG, 81mm Mortar HE, M821 Series w/MOFM [CA66]	P-5a, P-21	A		- / 291.461	- / 10.630	- / 37.084	- / 17.742	- / -	- / 17.742
P-5	E18404 / CTG, 81mm Mortar HE, M889 Series w/PD Fuze [CA63]	P-5a	A		- / 146.136	- / 19.031	- / -	- / 11.309	- / -	- / 11.309
P-5	E69600 / CTG, 81mm FRTR, M879 Series w/Practice Fuze [C875]	P-5a	A		- / 177.850	- / 11.603	- / 16.154	- / 13.806	- / -	- / 13.806
P-5	E76200 / CTG, 81mm Mortar Smoke RP, M819 Series w/MTSQ Fuze [C870]	P-5a	A		- / 96.879	- / 6.623	- / 8.635	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / 712.326	- / 47.887	- / 61.873	- / 42.857	- / -	- / 42.857

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base procurement dollars in the amount of \$42.857 million supports procurement of 94,132 cartridges.

(E18403) CTG, MORTAR, 81MM HE M821 SERIES W/MOFM
This is a training standard item used in training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Total Base procurement dollars in the amount of \$17.742 million supports procurement of 16,924 cartridges.
TYPE CLASSIFICATION DATE: June 1996

(E18404) CTG, MORTAR 81MM HE M889 SERIES W/PD FUZE
This is a training standard item used in training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Total Base procurement dollars in the amount of \$11.309 million supports procurement of 18,220 cartridges.
TYPE CLASSIFICATION DATE: July 2009

(E69600) CTG, MORTAR, 81MM FRTR M879 SERIES W/PRACTICE FUZE
This is a training unique item not used in combat. FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Total Base procurement dollars in the amount of \$13.806 million supports procurement of 58,988 rounds.
TYPE CLASSIFICATION DATE: August 1986

(E76200) CTG, MORTAR, 81MM RP SMOKE M819 SERIES W/MTSQ FUZE
This is a training standard item used in training and combat. There is no FY 2021 funding request.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition		P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
TYPE CLASSIFICATION DATE: December 1986		

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Exhibit P-5, Cost Analysis: PB 2021 Army											Date: February 2020							
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33					P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types						Item Number / Title [DODIC]: E18403 / CTG, 81mm Mortar HE, M821 Series w/MOFM [CA66]							
ID Code (A=Service Ready, B=Not Service Ready) : A											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)				291.461		10.630			37.084			17.742			-		17.742	
Less PY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Net Procurement (P-1) (\$ in Millions)				291.461		10.630			37.084			17.742			-		17.742	
Plus CY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Total Obligation Authority (\$ in Millions)				291.461		10.630			37.084			17.742			-		17.742	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (\$ in Millions)				-		-			-			-			-		-	
Gross/Weapon System Unit Cost (\$ in 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	325.25	13,789	4.485	314.91	10,255	3.229	332.10	38,091	12.650	339.70	16,924	5.749	-	-	-	339.70	16,924	5.749
SHELL BODY, 81MM HE M821A4 ^(†)	81.60	14,203	1.159	81.48	10,562	0.861	83.22	39,233	3.265	84.89	17,431	1.480	-	-	-	84.89	17,431	1.480
FIN MORTAR CTG M24 F/81MM ^(†)	16.20	14,203	0.230	16.45	10,562	0.174	15.39	39,233	0.604	18.87	17,431	0.329	-	-	-	18.87	17,431	0.329
IGN CTG M299 ^(†)	14.91	14,203	0.212	14.91	10,562	0.157	15.51	39,233	0.609	15.82	17,431	0.276	-	-	-	15.82	17,431	0.276
PROPELLANT CHARGE, M658 ^(†)	14.75	56,811	0.838	12.89	42,251	0.545	13.51	156,935	2.120	13.78	69,727	0.961	-	-	-	13.78	69,727	0.961
FUZE MOFM, M734A1 ^(†)	269.74	14,203	3.831	360.86	10,562	3.811	280.61	39,233	11.009	312.12	17,431	5.441	-	-	-	312.12	17,431	5.441
PBXW-12 BULK EXPLOSIVE ^(†)	-	-	-	85.74	1,231	0.106	70.74	4,571	0.323	89.20	2,031	0.181	-	-	-	89.20	2,031	0.181
EXPLOSIVE FILL IMX-104 ^(†)	21.90	57,914	1.268	22.24	43,071	0.958	22.78	159,982	3.644	24.39	71,081	1.734	-	-	-	24.39	71,081	1.734
<i>Subtotal: Recurring Cost</i>	-	-	12.023	-	-	9.841	-	-	34.224	-	-	16.150	-	-	-	-	-	16.150
<i>Subtotal: Hardware Cost</i>	-	-	12.023	-	-	9.841	-	-	34.224	-	-	16.150	-	-	-	-	-	16.150
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.110	-	-	0.153	-	-	0.167	-	-	0.128	-	-	-	-	-	0.128

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Item Number / Title [DODIC]: E18403 / CTG, 81mm Mortar HE, M821 Series w/MOFM [CA66]		

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)
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.110	-	-	0.153	-	-	0.167	-	-	0.128	-	-	-	-	-	0.128
Support - Production Engineering Cost																		
Production Engineering	-	-	279.328	-	-	0.636	-	-	2.692	-	-	1.464	-	-	-	-	-	1.464
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	279.328	-	-	0.636	-	-	2.692	-	-	1.464	-	-	-	-	-	1.464
Gross/Weapon System Cost	-	-	291.461	-	-	10.630	-	-	37.084	-	-	17.742	-	-	-	-	-	17.742

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity:			P-1 Line Item Number / Title:					Item Number / Title [DODIC]:				
2034A / 01 / 33			3584E76000 / 81MM Mortar, All Types					E18403 / CTG, 81mm Mortar HE, M821 Series w/MOFM [CA66]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Apr 2019	Apr 2022	10,255	314.91	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2020	May 2023	38,091	332.10	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2021	May 2024	16,924	339.70	Y		
SHELL BODY, 81MM HE M821A4		2019	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Sep 2019	Mar 2021	10,562	81.48	Y		
SHELL BODY, 81MM HE M821A4		2020	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	39,233	83.22	Y		
SHELL BODY, 81MM HE M821A4		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	17,431	84.89	Y		
FIN MORTAR CTG M24 F/81MM		2019	FLEXIBLE CONCEPTS, INC. / ELKHART, IN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Dec 2018	Sep 2020	10,562	16.45	Y		
FIN MORTAR CTG M24 F/81MM		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	39,233	15.39	Y		
FIN MORTAR CTG M24 F/81MM		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	17,431	18.87	Y		
IGN CTG M299		2019	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	10,562	14.91	Y		
IGN CTG M299		2020	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	39,233	15.51	Y		
IGN CTG M299		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	17,431	15.82	Y		
PROPELLANT CHARGE, M658		2019	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	42,251	12.89	Y		
PROPELLANT CHARGE, M658		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	156,935	13.51	Y		
PROPELLANT CHARGE, M658		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	69,727	13.78	Y		
FUZE MOFM, M734A1		2019	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Aug 2021	10,562	360.86	Y		
FUZE MOFM, M734A1		2020	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	Option / FFP	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2022	39,233	280.61	Y		
FUZE MOFM, M734A1		2021	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	Option / FFP	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2023	17,431	312.12	Y		
PBXW-12 BULK EXPLOSIVE		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2019	Mar 2021	1,231	85.74	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types				Item Number / Title [DODIC]: E18403 / CTG, 81mm Mortar HE, M821 Series w/MOFM [CA66]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
PBXW-12 BULK EXPLOSIVE		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	4,571	70.74	Y		
PBXW-12 BULK EXPLOSIVE		2021	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	2,031	89.20	Y		
EXPLOSIVE FILL IMX-104		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2019	Mar 2022	43,071	22.24	Y		
EXPLOSIVE FILL IMX-104		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2022	159,982	22.78	Y		
EXPLOSIVE FILL IMX-104		2021	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2023	71,081	24.39	Y		

(†) indicates the presence of a P-21

Remarks:

Ignition Cartridges: IDIQ awarded (FY 2018) to Nammo Pocal Industries, Scranton, PA. HE LAP: IDIQ awarded (FY 2017) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Parsons, KS; General Dynamics, Le Gardeur, Canada; American Ordnance, Middletown, IA. HE Shell Bodes: IDIQ awarded (FY 2018) to Medico Industries, Wilkes Barre, PA. Fins: IDIQ awarded (FY 2017) to multiple contractors. Requirements will be competed among the following contractors: Gayston Corp., Springboro, OH and Flexible Concepts, Elkhart, IN.

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Exhibit P-21, Production Schedule: PB 2021 Army														Date: February 2020																											
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33														P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types														Item Number / Title [DODIC]: E18403 / CTG, 81mm Mortar HE, M821 Series w/MOFM [CA66]													

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2019														Fiscal Year 2020														B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019														Calendar Year 2020														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
LOAD, ASSEMBLE, PACK (LAP)																																			
Prior Years Deliveries: 13789																																			
	1	2019	ARMY	10.255	.000	10.255																								10.255					
	2	2020	ARMY	38.091	.000	38.091																								38.091					
	2	2020	MC ^(†)	52.476	.000	52.476																								52.476					
	2	2020	Total	90.567	.000	90.567																								90.567					
	2	2021	ARMY	16.924	.000	16.924																								16.924					
	2	2021	MC ^(†)	38.008	.000	38.008																								38.008					
	2	2021	Total	54.932	.000	54.932																								54.932					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33										P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types										Item Number / Title [DODIC]: E18403 / CTG, 81mm Mortar HE, M821 Series w/MOFM [CA66]									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2021													Fiscal Year 2022													B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021													Calendar Year 2022													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
LOAD, ASSEMBLE, PACK (LAP)																																	
Prior Years Deliveries: 13789																																	
1	2019	ARMY		10.255	.000	10.255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.255	.000			
2	2020	ARMY		38.091	.000	38.091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38.091				
2	2020	MC ^(†)		52.476	.000	52.476	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52.476				
2	2020	Total		90.567	.000	90.567	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90.567				
2	2021	ARMY		16.924	.000	16.924								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.924				
2	2021	MC ^(†)		38.008	.000	38.008								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38.008				
2	2021	Total		54.932	.000	54.932								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54.932				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33										P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types										Item Number / Title [DODIC]: E18403 / CTG, 81mm Mortar HE, M821 Series w/MOFM [CA66]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2023														Fiscal Year 2024														BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023														Calendar Year 2024														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
LOAD, ASSEMBLE, PACK (LAP)																																			
Prior Years Deliveries: 13789																																			
1	2019	ARMY		10.255	10.255	.000																							.000						
2	2020	ARMY		38.091	.000	38.091	-	-	-	-	-	-	-	6.000	6.000	6.000	6.000	6.000	6.000	6.000	2.091	-							.000						
2	2020	MC (+)		52.476	.000	52.476	-	-	-	-	-	-	-	6.000	6.000	6.000	6.000	6.000	6.000	3.909	12.567							.000							
2	2020	Total		90.567	.000	90.567	-	-	-	-	-	-	-	12.000	12.000	12.000	12.000	12.000	12.000	6.000	12.567							.000							
2	2021	ARMY		16.924	.000	16.924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000							
2	2021	MC (+)		38.008	.000	38.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000							
2	2021	Total		54.932	.000	54.932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000							
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types
		Item Number / Title [DODIC]: E18403 / CTG, 81mm Mortar HE, M821 Series w/MOFM [CA66]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	GEN DYNAMICS ORD & TAC SYS - - LE GARDEUR, CANADA	4,000	12,000	36,000	8	8	36	44	8	8	36	44
2	TO BE SELECTED - TBS01	4,000	12,000	30,000	8	8	36	44	8	8	36	44

(±) 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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types
		Item Number / Title [DODIC]: E18404 / CTG, 81mm Mortar HE, M889 Series w/PD Fuze [CA63]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	146.136	19.031	-	11.309	-	11.309
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	146.136	19.031	-	11.309	-	11.309
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	146.136	19.031	-	11.309	-	11.309

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	83.95	56,878	4.775	82.01	30,504	2.502	-	-	-	91.65	18,220	1.670	-	-	-	91.65	18,220	1.670
FUZE POINT DETONATOR M783 ^(†)	175.50	58,584	10.281	211.14	31,419	6.634	-	-	-	204.00	18,766	3.828	-	-	-	204.00	18,766	3.828
SHELL BODY, 81MM HE ^(†)	50.61	58,584	2.965	50.99	31,419	1.602	-	-	-	53.67	18,766	1.007	-	-	-	53.67	18,766	1.007
IGN CTG M299 ^(†)	14.74	58,584	0.864	14.91	31,419	0.468	-	-	-	15.82	18,766	0.297	-	-	-	15.82	18,766	0.297
CHG PROP 81MM M220 ^(†)	11.40	234,337	2.671	12.89	125,676	1.620	-	-	-	13.78	75,066	1.034	-	-	-	13.78	75,066	1.034
FIN MORTAR CTG M24 F/81MM ^(†)	16.04	58,584	0.940	16.45	31,419	0.517	-	-	-	18.87	18,766	0.354	-	-	-	18.87	18,766	0.354
PBXW-12 BULK EXPLOSIVE ^(†)	-	-	-	85.74	3,660	0.314	-	-	-	89.20	2,186	0.195	-	-	-	89.20	2,186	0.195
EXPLOSIVE FILL IMX-104 ^(†)	22.75	238,887	5.435	20.23	128,117	2.592	-	-	-	24.39	76,524	1.866	-	-	-	24.39	76,524	1.866
<i>Subtotal: Recurring Cost</i>	<i>-</i>	<i>-</i>	<i>27.931</i>	<i>-</i>	<i>-</i>	<i>16.248</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>10.252</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>10.252</i>
<i>Subtotal: Hardware Cost</i>	<i>-</i>	<i>-</i>	<i>27.931</i>	<i>-</i>	<i>-</i>	<i>16.248</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>10.252</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>10.252</i>
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.484	-	-	0.301	-	-	-	-	-	0.151	-	-	-	-	-	0.151
First Article Test	-	-	-	-	-	0.246	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Item Number / Title [DODIC]: E18404 / CTG, 81mm Mortar HE, M889 Series w/PD Fuze [CA63]		

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)
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.484	-	-	0.547	-	-	-	-	-	0.151	-	-	-	-	-	0.151
Support - Production Engineering Cost																		
Production Engineering	-	-	117.722	-	-	2.236	-	-	-	-	-	0.906	-	-	-	-	-	0.906
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	117.722	-	-	2.236	-	-	-	-	-	0.906	-	-	-	-	-	0.906
Gross/Weapon System Cost	-	-	146.136	-	-	19.031	-	-	-	-	-	11.309	-	-	-	-	-	11.309

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types				Item Number / Title [DODIC]: E18404 / CTG, 81mm Mortar HE, M889 Series w/PD Fuze [CA63]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2019	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2022	30,504	82.01	Y		
LOAD, ASSEMBLE, PACK (LAP)		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2021	May 2024	18,220	91.65	Y		
FUZE POINT DETONATOR M783		2019	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	May 2019	Nov 2021	31,419	211.14	Y		
FUZE POINT DETONATOR M783		2021	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2023	18,766	204.00	Y		
SHELL BODY, 81MM HE		2019	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2018	Jun 2020	31,419	50.99	Y		
SHELL BODY, 81MM HE		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	18,766	53.67	Y		
IGN CTG M299		2019	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jun 2020	31,419	14.91	Y		
IGN CTG M299		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2021	18,766	15.82	Y		
CHG PROP 81MM M220		2019	AMERICAN ORDANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Aug 2020	125,676	12.89	Y		
CHG PROP 81MM M220		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	75,066	13.78	Y		
FIN MORTAR CTG M24 F/81MM		2019	FLEXIBLE CONCEPTS, INC. / ELKHART, IN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Dec 2018	Jun 2020	31,419	16.45	Y		
FIN MORTAR CTG M24 F/81MM		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	18,766	18.87	Y		
PBXW-12 BULK EXPLOSIVE		2019	BAE SYSTEMS ORDANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2019	Mar 2021	3,660	85.74	Y		
PBXW-12 BULK EXPLOSIVE		2021	BAE SYSTEMS ORDANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	2,186	89.20	Y		
EXPLOSIVE FILL IMX-104		2019	BAE SYSTEMS ORDANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2019	Nov 2021	128,117	20.23	Y		
EXPLOSIVE FILL IMX-104		2021	BAE SYSTEMS ORDANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2023	76,524	24.39	Y		

Remarks:

Ignition Cartridges: IDIQ awarded (FY 2018) to Nammo Pocal Industries, Scranton, PA. HE LAP: IDIQ awarded (FY 2017) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Parsons, KS; General Dynamics, Le Gardeur, Canada; American Ordnance, Middletown, IA. HE Shell Bodes: IDIQ awarded (FY 2018) to Medico Industries, Wilkes Barre, PA. M220 Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements will be competed among the following contractors: American Ordnance, Middletown, IA; and General Dynamics, Marion IL. Fins: IDIQ awarded (FY 2017) to multiple contractors. Requirements will be competed among the following contractors: Gayston Corp., Springboro, OH and Flexible Concepts, Elkhart, IN.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types
		Item Number / Title [DODIC]: E69600 / CTG, 81mm FRTR, M879 Series w/Practice Fuze [C875]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	177.850	11.603	16.154	13.806	-	13.806
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	177.850	11.603	16.154	13.806	-	13.806
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	177.850	11.603	16.154	13.806	-	13.806

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	41.61	127,230	5.294	39.96	55,000	2.198	43.87	72,450	3.178	45.70	58,988	2.696	-	-	-	45.70	58,988	2.696
FUZE PRACTICE, M751 ^(†)	19.96	131,047	2.616	19.92	56,650	1.128	20.72	74,623	1.546	21.13	60,757	1.284	-	-	-	21.13	60,757	1.284
SHELL BODY, 81MM FRPC ^(†)	43.69	131,047	5.725	43.99	56,650	2.492	45.76	74,623	3.415	46.68	60,757	2.836	-	-	-	46.68	60,757	2.836
IGN CTG M299 ^(†)	14.78	131,047	1.937	14.91	56,650	0.845	15.51	74,623	1.157	15.82	60,757	0.961	-	-	-	15.82	60,757	0.961
CHG PROP 81MM M220 ^(†)	11.72	524,188	6.143	12.89	226,600	2.921	13.51	298,494	4.033	13.78	243,030	3.349	-	-	-	13.78	243,030	3.349
FIN MORTAR CTG M24 F/81MM ^(†)	15.37	131,047	2.014	14.50	56,650	0.821	15.39	74,623	1.148	18.87	60,757	1.146	-	-	-	18.87	60,757	1.146
<i>Subtotal: Recurring Cost</i>	-	-	23.730	-	-	10.405	-	-	14.478	-	-	12.272	-	-	-	-	-	12.272
<i>Subtotal: Hardware Cost</i>	-	-	23.730	-	-	10.405	-	-	14.478	-	-	12.272	-	-	-	-	-	12.272
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	1.025	-	-	0.268	-	-	0.545	-	-	0.428	-	-	-	-	-	0.428
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	1.025	-	-	0.268	-	-	0.545	-	-	0.428	-	-	-	-	-	0.428
Support - Production Engineering Cost																		
Production Engineering	-	-	153.095	-	-	0.930	-	-	1.131	-	-	1.105	-	-	-	-	-	1.105

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types	Item Number / Title [DODIC]: E69600 / CTG, 81mm FRTR, M879 Series w/Practice Fuze [C875]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	153.095	-	-	0.930	-	-	1.131	-	-	1.105	-	-	-	-	-	1.105
Gross/Weapon System Cost	-	-	177.850	-	-	11.603	-	-	16.154	-	-	13.806	-	-	-	-	-	13.806

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types					Item Number / Title [DODIC]: E69600 / CTG, 81mm FRTR, M879 Series w/Practice Fuze [C875]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2019	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	May 2021	55,000	39.96	Y		
LOAD, ASSEMBLE, PACK (LAP)		2020	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	Option / IDIQ	ROCK ISLAND ARSENAL, IL	May 2020	May 2022	72,450	43.87	Y		
LOAD, ASSEMBLE, PACK (LAP)		2021	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	Option / IDIQ	ROCK ISLAND ARSENAL, IL	May 2021	May 2023	58,988	45.70	Y		
FUZE PRACTICE, M751		2019	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2018	Jun 2020	56,650	19.92	Y		
FUZE PRACTICE, M751		2020	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	74,623	20.72	Y		
FUZE PRACTICE, M751		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	60,757	21.13	Y		
SHELL BODY, 81MM FRPC		2019	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2018	Jun 2020	56,650	43.99	Y		
SHELL BODY, 81MM FRPC		2020	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	74,623	45.76	Y		
SHELL BODY, 81MM FRPC		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	60,757	46.68	Y		
IGN CTG M299		2019	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	56,650	14.91	Y		
IGN CTG M299		2020	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	74,623	15.51	Y		
IGN CTG M299		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	60,757	15.82	Y		
CHG PROP 81MM M220		2019	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	226,600	12.89	Y		
CHG PROP 81MM M220		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	298,494	13.51	Y		
CHG PROP 81MM M220		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	243,030	13.78	Y		
FIN MORTAR CTG M24 F/81MM		2019	GAYSTON CORPORATION / MIAMISBURG, OH	C / IDIQ	ROCK ISLAND ARSENAL, IL	Dec 2018	Jun 2020	56,650	14.50	Y		
FIN MORTAR CTG M24 F/81MM		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	74,623	15.39	Y		
FIN MORTAR CTG M24 F/81MM		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	60,757	18.87	Y		
Remarks:												

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types	Item Number / Title [DODIC]: E69600 / CTG, 81mm FRTR, M879 Series w/Practice Fuze [C875]

FRPC Shell Bodes: IDIQ awarded (FY 2018) to Medico Industries, Wilkes Barre, PA. Ignition Cartridges: IDIQ awarded (FY 2018) to Nammo Pocal Industries, Scranton, PA. M220 Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements will be competed among the following contractors: American Ordnance, Middletown, IA and General Dynamics, Marion, IL. Fins: IDIQ awarded (FY 2017) to multiple contractors. Requirements will be competed among the following contractors: Gayston Corp., Springboro, OH and Flexible Concepts, Elkhart, IN.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types
		Item Number / Title [DODIC]: E76200 / CTG, 81mm Mortar Smoke RP, M819 Series w/MTSQ Fuze [C870]

ID Code (A=Service Ready, B=Not Service Ready) : A				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)		96.879	6.623	8.635	-	-	-
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		96.879	6.623	8.635	-	-	-
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		96.879	6.623	8.635	-	-	-
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	274.98	16,363	4.499	329.95	7,245	2.390	426.05	9,188	3.915	-	-	-	-	-	-	-	-	-
FIN MORTAR CTG M28 F/81MM M819 RP ^(†)	16.88	16,854	0.284	16.50	7,462	0.123	17.69	9,464	0.167	-	-	-	-	-	-	-	-	-
IGN CTG M752 ^(†)	19.98	16,854	0.337	25.15	7,462	0.188	21.59	9,464	0.204	-	-	-	-	-	-	-	-	-
PROPELLANT CHARGE, M218 ^(†)	11.68	67,416	0.787	12.89	29,849	0.385	13.41	37,855	0.508	-	-	-	-	-	-	-	-	-
FUZE MTSQ, M772 ^(†)	246.00	16,854	4.146	247.27	7,462	1.845	250.05	9,464	2.366	-	-	-	-	-	-	-	-	-
BODY TUBE, 81MM RP SMK ^(†)	25.44	16,854	0.429	26.52	7,462	0.198	38.05	9,464	0.360	-	-	-	-	-	-	-	-	-
TAIL CONE, 81MM SMOKE ^(†)	23.38	16,854	0.394	24.48	7,462	0.183	30.44	9,464	0.288	-	-	-	-	-	-	-	-	-
GAMS ^(†)	8.59	33,874	0.291	8.92	15,070	0.134	9.03	19,111	0.173	-	-	-	-	-	-	-	-	-
FIBER CONTAINER PA 162, 81MM ^(†)	6.00	16,854	0.101	6.18	7,462	0.046	6.24	9,464	0.059	-	-	-	-	-	-	-	-	-
METAL CONTAINER PA 157, 81MM ^(†)	57.57	3,765	0.217	55.60	2,536	0.141	65.44	1,149	0.075	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	11.486	-	-	5.633	-	-	8.115	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Item Number / Title [DODIC]: E76200 / CTG, 81mm Mortar Smoke RP, M819 Series w/MTSQ Fuze [C870]		

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)
<i>Subtotal: Hardware Cost</i>	-	-	11.486	-	-	5.633	-	-	8.115	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.327	-	-	0.429	-	-	0.090	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.327	-	-	0.429	-	-	0.090	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	85.066	-	-	0.560	-	-	0.430	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	85.066	-	-	0.560	-	-	0.430	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	96.879	-	-	6.623	-	-	8.635	-	-	-	-	-	-	-	-	-

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types					Item Number / Title [DODIC]: E76200 / CTG, 81mm Mortar Smoke RP, M819 Series w/MTSQ Fuze [C870]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2019	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Feb 2019	Feb 2021	7,245	329.95	Y		
LOAD, ASSEMBLE, PACK (LAP)		2020	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jan 2020	Jan 2022	9,188	426.05	Y		
FIN MORTAR CTG M28 F/81MM M819 RP		2019	GAYSTON CORPORATION / MIAMISBURG, OH	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Dec 2018	Jun 2020	7,462	16.50	Y		
FIN MORTAR CTG M28 F/81MM M819 RP		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	9,464	17.69	Y		
IGN CTG M752		2019	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jun 2020	7,462	25.15	Y		
IGN CTG M752		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	9,464	21.59	Y		
PROPELLANT CHARGE, M218		2019	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	29,849	12.89	Y		
PROPELLANT CHARGE, M218		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	37,855	13.41	Y		
FUZE MTSQ, M772		2019	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Dec 2018	Jun 2020	7,462	247.27	Y		
FUZE MTSQ, M772		2020	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	9,464	250.05	Y		
BODY TUBE, 81MM RP SMK		2019	LEWIS ENGINEERING COMPANY / MARSHALL, TX	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2018	Jun 2020	7,462	26.52	Y		
BODY TUBE, 81MM RP SMK		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	9,464	38.05	Y		
TAIL CONE, 81MM SMOKE		2019	LEWIS ENGINEERING COMPANY / MARSHALL, TX	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2018	Jun 2020	7,462	24.48	Y		
TAIL CONE, 81MM SMOKE		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	9,464	30.44	Y		
GAMS		2019	DESIGN WEST TECHNOLOGIES, / TUSTIN, CA	Option / FFP	ROCK ISLAND ARSENAL, IL	Nov 2018	May 2020	15,070	8.92	Y		
GAMS		2020	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	19,111	9.03	Y		
FIBER CONTAINER PA 162, 81MM		2019	UNITED AMMUNITION CONTAINER / WYNNEWOOD, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2018	May 2020	7,462	6.18	Y		
FIBER CONTAINER PA 162, 81MM		2020	UNITED AMMUNITION CONTAINER / WYNNEWOOD, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	9,464	6.24	Y		
METAL CONTAINER PA 157, 81MM		2019	BWAY CORPORATION / ATLANTA, GA	C / IDIQ	PICATINNY ARSENAL, NJ	May 2019	Nov 2020	2,536	55.60	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types				Item Number / Title [DODIC]: E76200 / CTG, 81mm Mortar Smoke RP, M819 Series w/MTSQ Fuze [C870]					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
METAL CONTAINER PA 157, 81MM		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	1,149	65.44	Y		

Remarks:

Body Tube and Tail Cones: IDIQ awarded (FY 2018) to Medico Industries, Wilkes Barre, PA and Lewis Engineering Company, Marshall, TX. Ignition Cartridges: IDIQ awarded (FY 2018) to Nammo Pocal Industries, Scranton, PA. Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements will be competed among the following contractors: American Ordnance, Middletown, IA and General Dynamics, Marion, IL. Fins: IDIQ awarded (FY 2017) to multiple contractors. Requirements will be competed among the following contractors: Gayston Corp., Springboro, OH and Flexible Concepts, Elkhart, IN.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,602.745	82.853	123.110	107.762	-	107.762	121.778	107.593	127.664	110.972	-	2,384.477
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,602.745	82.853	123.110	107.762	-	107.762	121.778	107.593	127.664	110.972	-	2,384.477
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,602.745	82.853	123.110	107.762	-	107.762	121.778	107.593	127.664	110.972	-	2,384.477

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

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

Description:

This budget line item includes 120MM Mortars, All Types.
The 120mm Mortar Cartridges are designed for use with the M120, 120mm Towed Mortar System and the M121 Carrier Mortar System as well as use with the Brigade Combat Team Mortar System.

(E25502) CTG, MORTAR, 120MM HE M933 SERIES W/PD FUZE

The M933A1 120mm High Explosive (HE) cartridge with the M783 Point Detonating/ Delay (PD/DLY) Fuze is used against personnel, bunker and light materiel targets. It consists of a Steel Shell Body with Composition B fill, and aluminum M31 Fin Assembly. The propulsion system utilizes the M1020 Ignition Cartridge and four horseshoe-shaped, water-resistant M234 Propelling Charges. The M933A1 HE (Range 200 meter minimum to 7,200 meter maximum) is used with the new M783 dual safety, point detonating/delay fuze. This round is used primarily in training because it is significantly less expensive than the M934A1, the preferred war fighting round. However, the M933A1 is lethal and can be used in combat.

This item is Code A, approved for service use.

(E25507) CTG, MORTAR, 120MM FRTR M931 SERIES W/PRACT FUZE

The M931 is a low-cost, full range, training round (FRTR) that will replace a percentage of the standard High Explosive (HE) cartridges used in 120mm mortar training. The M931 Full Range Practice Round (FRPR) (Range 200 meter minimum to 7,200 meter maximum) has been designed to provide the user with realistic training for 120mm Mortar crews at a fraction of the cost. It is identical in shape, size and weight to the M933A1/M934A1 HE cartridges. The M931 is equipped with M781 PD Practice Fuze. The M781 PD Practice Fuze produces a flash, bang, and smoke signature that provides audio/visual feedback to the mortar crew and forward observer.

This item is Code A, approved for service use.

(E91300) CTG, MORTAR, 120MM WP SMOKE M929 SERIES W/MOFM

The M929 White Phosphorous (WP) Smoke Cartridge is used to provide smoke, with some incendiary effect for various screening missions. The cartridge is filled with 5 lbs of WP. The M929 uses the highly reliable and robust electronic countermeasure resistant M734A1 multi-option fuze when functions, detonates the burster, which disperses the felt pads which are soaked with WP over the target. The smoke obscuration is generated by a spontaneous reaction between the WP and oxygen. The M929 (Range 200 meter minimum and 7,200 maximum) is range-matched to the 120mm High Explosive (HE) and Illumination cartridges.

This item is Code A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition		P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E91400) CTG, MORTAR, 120MM HE M934 SERIES W/MOFM FUZE The M934A1 120mm High Explosive (HE) cartridge with the M734A1 multi-option Fuze is used against personnel, bunker and light materiel targets. It consists of a Steel Shell Body with Composition B fill, and aluminum M31 Fin Assembly. The propulsion system utilizes the M1020 Ignition Cartridge and four horseshoe-shaped, water-resistant M234 Propelling Charges. The M934A1 HE (Range 200 meter minimum to 7,200 meter maximum) uses the highly reliable and countermeasure resistant M734A1 multi-option fuze. The proximity setting will burst the cartridge at a height over the target that is optimized for lethality. This item is Code A, approved for service use.</p> <p>(E91500) CTG, MORTAR, 120MM IR ILLUM M983 SERIES W/ MTSQ FUZE The M983 120mm Infra-Red (IR) Illumination cartridge is ballistically similar to the M930 Visible Light Illumination cartridge except for the chemical composition of the illuminating material and provides a field of view equal or greater to that of the M930 VL cartridge. The M983 cartridge is a fin stabilized, mortar cartridge that consists of the M776 Mechanical Time Super Quick (MTSQ) fuze, a steel 2 piece shell body, and a fin assembly. The payload is base ejected. The advantage is that there is minimal visible light. This reduces the possibility of exposing forward friendly troop positions while also allowing covert adjustment of fire at greater observation distances through the use of passive Night Vision Devices (NVDs). The M983 IR (Range 375 meters minimum to 6,675 meters maximum) illuminates to the full range of the M934A1 HE cartridge. The item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition

P-1 Line Item Number / Title:
6780E25500 / 120MM Mortar, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E25502 / CTG, 120mm Mortar HE, M933 Series w/PD Fuze [CA44]	P-5a	A		- / 449.187	- / 23.871	- / 17.118	- / 14.482	- / -	- / 14.482
P-5	E25507 / CTG, 120mm Mortar FRTR, M931 Series w/Pract Fuze [CA09]	P-5a, P-21	A		- / 575.790	- / 58.982	- / 35.530	- / 51.124	- / -	- / 51.124
P-5	E91300 / CTG, 120mm Mortar WP Smoke, M929 Series w/MOFM [CA03]	P-5a, P-21	A		- / 224.031	- / -	- / 51.962	- / 16.963	- / -	- / 16.963
P-5	E91400 / CTG, 120mm Mortar HE, M934 Series w/MOFM [CA04]	P-5a	A		- / 148.206	- / -	- / 18.500	- / 12.341	- / -	- / 12.341
P-5	E91500 / CTG, 120mm Mortar IR ILLUM, M983 Series w/MTSQ	P-5a			- / 205.531	- / -	- / -	- / 12.852	- / -	- / 12.852
P-40	Total Gross/Weapon System Cost				- / 1,602.745	- / 82.853	- / 123.110	- / 107.762	- / -	- / 107.762

*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 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base dollars in the amount of \$107.762 million supports the procurement of 168,238 cartridges.

(E25502) CTG, MORTAR, 120MM HE M933 SERIES W/PD FUZE
This is a training standard item used in training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$14.482 million supports production of 16,870 cartridges.
TYPE CLASSIFICATION DATE: 2009

(E25507) CTG, MORTAR, 120MM FRTR M931 SERIES W/PRACT FUZE
This is a training unique item not used in combat. FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY2021 Base procurement dollars in the amount of \$51.124 million supports the procurement of 119,848 rounds.
TYPE CLASSIFICATION DATE: 1996

(E91300) CTG, MORTAR, 120MM WP SMOKE M929 SERIES W/MOFM
This is a training standard item used in training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$16.963 million supports the procurement of 11,424 cartridges.
TYPE CLASSIFICATION DATE: 1996

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 33: Mortar Ammunition		P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E91400) CTG, MORTAR, 120MM HE M934 SERIES W/MOFM FUZE This is a training standard item used in training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$12.341 million supports production of 12,543 cartridges. TYPE CLASSIFICATION DATE: 2009</p> <p>(E91500) CTG, MORTAR, 120MM IR ILLUM M983 SERIES W/MTSQ FUZE This is a training standard item used in training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$12.852 million supports production of 7,553 cartridges. E91500 is a new start in FY2021. TYPE CLASSIFICATION DATE: 2000</p>		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types
		Item Number / Title [DODIC]: E25502 / CTG, 120mm Mortar HE, M933 Series w/PD Fuze [CA44]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	449.187	23.871	17.118	14.482	-	14.482
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	449.187	23.871	17.118	14.482	-	14.482
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	449.187	23.871	17.118	14.482	-	14.482

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	15.784	142.91	34,976	4.998	146.75	19,347	2.839	151.97	16,870	2.564	-	-	-	151.97	16,870	2.564
FIN ASSEMBLY, M31 ^(†)	-	-	5.271	43.20	36,025	1.556	45.14	19,927	0.900	46.05	17,376	0.800	-	-	-	46.05	17,376	0.800
IGNITION CARTRIDGE, M1020 ^(†)	23.21	121,699	2.825	22.44	36,025	0.808	24.14	19,927	0.481	24.63	17,376	0.428	-	-	-	24.63	17,376	0.428
PROPELLANT CHARGE, M234A1 ^(†)	-	-	8.987	20.85	144,101	3.005	21.25	79,709	1.694	21.68	69,504	1.507	-	-	-	21.68	69,504	1.507
SHELL BODY, 120MM HE ^(†)	-	-	11.854	123.29	36,025	4.442	142.78	19,927	2.845	130.31	17,376	2.264	-	-	-	130.31	17,376	2.264
FUZE POINT DETONATOR M783 ^(†)	-	-	21.119	211.14	36,025	7.606	200.08	19,927	3.987	204.00	17,376	3.545	-	-	-	204.00	17,376	3.545
COMP B TYPE I GRADE A ^(†)	11.87	739,503	8.778	-	-	-	13.52	174,123	2.354	13.79	151,830	2.094	-	-	-	13.79	151,830	2.094
*COMP B TYPE I GRADE A ^(†)	12.00	323,883	3.887	12.11	314,784	3.812	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	78.504	-	-	26.227	-	-	15.100	-	-	13.201	-	-	-	-	-	13.201
<i>Subtotal: Hardware Cost</i>	-	-	78.504	-	-	26.227	-	-	15.100	-	-	13.201	-	-	-	-	-	13.201
Support - Acceptance Testing Cost																		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Item Number / Title [DODIC]: E25502 / CTG, 120mm Mortar HE, M933 Series w/PD Fuze [CA44]		

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)
Acceptance Test	-	-	0.450	-	-	0.279	-	-	0.100	-	-	0.121	-	-	-	-	-	0.121
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.450	-	-	0.279	-	-	0.100	-	-	0.121	-	-	-	-	-	0.121
Support - Government Furnished Materials Cost																		
Government Furnished Materials	-	-	-3.887	-	-	-3.812	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Government Furnished Materials Cost</i>	-	-	-3.887	-	-	-3.812	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	374.120	-	-	1.176	-	-	1.918	-	-	1.159	-	-	-	-	-	1.159
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	374.120	-	-	1.176	-	-	1.918	-	-	1.159	-	-	-	-	-	1.159
Gross/Weapon System Cost	-	-	449.187	-	-	23.871	-	-	17.118	-	-	14.482	-	-	-	-	-	14.482

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types					Item Number / Title [DODIC]: E25502 / CTG, 120mm Mortar HE, M933 Series w/PD Fuze [CA44]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2019	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	C / IDIQ	PICATINNY ARSENAL, NJ	Sep 2019	Sep 2021	34,976	142.91	Y		
LOAD, ASSEMBLE, PACK (LAP)		2020	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	C / FFP	PICATINNY ARSENAL, NJ	May 2020	May 2023	19,347	146.75	Y		
LOAD, ASSEMBLE, PACK (LAP)		2021	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	Option / IDIQ	PICATINNY ARSENAL, NJ	May 2021	May 2024	16,870	151.97	Y		
FIN ASSEMBLY, M31		2019	MACHINING TECHNOLOGIES INC / SALISBURY, MD	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	36,025	43.20	Y		
FIN ASSEMBLY, M31		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	19,927	45.14	Y		
FIN ASSEMBLY, M31		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	17,376	46.05	Y		
IGNITION CARTRIDGE, M1020		2019	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	36,025	22.44	Y		
IGNITION CARTRIDGE, M1020		2020	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	19,927	24.14	Y		
IGNITION CARTRIDGE, M1020		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	17,376	24.63	Y		
PROPELLANT CHARGE, M234A1		2019	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	144,101	20.85	Y		
PROPELLANT CHARGE, M234A1		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	79,709	21.25	Y		
PROPELLANT CHARGE, M234A1		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	69,504	21.68	Y		
SHELL BODY, 120MM HE		2019	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Apr 2019	Oct 2020	36,025	123.29	Y		
SHELL BODY, 120MM HE		2020	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	19,927	142.78	Y		
SHELL BODY, 120MM HE		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	17,376	130.31	Y		
FUZE POINT DETONATOR M783		2019	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Aug 2019	Feb 2021	36,025	211.14	Y		
FUZE POINT DETONATOR M783		2020	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	19,927	200.08	Y		
FUZE POINT DETONATOR M783		2021	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2023	17,376	204.00	Y		
COMP B TYPE I GRADE A		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Feb 2021	174,123	13.52	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types					Item Number / Title [DODIC]: E25502 / CTG, 120mm Mortar HE, M933 Series w/PD Fuze [CA44]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMP B TYPE I GRADE A		2021	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Feb 2022	151,830	13.79	Y		
*COMP B TYPE I GRADE A		2019	GOVERNMENT FURNISHED MATERIAL / STOCK ISSUE,	GFM	PICATINNY ARSENAL, NJ	Sep 2019	Sep 2019	314,784	12.11	N		

Remarks:
 Propellant Charges: IDIQ awarded (FY 18) to multiple contractors. Requirements will be competed among the following contractors: American Ordnance, Middletown, IA and General Dynamics, Marion, IL. Ignition Cartridges: IDIQ awarded (FY 18) to Nammo Pocal INC., Scranton, PA.

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33						P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types						Item Number / Title [DODIC]: E25507 / CTG, 120mm Mortar FRTR, M931 Series w/Pract Fuze [CA09]						
ID Code (A=Service Ready, B=Not Service Ready) : A									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)				575.790		58.982			35.530			51.124			-		51.124	
Less PY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Net Procurement (P-1) (\$ in Millions)				575.790		58.982			35.530			51.124			-		51.124	
Plus CY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Total Obligation Authority (\$ in Millions)				575.790		58.982			35.530			51.124			-		51.124	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (\$ in Millions)				-		-			-			-			-		-	
Gross/Weapon System Unit Cost (\$ in 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	79.13	289,237	22.887	85.73	149,040	12.777	82.96	81,127	6.730	84.71	119,848	10.152	-	-	-	84.71	119,848	10.152
FIN ASSEMBLY, M31 ^(†)	43.30	297,914	12.900	43.20	153,511	6.632	45.14	83,560	3.772	46.05	123,443	5.685	-	-	-	46.05	123,443	5.685
IGNITION CARTRIDGE, M1020 ^(†)	23.21	297,914	6.915	22.44	153,511	3.445	24.14	83,560	2.017	24.63	123,443	3.040	-	-	-	24.63	123,443	3.040
PROPELLANT CHARGE, M234A1 ^(†)	-	-	22.922	20.85	614,045	12.803	21.25	334,243	7.103	21.68	493,773	10.705	-	-	-	21.68	493,773	10.705
SHELL BODY, 120MM FRPC ^(†)	-	-	30.264	117.56	153,511	18.047	122.39	83,560	10.227	122.30	123,443	15.097	-	-	-	122.30	123,443	15.097
FUZE PRACTICE, M781 ^(†)	-	-	6.249	19.92	153,511	3.058	20.72	83,560	1.731	21.13	123,443	2.608	-	-	-	21.13	123,443	2.608
<i>Subtotal: Recurring Cost</i>	-	-	102.136	-	-	56.761	-	-	31.580	-	-	47.288	-	-	-	-	-	47.288
<i>Subtotal: Hardware Cost</i>	-	-	102.136	-	-	56.761	-	-	31.580	-	-	47.288	-	-	-	-	-	47.288
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	1.460	-	-	0.262	-	-	0.610	-	-	0.824	-	-	-	-	-	0.824
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	1.460	-	-	0.262	-	-	0.610	-	-	0.824	-	-	-	-	-	0.824
Support - Production Engineering Cost																		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types	Item Number / Title [DODIC]: E25507 / CTG, 120mm Mortar FRTR, M931 Series w/Pract Fuze [CA09]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	472.194	-	-	1.959	-	-	3.340	-	-	3.012	-	-	-	-	-	3.012
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	472.194	-	-	1.959	-	-	3.340	-	-	3.012	-	-	-	-	-	3.012
Gross/Weapon System Cost	-	-	575.790	-	-	58.982	-	-	35.530	-	-	51.124	-	-	-	-	-	51.124

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types	Item Number / Title [DODIC]: E25507 / CTG, 120mm Mortar FRTR, M931 Series w/Pract Fuze [CA09]
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	Option / FFP	PICATINNY ARSENAL, NJ	Dec 2019	Dec 2021	149,040	85.73	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2020	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	Option / FFP	PICATINNY ARSENAL, NJ	May 2020	May 2022	81,127	82.96	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	Option / FFP	PICATINNY ARSENAL, NJ	May 2021	May 2023	119,848	84.71	Y		
FIN ASSEMBLY, M31		2019	MACHINING TECHNOLOGIES INC / SALISBURY, MD	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	153,511	43.20	Y		
FIN ASSEMBLY, M31		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	83,560	45.14	Y		
FIN ASSEMBLY, M31		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	123,443	46.05	Y		
IGNITION CARTRIDGE, M1020		2019	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Dec 2018	Jun 2020	153,511	22.44	Y		
IGNITION CARTRIDGE, M1020		2020	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	83,560	24.14	Y		
IGNITION CARTRIDGE, M1020		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	123,443	24.63	Y		
PROPELLANT CHARGE, M234A1		2019	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2019	Jul 2020	614,045	20.85	Y		
PROPELLANT CHARGE, M234A1		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	334,243	21.25	Y		
PROPELLANT CHARGE, M234A1		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	493,773	21.68	Y		
SHELL BODY, 120MM FRPC		2019	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Jul 2019	Jan 2021	153,511	117.56	Y		
SHELL BODY, 120MM FRPC		2020	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	83,560	122.39	Y		
SHELL BODY, 120MM FRPC		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	123,443	122.30	Y		
FUZE PRACTICE, M781		2019	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2018	Jun 2020	153,511	19.92	Y		
FUZE PRACTICE, M781		2020	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	83,560	20.72	Y		
FUZE PRACTICE, M781		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	123,443	21.13	Y		

^(†) indicates the presence of a P-21

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types	Item Number / Title [DODIC]: E25507 / CTG, 120mm Mortar FRTR, M931 Series w/Pract Fuze [CA09]
Remarks: Ignition Cartridges: IDIQ awarded (FY 2018) to Nammo Pocal Industries, Scranton, PA. Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements will be competed among the following contractors: American Ordnance, Middletown, IA and General Dynamics, Marion, IL. Fuze: IDIQ awarded (FY 2018) to Nammo Pocal Industries, Scranton, PA.		

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Exhibit P-21, Production Schedule: PB 2021 Army														Date: February 2020																	
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33										P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types										Item Number / Title [DODIC]: E25507 / CTG, 120mm Mortar FRTR, M931 Series w/Pract Fuze [CA09]											

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2019																Fiscal Year 2020																B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019																Calendar Year 2020																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P									

LOAD, ASSEMBLE, PACK (LAP)																																											
Prior Years Deliveries: 289237																																											
1	2019	ARMY	149.040	.000	149.040																								A -	-	-	-	-	-	-	-	-	-	149.040				
1	2020	ARMY	81.127	.000	81.127																																A -	-	-	-	-	-	81.127
1	2021	ARMY	119.848	.000	119.848																																					119.848	

O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P
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Exhibit P-21, Production Schedule: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types	Item Number / Title [DODIC]: E25507 / CTG, 120mm Mortar FRTR, M931 Series w/Pract Fuze [CA09]
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Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2021													Fiscal Year 2022												BALANCE		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021													Calendar Year 2022												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P	

LOAD, ASSEMBLE, PACK (LAP)

Prior Years Deliveries: 289237

1	2019	ARMY	149.040	.000	149.040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.000	24.000	24.000	24.000	24.000	12.000	12.000	5.040			.000
1	2020	ARMY	81.127	.000	81.127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.000	12.000	18.960	24.000	14.167	.000
1	2021	ARMY	119.848	.000	119.848																									119.848

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Exhibit P-21, Production Schedule: PB 2021 Army														Date: February 2020													
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33										P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types										Item Number / Title [DODIC]: E25507 / CTG, 120mm Mortar FRTR, M931 Series w/Pract Fuze [CA09]							

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2023												Fiscal Year 2024												B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L		A U G	S E P
LOAD, ASSEMBLE, PACK (LAP)																															
Prior Years Deliveries: 289237																															
	1	2019	ARMY	149.040	149.040	.000																							.000		
	1	2020	ARMY	81.127	81.127	.000																							.000		
	1	2021	ARMY	119.848	.000	119.848	-	-	-	-	-	-	-	-	24.000	24.000	24.000	24.000	23.848										.000		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33					P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types				Item Number / Title [DODIC]: E25507 / CTG, 120mm Mortar FRTR, M931 Series w/Pract Fuze [CA09]			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	GEN DYNAMICS ORD & TAC SYS - - LE GARDEUR, CANADA	10,000	12,000	24,000	8	8	24	32	8	8	24	32

"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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types	Item Number / Title [DODIC]: E91300 / CTG, 120mm Mortar WP Smoke, M929 Series w/MOFM [CA03]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	224.031	-	51.962	16.963	-	16.963
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	224.031	-	51.962	16.963	-	16.963
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	224.031	-	51.962	16.963	-	16.963

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	343.14	21,444	7.358	-	-	-	428.24	35,353	15.140	440.00	11,424	5.027	-	-	-	440.00	11,424	5.027
FIN ASSEMBLY, M31 ^(†)	43.30	22,087	0.956	-	-	-	45.15	36,414	1.644	46.05	11,766	0.542	-	-	-	46.05	11,766	0.542
IGNITION CARTRIDGE, M1020 ^(†)	23.21	22,087	0.513	-	-	-	24.15	36,414	0.879	24.63	11,766	0.290	-	-	-	24.63	11,766	0.290
PROPELLANT CHARGE, M234A1 ^(†)	20.43	88,349	1.805	-	-	-	21.25	145,654	3.095	21.68	47,066	1.020	-	-	-	21.68	47,066	1.020
SHELL BODY, 120MM SMK ^(†)	234.01	22,087	5.169	-	-	-	300.00	36,414	10.924	229.77	11,766	2.703	-	-	-	229.77	11,766	2.703
BURSTER HOUSING, 120MM SMOKE ^(†)	57.42	22,087	1.268	-	-	-	63.14	36,414	2.299	64.40	11,766	0.758	-	-	-	64.40	11,766	0.758
FUZE MOFM, M734A1 ^(†)	269.74	22,087	5.958	-	-	-	280.62	36,414	10.218	312.12	11,766	3.672	-	-	-	312.12	11,766	3.672
BURSTER ASSEMBLY, M86 ^(†)	49.59	22,087	1.095	-	-	-	50.58	36,414	1.842	51.59	11,766	0.607	-	-	-	51.59	11,766	0.607
FIBER CONTAINER PA 167, 120MM ^(†)	12.34	22,087	0.273	-	-	-	13.36	36,414	0.486	13.62	11,766	0.160	-	-	-	13.62	11,766	0.160

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types	Item Number / Title [DODIC]: E91300 / CTG, 120mm Mortar WP Smoke, M929 Series w/MOFM [CA03]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
METAL CONTAINER PA 154, 120MM ^(t)	68.60	11,151	0.765	-	-	-	71.37	18,384	1.312	72.79	5,940	0.432	-	-	-	72.79	5,940	0.432
<i>Subtotal: Recurring Cost</i>	-	-	25.160	-	-	-	-	-	47.840	-	-	15.212	-	-	-	-	-	15.212
<i>Subtotal: Hardware Cost</i>	-	-	25.160	-	-	-	-	-	47.840	-	-	15.212	-	-	-	-	-	15.212
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.200	-	-	-	-	-	0.320	-	-	0.140	-	-	-	-	-	0.140
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.200	-	-	-	-	-	0.320	-	-	0.140	-	-	-	-	-	0.140
Support - Production Engineering Cost																		
Production Engineering	-	-	198.671	-	-	-	-	-	3.802	-	-	1.610	-	-	-	-	-	1.610
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	198.671	-	-	-	-	-	3.802	-	-	1.610	-	-	-	-	-	1.610
Gross/Weapon System Cost	-	-	224.031	-	-	-	-	-	51.962	-	-	16.963	-	-	-	-	-	16.963

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types					Item Number / Title [DODIC]: E91300 / CTG, 120mm Mortar WP Smoke, M929 Series w/MOFM [CA03]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2020	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	May 2020	May 2023	35,353	428.24	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	May 2021	May 2024	11,424	440.00	Y		
FIN ASSEMBLY, M31		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	36,414	45.15	Y		
FIN ASSEMBLY, M31		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	11,766	46.05	Y		
IGNITION CARTRIDGE, M1020		2020	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	36,414	24.15	Y		
IGNITION CARTRIDGE, M1020		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	11,766	24.63	Y		
PROPELLANT CHARGE, M234A1		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	145,654	21.25	Y		
PROPELLANT CHARGE, M234A1		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	47,066	21.68	Y		
SHELL BODY, 120MM SMK		2020	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	36,414	300.00	Y		
SHELL BODY, 120MM SMK		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	11,766	229.77	Y		
BURSTER HOUSING, 120MM SMOKE		2020	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	36,414	63.14	Y		
BURSTER HOUSING, 120MM SMOKE		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	11,766	64.40	Y		
FUZE MOFM, M734A1		2020	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	Option / FFP	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2022	36,414	280.62	Y		
FUZE MOFM, M734A1		2021	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	Option / FFP	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2023	11,766	312.12	Y		
BURSTER ASSEMBLY, M86		2020	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	36,414	50.58	Y		
BURSTER ASSEMBLY, M86		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	11,766	51.59	Y		
FIBER CONTAINER PA 167, 120MM		2020	UNITED AMMUNITION CONTAINER / WYNNEWOOD, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	36,414	13.36	Y		
FIBER CONTAINER PA 167, 120MM		2021	UNITED AMMUNITION CONTAINER / WYNNEWOOD, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	11,766	13.62	Y		
METAL CONTAINER PA 154, 120MM		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	18,384	71.37	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types				Item Number / Title [DODIC]: E91300 / CTG, 120mm Mortar WP Smoke, M929 Series w/MOFM [CA03]					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
METAL CONTAINER PA 154, 120MM		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	5,940	72.79	Y		

(†) indicates the presence of a P-21

Remarks:

Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements will be competed among the following contractors: American Ordnance, Middletown, IA and General Dynamics, Marion, IL. Ignition Cartridges: IDIQ awarded (FY 2018) to Nammo Pocal Industries, Scranton, PA.

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Exhibit P-21, Production Schedule: PB 2021 Army																					Date: February 2020																									
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33								P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types													Item Number / Title [DODIC]: E91300 / CTG, 120mm Mortar WP Smoke, M929 Series w/MOFM [CA03]																									
Cost Elements <i>(Units in Thousands)</i>							Fiscal Year 2020												Fiscal Year 2021												B A L A N C E															
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020												Calendar Year 2021																											
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P																
LOAD, ASSEMBLE, PACK (LAP)																																														
Prior Years Deliveries: 21444																																														
1	2020	ARMY	35.353	.000	35.353	A -												-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35.353										
1	2021	ARMY	11.424	.000	11.424													A -												-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.424
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P																	

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020									
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33										P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types										Item Number / Title [DODIC]: E91300 / CTG, 120mm Mortar WP Smoke, M929 Series w/MOFM [CA03]				

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2022											Fiscal Year 2023											B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 1	BAL D U E A S O F 1 O C T	Calendar Year 2022											Calendar Year 2023											
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N		J U L

LOAD, ASSEMBLE, PACK (LAP)

Prior Years Deliveries: 21444																																	
1	2020	ARMY	35.353	.000	35.353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.000	9.000	9.000	8.353		.000
1	2021	ARMY	11.424	.000	11.424	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.424

						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33										P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types										Item Number / Title [DODIC]: E91300 / CTG, 120mm Mortar WP Smoke, M929 Series w/MOFM [CA03]									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2024												Fiscal Year 2025												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	Calendar Year 2024												Calendar Year 2025												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P

LOAD, ASSEMBLE, PACK (LAP)

Prior Years Deliveries: 21444																													
1	2020	ARMY	35.353	35.353	.000																							.000	
1	2021	ARMY	11.424	.000	11.424	-	-	-	-	-	-	-	-	11.424															.000
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types
		Item Number / Title [DODIC]: E91300 / CTG, 120mm Mortar WP Smoke, M929 Series w/MOFM [CA03]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	PINE BLUFF ARSENAL - PINE BLUFF, AR	6,000	9,000	12,000	8	8	36	44	8	8	36	44

"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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types	Item Number / Title [DODIC]: E91400 / CTG, 120mm Mortar HE, M934 Series w/MOFM [CA04]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	148.206	-	18.500	12.341	-	12.341
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	148.206	-	18.500	12.341	-	12.341
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	148.206	-	18.500	12.341	-	12.341

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	123.97	43,025	5.334	-	-	-	146.75	19,671	2.887	151.97	12,543	1.906	-	-	-	151.97	12,543	1.906
SHELL BODY, 120MM HE ^(†)	110.25	44,563	4.913	-	-	-	142.78	20,261	2.893	130.31	12,919	1.683	-	-	-	130.31	12,919	1.683
IGNITION CARTRIDGE, M1020 ^(†)	22.90	44,563	1.020	-	-	-	24.14	20,261	0.489	24.63	12,919	0.318	-	-	-	24.63	12,919	0.318
COMP B TYPE I GRADE A ^(†)	14.95	360,003	5.382	-	-	-	13.52	177,039	2.394	13.79	112,887	1.557	-	-	-	13.79	112,887	1.557
PROPELLANT CHARGE, M234A1 ^(†)	14.80	178,256	2.638	-	-	-	21.25	81,044	1.722	21.68	51,677	1.120	-	-	-	21.68	51,677	1.120
FIN ASSEMBLY, M31 ^(†)	35.40	44,563	1.578	-	-	-	45.14	20,261	0.915	46.05	12,919	0.595	-	-	-	46.05	12,919	0.595
FUZE MOFM, M734A1 ^(†)	222.08	44,563	9.897	-	-	-	280.61	20,261	5.685	312.12	12,919	4.032	-	-	-	312.12	12,919	4.032
<i>Subtotal: Recurring Cost</i>	-	-	30.762	-	-	-	-	-	16.984	-	-	11.212	-	-	-	-	-	11.212
<i>Subtotal: Hardware Cost</i>	-	-	30.762	-	-	-	-	-	16.984	-	-	11.212	-	-	-	-	-	11.212
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.220	-	-	0.141	-	-	-	-	-	0.141

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types	Item Number / Title [DODIC]: E91400 / CTG, 120mm Mortar HE, M934 Series w/MOFM [CA04]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.220	-	-	0.141	-	-	-	-	-	0.141
Support - Production Engineering Cost																		
Production Engineering	-	-	117.444	-	-	-	-	-	1.295	-	-	0.988	-	-	-	-	-	0.988
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	117.444	-	-	-	-	-	1.295	-	-	0.988	-	-	-	-	-	0.988
Gross/Weapon System Cost	-	-	148.206	-	-	-	-	-	18.500	-	-	12.341	-	-	-	-	-	12.341

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types				Item Number / Title [DODIC]: E91400 / CTG, 120mm Mortar HE, M934 Series w/MOFM [CA04]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2020	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	Option / IDIQ	PICATINNY ARSENAL, NJ	May 2020	May 2023	19,671	146.75	Y		
LOAD, ASSEMBLE, PACK (LAP)		2021	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	Option / IDIQ	PICATINNY ARSENAL, NJ	May 2021	May 2024	12,543	151.97	Y		
SHELL BODY, 120MM HE		2020	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Sep 2021	20,261	142.78	Y		
SHELL BODY, 120MM HE		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2021	Sep 2022	12,919	130.31	Y		
IGNITION CARTRIDGE, M1020		2020	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	20,261	24.14	Y		
IGNITION CARTRIDGE, M1020		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	12,919	24.63	Y		
COMP B TYPE I GRADE A		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Feb 2021	177,039	13.52	Y		
COMP B TYPE I GRADE A		2021	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Feb 2022	112,887	13.79	Y		
PROPELLANT CHARGE, M234A1		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	81,044	21.25	Y		
PROPELLANT CHARGE, M234A1		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	51,677	21.68	Y		
FIN ASSEMBLY, M31		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	20,261	45.14	Y		
FIN ASSEMBLY, M31		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	12,919	46.05	Y		
FUZE MOFM, M734A1		2020	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	Option / FFP	PICATINNY ARSENAL, NJ	Jul 2020	Jan 2022	20,261	280.61	Y		
FUZE MOFM, M734A1		2021	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	Option / FFP	PICATINNY ARSENAL, NJ	Feb 2021	Sep 2023	12,919	312.12	Y		

Remarks:
 FY 2020 LAP is an option to an existing contract. Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements will be competed among the following contractors: American Ordnance, Middletown, IA and General Dynamics, Marion, IL. Ignition Cartridges: IDIQ awarded (FY 2018) to Nammo Pocal Industries, Scranton, PA.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types	Item Number / Title [DODIC]: E91500 / CTG, 120mm Mortar IR ILLUM, M983 Series w/MTSQ

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)		205.531	-	-	12.852	-	12.852
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		205.531	-	-	12.852	-	12.852
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		205.531	-	-	12.852	-	12.852
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	-	-	-	-	-	-	-	434.94	7,553	3.285	-	-	-	434.94	7,553	3.285
FUZE MTSQ, M776 ^(†)	-	-	-	-	-	-	-	-	-	255.07	7,779	1.984	-	-	-	255.07	7,779	1.984
REAR BODY, 120MM ILLUM ^(†)	-	-	-	-	-	-	-	-	-	88.43	7,779	0.688	-	-	-	88.43	7,779	0.688
FRONT BODY, 120MM ILLUM ^(†)	-	-	-	-	-	-	-	-	-	99.87	7,779	0.777	-	-	-	99.87	7,779	0.777
PROPELLANT CHARGE, M234A1 ^(†)	-	-	-	-	-	-	-	-	-	21.68	31,118	0.675	-	-	-	21.68	31,118	0.675
METAL CONTAINER PA 154, 120MM ^(†)	-	-	-	-	-	-	-	-	-	72.79	3,927	0.286	-	-	-	72.79	3,927	0.286
IR ILLUM CANNISTER, 120MM ^(†)	-	-	-	-	-	-	-	-	-	296.69	7,779	2.308	-	-	-	296.69	7,779	2.308
IGNITION CARTRIDGE, M1020 ^(†)	-	-	-	-	-	-	-	-	-	24.63	7,779	0.192	-	-	-	24.63	7,779	0.192
PARACHUTE, 120MM ^(†)	-	-	-	-	-	-	-	-	-	53.53	7,779	0.416	-	-	-	53.53	7,779	0.416

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types	Item Number / Title [DODIC]: E91500 / CTG, 120mm Mortar IR ILLUM, M983 Series w/MTSQ

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)
FIBER CONTAINER PA 167, 120MM ^(t)	-	-	-	-	-	-	-	-	-	13.62	7,779	0.106	-	-	-	13.62	7,779	0.106
FIN ASSEMBLY, M31 ^(t)	-	-	-	-	-	-	-	-	-	46.05	7,779	0.358	-	-	-	46.05	7,779	0.358
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	11.075	-	-	-	-	-	11.075
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	11.075	-	-	-	-	-	11.075
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	-	-	-	0.090	-	-	-	-	-	0.090
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.090	-	-	-	-	-	0.090
Support - Production Engineering Cost																		
Production Engineering	-	-	205.531	-	-	-	-	-	-	-	-	1.686	-	-	-	-	-	1.686
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	205.531	-	-	-	-	-	-	-	-	1.686	-	-	-	-	-	1.686
Gross/Weapon System Cost	-	-	205.531	-	-	-	-	-	-	-	-	12.852	-	-	-	-	-	12.852

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 6780E25500 / 120MM Mortar, All Types				Item Number / Title [DODIC]: E91500 / CTG, 120mm Mortar IR ILLUM, M983 Series w/MTSQ					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2021	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2023	7,553	434.94	Y		
FUZE MTSQ, M776		2021	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Feb 2021	Oct 2022	7,779	255.07	Y		
REAR BODY, 120MM ILLUM		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	7,779	88.43	Y		
FRONT BODY, 120MM ILLUM		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	7,779	99.87	Y		
PROPELLANT CHARGE, M234A1		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	31,118	21.68	Y		
METAL CONTAINER PA 154, 120MM		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	3,927	72.79	Y		
IR ILLUM CANNISTER, 120MM		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2021	Sep 2022	7,779	296.69	Y		
IGNITION CARTRIDGE, M1020		2021	NAMMO POCAL INC. / SCRANTON, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	7,779	24.63	Y		
PARACHUTE, 120MM		2021	YOLAND CORPORATION / BROOKLYN, NY	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	7,779	53.53	Y		
FIBER CONTAINER PA 167, 120MM		2021	UNITED AMMUNITION CONTAINER / WYNNEWOOD, PA	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	7,779	13.62	Y		
FIN ASSEMBLY, M31		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Aug 2022	7,779	46.05	Y		

Remarks:

Propellant Charges: IDIQ awarded (FY 2018) to multiple contractors. Requirements are competed among the following contractors: American Ordnance , Middletown, IA and General Dynamics, Marion, IL. Rear and Front Body: IDIQ awarded (FY 2019) to Medico Industries, Wilkes Barre, PA. Ignition Cartridges: IDIQ awarded (FY 2018) to multiple contractors. Requirements are competed among the following contractors: Nammo Pocal INC., Scranton, PA and Pyrotechnique by Grucci INC., Radford, VA.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 35: Tank Ammunition	P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3,487.362	151.901	121.659	233.444	-	233.444	287.222	304.534	325.619	339.852	-	5,251.593
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3,487.362	151.901	121.659	233.444	-	233.444	287.222	304.534	325.619	339.852	-	5,251.593
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3,487.362	151.901	121.659	233.444	-	233.444	287.222	304.534	325.619	339.852	-	5,251.593

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

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

Description:

This budget line includes CARTRIDGE, TANK, 105MM and 120MM ALL TYPES:

(E22125) M724A2 Cartridge replaces the (E22100) M724A1 Cartridge and provides the Army with a range limited (7,000 meters, maximum) round which can be safely fired at all training sites. The Cartridge, M724A2, 105mm Target Practice Discarding Sabot with Tracer (TPDS-T) is used for gunnery training in the Army's 105mm Stryker Brigade Combat Team (SBCT) Mobile Gun System (MGS). This discarding sabot round is similar in external appearance and is ballistically similar out to 2,000 meters with the M900, Armor Piercing Fin Stabilized Discarding Sabot w/Tracer Cartridge. It is used as a training surrogate for the M900 Cartridge used by the MGS. The M724A2 Cartridge consists of a deep drawn steel cartridge case, electric primer, propellant and a projectile consisting of a sub-projectile (steel core, windshield, fin and tracer) and aluminum sabot. This item is Code A, approved for service use.

(E73201) Cartridge, 120mm, Target Practice Multi Purpose-Tracer (TPMP-T) M1002 is a target practice cartridge that simulates the size, weight, ballistics and the loader's function of setting the nose switch of the High Explosive Multi-Purpose cartridge M830A1. This round is fired from the M256 120mm smoothbore cannon on the M1A1/M1A2 Abrams Tank. The projectile is inert and composed of an aluminum body, steel nose with dummy plastic switch, aluminum tailcone, aluminum sabot, nylon obturators and tracer. The tailcone imparts spin to the projectile in flight for stabilization and provides the mechanism to limit the projectile's maximum range. The M1002 replaces the M831A1 cartridge. Tank crews will conduct live fire training with the cartridge to achieve and maintain gunnery proficiency. This item is Code A, approved for service use.

(E73400) 120mm M865A1 (Longer Length) Target Practice Cone-Stabilized Discarding Sabot with Tracer (TPCSDS-T) is the follow on to the M865 TPCSDS-T. The M865A1 is a target practice round that simulates the ballistics of the 120mm M829 Series Armor Piercing Fin-Stabilized Discarding Sabot with Tracer (APFSDS-T) round and is a more accurate representation of the M829A4, in terms of size and handling, than its predecessor. This round is fired from the M256 120mm smoothbore cannon on the M1A1/M1A2 Abrams Tank. The projectile is inert and is composed of a steel core, aluminum fin, aluminum sabots, nylon obturator and tracer. The fin imparts spin to the projectile in flight for stabilization and provides the mechanism to limit the projectile's maximum range. Tank crews will conduct live fire training with the cartridge to achieve and maintain gunnery proficiency. This item is Code A, approved for service use.

(E88105) 120mm HEMP-T, XM1147 The Advanced Multi Purpose (AMP) program is a direct fire line of sight 120mm large caliber munition under development for the Abrams Main Battle Tank. It has three modes of operation including point detonate, point detonate delay and airburst. AMP is the material solution for breaching double reinforced concrete walls and defeating Anti Tank Guided Missile (ATGM) teams from 50m to 2000m (T) and 50m to 4500m (O), a validated gap that cannot currently be met with existing stockpiled ammunition. In addition to added capability, AMP will also consolidate the capabilities of four

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 35: Tank Ammunition		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>existing stockpiled 120mm munitions, thereby addressing the users' battlecarry dilemma by allowing them to load a single munition that is capable of defeating multiple targets including ATGM teams, reinforced walls, personnel, light armor, bunkers, and obstacles. This item is Code B, not approved for service use.</p> <p>(E88106) 120mm M829A4 Armor Piercing Fin Stabilized, Discarding Sabot with Tracer (APFSDS-T) cartridge is the follow on to the M829A3 APFSDS-T cartridge. The M829A4 is the most effective anti-armor kinetic energy cartridge fired from the M256 120mm smoothbore cannon on the M1A1/M1A2 Abrams Tank. This cartridge has been designed to defeat advances in armor protection, specifically advancement in explosive reactive armor (ERA). The cartridge incorporates advancements in propulsion, using a temperature insensitive propellant, novel penetrator design, and an advanced composite sabot. The projectile system consists of a depleted uranium penetrator mated to a drag reducing windshield and flight stabilizing multi-bladed fin, all secured for launch with a composite sabot. The M829A4 captures several new technologies along with components previously used on previous APFSDS-T cartridges, but incorporates technology advancements to yield significant improvement in performance over previous fielded cartridges. This item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 35: Tank Ammunition

P-1 Line Item Number / Title:
1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E22125 / CTG, 105mm Tank TPDS-T, M724A2 (Short Rg KE Trnr) [CA58]	P-5a	A		- / 35.327	- / 8.719	- / -	- / 6.002	- / -	- / 6.002
P-5	E73201 / CTG, 120mm Tank, M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]	P-5a, P-21	A		- / 507.961	- / 47.882	- / 59.652	- / 59.416	- / -	- / 59.416
P-5	E73400 / CTG, 120mm Tank TPCSDS-T, M865 [C785]	P-5a, P-21	A		- / 2,710.504	- / 34.279	- / 41.893	- / 13.191	- / -	- / 13.191
P-5	E88105 / CTG, 120MM TANK, HEMP-T, XM1147	P-5a, P-21	B		- / -	- / 16.398	- / 10.000	- / 38.989	- / -	- / 38.989
P-5	E88106 / CTG, 120mm Tank APFSDS-T, M829A4 [CA64]	P-5a, P-21	A		- / 233.570	- / 44.623	- / 10.114	- / 115.846	- / -	- / 115.846
P-40	Total Gross/Weapon System Cost				- / 3,487.362	- / 151.901	- / 121.659	- / 233.444	- / -	- / 233.444

*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 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense (DoD) Instruction 3000.04 (Munitions Requirements Process) and Army Regulation (AR) 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

The FY 2021 Total Base procurement dollars in the amount of \$233.444 million supports procurement of 34,675 cartridges in support of the National Defense Strategy and Combatant Command (COCOM) requirements. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of CARTRIDGE, TANK, 105MM and 120MM ALL TYPES when possible.

(E22125) M724A2 - This is a training unique item not used in combat. FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$6.002 million supports the procurement of 1,518 cartridges.

TYPE CLASSIFICATION DATE: 2016

(E73201) M1002 (TPMP-T) - This is a training unique item not used in combat. FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$59.416 million supports the procurement of 20,398 cartridges.

TYPE CLASSIFICATION DATE: 2006

(E73400) M865A1 (Longer Length) - This is a training unique item not used in combat. FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$13.191 million supports the procurement of 2,312 cartridges.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 35: Tank Ammunition		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
TYPE CLASSIFICATION DATE: 1984		
(E88105) XM1147 (HEMP-T) Advanced Multi Purpose (AMP) - This is a war reserve item used in combat. FY 2021 request builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$38.989 million supports the procurement of 3,750 cartridges.		
TYPE CLASSIFICATION DATE: 2020		
(E88106) M829A4 (APFSDS-T) - This is a war reserve item used in combat. FY 2021 request builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$115.846 million supports the procurement of 6,600 cartridges.		
TYPE CLASSIFICATION DATE: 2015		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
		Item Number / Title [DODIC]: E22125 / CTG, 105mm Tank TPDS-T, M724A2 (Short Rg KE Trnr) [CA58]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	35.327	8.719	-	6.002	-	6.002
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	35.327	8.719	-	6.002	-	6.002
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	35.327	8.719	-	6.002	-	6.002

(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																		
COMPLETE ROUND ^(†)	2,415.72	11,191	27.034	2,095.00	3,212	6.729	-	-	-	2,726.88	1,518	4.139	-	-	-	2,726.88	1,518	4.139
Subtotal: Recurring Cost	-	-	27.034	-	-	6.729	-	-	-	-	-	4.139	-	-	-	-	-	4.139
Subtotal: Hardware Cost	-	-	27.034	-	-	6.729	-	-	-	-	-	4.139	-	-	-	-	-	4.139
Support - Acceptance Testing Cost																		
First Article Test	-	-	1.335	-	-	0.503	-	-	-	-	-	0.181	-	-	-	-	-	0.181
Acceptance Test	-	-	-	-	-	-	-	-	-	-	-	0.327	-	-	-	-	-	0.327
Subtotal: Support - Acceptance Testing Cost	-	-	1.335	-	-	0.503	-	-	-	-	-	0.508	-	-	-	-	-	0.508
Support - Product Improvement Cost																		
Safety	-	-	-	-	-	0.050	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	0.050	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	6.957	-	-	1.437	-	-	-	-	-	1.354	-	-	-	-	-	1.354
Subtotal: Support - Production Engineering Cost	-	-	6.957	-	-	1.437	-	-	-	-	-	1.354	-	-	-	-	-	1.354
Gross/Weapon System Cost	-	-	35.327	-	-	8.719	-	-	-	-	-	6.002	-	-	-	-	-	6.002

Remarks:

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35	P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types	Item Number / Title [DODIC]: E22125 / CTG, 105mm Tank TPDS-T, M724A2 (Short Rg KE Trnr) [CA58]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Complete Round unit price cost growth from FY 2019 to FY 2021 is due to lower demand and new FY 2021 contract.

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35			P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types					Item Number / Title [DODIC]: E22125 / CTG, 105mm Tank TPDS-T, M724A2 (Short Rg KE Trnr) [CA58]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND		2019	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	C / FFP	PICATINNY ARSENAL, NJ	Feb 2019	Nov 2020	3,212	2,095.00	Y		
COMPLETE ROUND		2021	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2022	1,518	2,726.88	Y		

Remarks:
FY 2019 complete round is awarded as an option to an existing contract. FY 2021 will be a new contract. This is a training standard item. FY 2021 Base procurement supports annual training and builds a depot level in accordance with the Army's procurement goals.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
		Item Number / Title [DODIC]: E73201 / CTG, 120mm Tank, M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	507.961	47.882	59.652	59.416	-	59.416
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	507.961	47.882	59.652	59.416	-	59.416
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	507.961	47.882	59.652	59.416	-	59.416

(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																		
COMPLETE ROUND ^(†)	2,142.04	227,373	487.042	2,509.17	16,244	40.759	2,572.12	21,087	54.238	2,683.31	20,398	54.734	-	-	-	2,683.31	20,398	54.734
Subtotal: Recurring Cost	-	-	487.042	-	-	40.759	-	-	54.238	-	-	54.734	-	-	-	-	-	54.734
Subtotal: Hardware Cost	-	-	487.042	-	-	40.759	-	-	54.238	-	-	54.734	-	-	-	-	-	54.734
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	1.035	-	-	0.636	-	-	0.579	-	-	0.471	-	-	-	-	-	0.471
Subtotal: Support - Acceptance Testing Cost	-	-	1.035	-	-	0.636	-	-	0.579	-	-	0.471	-	-	-	-	-	0.471
Support - Product Improvement Cost																		
Safety	-	-	-	-	-	2.459	-	-	-	-	-	-	-	-	-	-	-	-
Production Verification Test	-	-	2.025	-	-	-	-	-	0.552	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	2.025	-	-	2.459	-	-	0.552	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	17.838	-	-	4.022	-	-	4.279	-	-	4.208	-	-	-	-	-	4.208
Subtotal: Support - Production Engineering Cost	-	-	17.838	-	-	4.022	-	-	4.279	-	-	4.208	-	-	-	-	-	4.208
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.021	-	-	0.005	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Item Number / Title [DODIC]: E73201 / CTG, 120mm Tank, M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]		

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)
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.021	-	-	0.005	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003
Gross/Weapon System Cost	-	-	507.961	-	-	47.882	-	-	59.652	-	-	59.416	-	-	-	-	-	59.416

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35	P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types	Item Number / Title [DODIC]: E73201 / CTG, 120mm Tank, M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	GENERAL DYNAMICS ORD AND TACT / ST PETERSBURG, FL	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Jul 2021	8,934	2,509.17	Y		
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2020	7,310	2,509.17	Y		
COMPLETE ROUND ^(†)		2020	GENERAL DYNAMICS ORD AND TACT / ST PETERSBURG, FL	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Feb 2021	11,598	2,572.12	Y		
COMPLETE ROUND ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Feb 2021	9,489	2,572.12	Y		
COMPLETE ROUND ^(†)		2021	GENERAL DYNAMICS ORD AND TACT / ST PETERSBURG, FL	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Feb 2022	11,219	2,683.31	Y		
COMPLETE ROUND ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Feb 2022	9,179	2,683.31	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2019 - FY 2021 complete round is an average unit cost between two contractors. The Government will determine the quantity split between the two contractors in the year of execution.

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35										P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types										Item Number / Title [DODIC]: E73201 / CTG, 120mm Tank, M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]									

Cost Elements <i>(Units in Thousands)</i>				Fiscal Year 2021														Fiscal Year 2022														B A L A N C E					
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021														Calendar Year 2022																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
COMPLETE ROUND																																					
Prior Years Deliveries: 227373																																					
	1	2019	ARMY	8.934	.000	8.934	-	-	-	-	-	-	-	-	-	-	-	1.003	7.800	.131											.000						
	2	2019	ARMY	7.310	.000	7.310	2.880	2.880	1.550																					.000							
	1	2020	ARMY	11.598	.000	11.598	-	-	-	-	1.190	1.188	1.188	1.188	1.188	-	-	.904	1.188	1.188	1.188	1.188											.000				
	2	2020	ARMY	9.489	.000	9.489	-	-	-	-	.799	.790	.790	.790	.790	.790	.790	.790	.790	.790	.790	.790											.000				
	1	2021	ARMY	11.219	.000	11.219											A	-	-	-	-	-	-	-	-	-	.945	.934	.934	.934	.934	.934	.934	.934	.934	3.736	
	1	2021	MC (†)	3.092	.000	3.092											A	-	-	-	-	-	-	-	-	-	-	.265	.257	.257	.257	.257	.257	.257	.257	.257	1.028
	1	2021	Total	14.311	.000	14.311											-	-	-	-	-	-	-	-	-	-	-	1.210	1.191	1.191	1.191	1.191	1.191	1.191	1.191	1.191	4.764
	2	2021	ARMY	9.179	.000	9.179											A	-	-	-	-	-	-	-	-	-	-	.775	.764	.764	.764	.764	.764	.764	.764	.764	3.056
	2	2021	MC (†)	2.529	.000	2.529											A	-	-	-	-	-	-	-	-	-	-	.219	.210	.210	.210	.210	.210	.210	.210	.210	.840
	2	2021	Total	11.708	.000	11.708											-	-	-	-	-	-	-	-	-	-	-	.994	.974	.974	.974	.974	.974	.974	.974	.974	3.896
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35										P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types										Item Number / Title [DODIC]: E73201 / CTG, 120mm Tank, M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2023													Fiscal Year 2024													B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023													Calendar Year 2024													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
COMPLETE ROUND																																	
Prior Years Deliveries: 227373																																	
	1	2019	ARMY	8.934	8.934	.000																								.000			
	2	2019	ARMY	7.310	7.310	.000																								.000			
	1	2020	ARMY	11.598	11.598	.000																								.000			
	2	2020	ARMY	9.489	9.489	.000																								.000			
	1	2021	ARMY	11.219	7.483	3.736	.934	.934	.934	.934																					.000		
	1	2021	MC (†)	3.092	2.064	1.028	.257	.257	.257	.257																					.000		
	1	2021	Total	14.311	9.547	4.764	1.191	1.191	1.191	1.191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		.000			
	2	2021	ARMY	9.179	6.123	3.056	.764	.764	.764	.764																				.000			
	2	2021	MC (†)	2.529	1.689	.840	.210	.210	.210	.210																				.000			
	2	2021	Total	11.708	7.812	3.896	.974	.974	.974	.974	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		.000			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
		Item Number / Title [DODIC]: E73201 / CTG, 120mm Tank, M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	GENERAL DYNAMICS ORD AND TACT - ST PETERSBURG, FL	100	2,880	7,800	6	6	11	17	6	6	11	17
2	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	100	2,880	7,800	6	6	11	17	6	6	11	17

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

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

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
		Item Number / Title [DODIC]: E73400 / CTG, 120mm Tank TPCSDS-T, M865 [C785]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	2,710.504	34.279	41.893	13.191	-	13.191
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	2,710.504	34.279	41.893	13.191	-	13.191
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	2,710.504	34.279	41.893	13.191	-	13.191

(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																		
COMPLETE ROUND ^(†)	715.27	3,649,000	2,610.020	-	-	-	2,232.60	16,505	36.849	3,159.59	2,312	7.305	-	-	-	3,159.59	2,312	7.305
Subtotal: Recurring Cost	-	-	2,610.020	-	-	-	-	-	36.849	-	-	7.305	-	-	-	-	-	7.305
Subtotal: Hardware Cost	-	-	2,610.020	-	-	-	-	-	36.849	-	-	7.305	-	-	-	-	-	7.305
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	1.634	-	-	0.854	-	-	0.558	-	-	0.996	-	-	-	-	-	0.996
Subtotal: Support - Acceptance Testing Cost	-	-	1.634	-	-	0.854	-	-	0.558	-	-	0.996	-	-	-	-	-	0.996
Support - Product Improvement Cost																		
Reliability	-	-	9.959	-	-	1.382	-	-	0.847	-	-	0.984	-	-	-	-	-	0.984
Safety	-	-	-	-	-	1.142	-	-	1.349	-	-	1.800	-	-	-	-	-	1.800
Subtotal: Support - Product Improvement Cost	-	-	9.959	-	-	2.524	-	-	2.196	-	-	2.784	-	-	-	-	-	2.784
Support - Production Engineering Cost																		
Production Engineering	-	-	17.207	-	-	2.220	-	-	2.286	-	-	2.103	-	-	-	-	-	2.103
Subtotal: Support - Production Engineering Cost	-	-	17.207	-	-	2.220	-	-	2.286	-	-	2.103	-	-	-	-	-	2.103
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.010	-	-	0.007	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35	P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types	Item Number / Title [DODIC]: E73400 / CTG, 120mm Tank TPCSDS-T, M865 [C785]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.010	-	-	0.007	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003
Support - Recapitalization Cost																		
Recapitalization	-	-	71.674	-	-	28.674	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Recapitalization Cost</i>	-	-	71.674	-	-	28.674	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	2,710.504	-	-	34.279	-	-	41.893	-	-	13.191	-	-	-	-	-	13.191

Remarks:
Unit price increase from FY 2020 to FY 2021 due to the significant reduction in the number of rounds being ordered, resulting in a lower quantity range at a higher price.

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35	P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types	Item Number / Title [DODIC]: E73400 / CTG, 120mm Tank TPCSDS-T, M865 [C785]
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2020	GENERAL DYNAMICS ORD AND TACT / ST PETERSBURG, FL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	8,253	2,233.80	Y		
COMPLETE ROUND ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	8,252	2,233.80	Y		
COMPLETE ROUND ^(†)		2021	GENERAL DYNAMICS ORD AND TACT / ST PETERSBURG, FL	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	1,156	3,159.59	Y		
COMPLETE ROUND ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	1,156	3,159.59	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2019 - FY 2021 complete round is an average unit cost between two contractors. The Government will determine the quantity split be between the two contractors in the year of execution.

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Exhibit P-21, Production Schedule: PB 2021 Army												Date: February 2020											
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35						P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types						Item Number / Title [DODIC]: E73400 / CTG, 120mm Tank TPCSDS-T, M865 [C785]											

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2020												Fiscal Year 2021												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020												Calendar Year 2021												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
Prior Years Deliveries: 3649000																															
	1	2020	ARMY	8,253	0	8,253																									
	2	2020	ARMY	8,252	0	8,252																									
	1	2021	ARMY	1,156	0	1,156																									
	2	2021	ARMY	1,156	0	1,156																									
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35										P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types										Item Number / Title [DODIC]: E73400 / CTG, 120mm Tank TPCSDS-T, M865 [C785]									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2022															Fiscal Year 2023												BALANCE		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022															Calendar Year 2023												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
COMPLETE ROUND																																		
Prior Years Deliveries: 3649000																																		
	1	2020	ARMY	8,253	4,813	3,440	687	687	687	687	692																		0					
	2	2020	ARMY	8,252	4,813	3,439	687	687	687	687	691																		0					
	1	2021	ARMY	1,156	0	1,156	-	-	-	-	-	100	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	0					
	2	2021	ARMY	1,156	0	1,156	-	-	-	-	-	100	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	0					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
		Item Number / Title [DODIC]: E73400 / CTG, 120mm Tank TPCSDS-T, M865 [C785]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	GENERAL DYNAMICS ORD AND TACT - ST PETERSBURG, FL	100	2,000	4,000	6	6	12	18	6	6	12	18
2	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	100	2,000	4,000	6	6	12	18	6	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
		Item Number / Title [DODIC]: E88105 / CTG, 120MM TANK, HEMP-T, XM1147

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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)	-	16.398	10.000	38.989	-	38.989
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	16.398	10.000	38.989	-	38.989
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	16.398	10.000	38.989	-	38.989

(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																		
COMPLETE ROUND ^(†)	-	-	-	14,206.56	280	3.978	14,206.56	420	5.967	9,500.00	3,750	35.625	-	-	-	9,500.00	3,750	35.625
Subtotal: Recurring Cost	-	-	-	-	-	3.978	-	-	5.967	-	-	35.625	-	-	-	-	-	35.625
Subtotal: Hardware Cost	-	-	-	-	-	3.978	-	-	5.967	-	-	35.625	-	-	-	-	-	35.625
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	1.524	-	-	1.043	-	-	1.243	-	-	-	-	-	1.243
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	1.524	-	-	1.043	-	-	1.243	-	-	-	-	-	1.243
Support - Non-Recurring Support Cost																		
Facilitization	-	-	-	-	-	8.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Non-Recurring Support Cost	-	-	-	-	-	8.000	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	1.636	-	-	2.119	-	-	1.368	-	-	-	-	-	1.368
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	1.636	-	-	2.119	-	-	1.368	-	-	-	-	-	1.368
Support - Study & Analysis Cost																		
Study & Analysis	-	-	-	-	-	1.260	-	-	0.871	-	-	0.753	-	-	-	-	-	0.753
Subtotal: Support - Study & Analysis Cost	-	-	-	-	-	1.260	-	-	0.871	-	-	0.753	-	-	-	-	-	0.753

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35	P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types	Item Number / Title [DODIC]: E88105 / CTG, 120MM TANK, HEMP-T, XM1147
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	-	-	-	16.398	-	-	10.000	-	-	38.989	-	-	-	-	-	38.989

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35			P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types				Item Number / Title [DODIC]: E88105 / CTG, 120MM TANK, HEMP-T, XM1147				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	PICATINNY ARSENAL, NJ	Jul 2020	Jul 2021	280	14,206.56	Y		
COMPLETE ROUND ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	PICATINNY ARSENAL, NJ	Jul 2020	Jul 2021	420	14,206.56	Y		
COMPLETE ROUND ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2022	3,750	9,500.00	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2019 - FY 2020 will be part of contract for Low Rate Initial Production (LRIP) and FY 2021 will be first year of Full Rate Production (FRP).

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35										P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types										Item Number / Title [DODIC]: E88105 / CTG, 120MM TANK, HEMP-T, XM1147									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022														Fiscal Year 2023														B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 1	BAL D U E A S O F 1 O C T	Calendar Year 2022														Calendar Year 2023														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
1		2019	ARMY	280	280	0																								0					
1		2020	ARMY	420	420	0																								0					
1		2021	ARMY	3,750	0	3,750	-	-	-	-	-	312	312	312	312	312	312	312	312	312	312	312	312	312	312	318				0					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
		Item Number / Title [DODIC]: E88105 / CTG, 120MM TANK, HEMP-T, XM1147

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	100	500	2,000	6	9	12	21	6	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35		P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types
		Item Number / Title [DODIC]: E88106 / CTG, 120mm Tank APFSDS-T, M829A4 [CA64]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	233.570	44.623	10.114	115.846	-	115.846
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	233.570	44.623	10.114	115.846	-	115.846
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	233.570	44.623	10.114	115.846	-	115.846

(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																		
COMPLETE ROUND ^(†)	12,582.37	15,752	198.197	16,000.00	2,503	40.048	16,320.00	380	6.202	16,646.40	6,600	109.866	-	-	-	16,646.40	6,600	109.866
Subtotal: Recurring Cost	-	-	198.197	-	-	40.048	-	-	6.202	-	-	109.866	-	-	-	-	-	109.866
Subtotal: Hardware Cost	-	-	198.197	-	-	40.048	-	-	6.202	-	-	109.866	-	-	-	-	-	109.866
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.185	-	-	0.155	-	-	0.194	-	-	-	-	-	0.194
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.185	-	-	0.155	-	-	0.194	-	-	-	-	-	0.194
Support - Product Improvement Cost																		
Production Verification Test	-	-	2.494	-	-	0.051	-	-	0.098	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	2.494	-	-	0.051	-	-	0.098	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	32.878	-	-	4.339	-	-	3.660	-	-	5.785	-	-	-	-	-	5.785
Subtotal: Support - Production Engineering Cost	-	-	32.878	-	-	4.339	-	-	3.660	-	-	5.785	-	-	-	-	-	5.785
Gross/Weapon System Cost	-	-	233.570	-	-	44.623	-	-	10.114	-	-	115.846	-	-	-	-	-	115.846

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35			P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types				Item Number / Title [DODIC]: E88106 / CTG, 120mm Tank APFSDS-T, M829A4 [CA64]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Dec 2019	Mar 2021	2,503	16,000.00	Y		
COMPLETE ROUND ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Dec 2019	Mar 2021	380	16,320.00	Y		
COMPLETE ROUND ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Jun 2022	6,600	16,646.40	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2020 will be a new contract.

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Exhibit P-21, Production Schedule: PB 2021 Army												Date: February 2020															
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35						P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types												Item Number / Title [DODIC]: E88106 / CTG, 120mm Tank APFSDS-T, M829A4 [CA64]									

Cost Elements (Units in Each)					Fiscal Year 2020															Fiscal Year 2021															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020															Calendar Year 2021															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
COMPLETE ROUND																																					
Prior Years Deliveries: 15752																																					
1	2019	ARMY	2,503	0	2,503		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	209	209	209	209	209	209	209	1,040	
1	2020	ARMY	380	0	380		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	32	32	32	32	32	32	156		
1	2021	ARMY	6,600	0	6,600																							A	-	-	-	-	-	-	6,600		

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35										P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types										Item Number / Title [DODIC]: E88106 / CTG, 120mm Tank APFSDS-T, M829A4 [CA64]									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2022												Fiscal Year 2023												BALANCE		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022												Calendar Year 2023												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L		A U G	S E P
COMPLETE ROUND																															
Prior Years Deliveries: 15752																															
1		2019	ARMY	2,503	1,463	1,040	209	209	209	209	204																		0		
1		2020	ARMY	380	224	156	32	32	32	32	28																		0		
1		2021	ARMY	6,600	0	6,600	-	-	-	-	-	-	-	-	561	549	549	549	549	549	549	549	549	549	549	549	549		0		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 35				P-1 Line Item Number / Title: 1120E22203 / Cartridges, Tank, 105MM And 120MM, All Types				Item Number / Title [DODIC]: E88106 / CTG, 120mm Tank APFSDS-T, M829A4 [CA64]				
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	300	500	700	6	6	15	21	6	6	14	20

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

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

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition	P-1 Line Item Number / Title: 0530E15101 / Artillery Cartridges, 75MM & 105MM, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,912.527	30.006	44.675	35.963	-	35.963	39.246	25.475	25.475	25.475	-	3,138.842
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,912.527	30.006	44.675	35.963	-	35.963	39.246	25.475	25.475	25.475	-	3,138.842
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,912.527	30.006	44.675	35.963	-	35.963	39.246	25.475	25.475	25.475	-	3,138.842

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

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

Description:

(E15101) Artillery Cartridges, 75MM And 105MM, All Types
This budget line includes Cartridge, Artillery, 75mm & 105mm, All Types.

(E21501) CTG, ARTY, 105MM HE, M1 W/O FUZE

The 105mm M1 High Explosive (HE) cartridge contains a HE fill and is used primarily for training although some cartridges are expended in combat operations for fragmentation and blast. The cartridge is loaded with an M67 propellant charge, consisting of seven numbered increment bags sewn together in numerical order. Projectile function is dependent upon the fuze used and may function on impact (instantaneous or delay), above ground at a predetermined height or in proximity to the target area. Fuze function detonates the HE projectile filler resulting in projectile fragmentation and blast. Range varies from 3.5 to 11.3 kilometers, depending on the number of charge bags used. The program remanufactures/recapitalizes the remaining unserviceable cartridges through replacement of M67 Prop Charge and Primer at a reduced cost over new production to provide a cost effective training cartridge. This item is Code A, approved for service use.

(E21702) CTG, ARTY, 105MM VL ILLUM, M314A3

The 105mm M314A3 is a Visible Light (VL) Illuminating Cartridge compatible with the M762 series Electronic Time (ET) fuze, M67 propelling charge, and is packaged in the PA117 Shipping Container. The M314A3 consists of a 40 gram expelling charge, illuminant canister and parachute assembly. Upon fuze function, the expelling charge simultaneously ignites the illuminate while ejecting it from the projectile. Once dispensed, fins on the canister assist in reducing the spin rate while the parachute provides a descent rate of 12 meter per second (m/s). The item is Code A approved for service use.

(E22002) CTG, ARTY, 105MM SMOKE HC, M84 W/O FUZE The 105mm M84 Hexachloroethane Zinc Oxide (HC) Smoke compatible with the M762 Electronic Time (ET) series Fuze is a semi-fixed smoke cartridge which is comprised of the M14 Cartridge Case, M28 Percussion Primer, M67 Propellant Charge, and a projectile that contains the pinned base plug, a black powder expelling charge and three HC smoke canisters. Each metal canister contains a core igniter flash tube, a first fire mix and the HC smoke composition. When ignited, HC composition produces a caustic white smoke. The M84A1 Cartridge is loaded and fired in a conventional manner. As the round approaches the target area, the fuze ignites the black powder expelling charge which simultaneously ignites and expels the three HC canisters from the base of the carrier. The smoke canisters fall to the ground producing billowing clouds of smoke which last from 40 to 90 seconds. The HC Smoke is less toxic and less incendiary than White Phosphorous (WP) and can be used on ranges that prohibit WP rounds for training due to environmental restrictions. The item is Code A approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition

P-1 Line Item Number / Title:
0530E15101 / Artillery Cartridges, 75MM & 105MM, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E21501 / CTG, 105mm ARTY HE, M1 w/o Fuze [C445]		A		- / 2,881.036	- / 30.006	- / 29.386	- / 25.474	- / -	- / 25.474
P-5	E21702 / CTG, ARTY, 105MM VL ILLUM M314 W/O FUZE [C541]		A		- / 31.491	- / -	- / 15.289	- / -	- / -	- / -
P-5	E22002 / CTG, ARTY, 105MM SMOKE HC M84 W/O FUZE	P-5a, P-21	A		- / -	- / -	- / -	- / 10.489	- / -	- / 10.489
P-40	Total Gross/Weapon System Cost				- / 2,912.527	- / 30.006	- / 44.675	- / 35.963	- / -	- / 35.963

*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 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base dollars in the amount of \$35.963 million supports the recapitalization of 100,000 M1 High Explosive cartridges and procurement of 6,265 M84 Smoke Cartridges.

(E21501) CTG, ARTY, 105MM HE, M1 W/O FUZE

This program will remanufacture/recapitalize unserviceable rounds in the inventory.

This is a training standard item used in both training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army procurement goals. FY 2021 Total Base procurement dollars in the amount of \$25.474 million supports the procurement of 100,000 M1 recapitalized cartridges.

TYPE CLASSIFICATION DATE: 1966

(E21702) CTG, ARTY, 105MM VL ILLUM, M314A3

This program will remanufacture/recapitalize unserviceable rounds in the inventory.

This is a training standard item used in both training and combat. There is no FY 2021 funding request.

TYPE CLASSIFICATION DATE: 2009

(E21705) CTG, ARTY, 105MM IR ILLUM, M1064

This program will remanufacture/recapitalize unserviceable rounds in the inventory.

This is a training standard item used in both training and combat. There is no FY 2021 funding request.

TYPE CLASSIFICATION DATE: 2009

(E22002) CTG, ARTY, 105MM SMOKE HC, M84 W/O FUZE

This is a training standard item used in both training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army procurement goals. FY 2021 Total Base procurement dollars in the amount of \$10.489 million supports the procurement of 6,265 cartridges. E22002 is a new start in FY 2021

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition		P-1 Line Item Number / Title: 0530E15101 / Artillery Cartridges, 75MM & 105MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
TYPE CLASSIFICATION DATE: 1978		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 0530E15101 / Artillery Cartridges, 75MM & 105MM, All Types	Item Number / Title [DODIC]: E21501 / CTG, 105mm ARTY HE, M1 w/ o Fuze [C445]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,881.036	30.006	29.386	25.474	-	25.474
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,881.036	30.006	29.386	25.474	-	25.474
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,881.036	30.006	29.386	25.474	-	25.474

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

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

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

Cost Elements	Prior Years			FY 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 - Recapitalization Cost																		
Recapitalization	-	-	2,881.036	-	-	30.006	-	-	29.386	-	-	25.474	-	-	-	-	-	25.474
<i>Subtotal: Support - Recapitalization Cost</i>	-	-	2,881.036	-	-	30.006	-	-	29.386	-	-	25.474	-	-	-	-	-	25.474
Gross/Weapon System Cost	-	-	2,881.036	-	-	30.006	-	-	29.386	-	-	25.474	-	-	-	-	-	25.474

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 0530E15101 / Artillery Cartridges, 75MM & 105MM, All Types	Item Number / Title [DODIC]: E21702 / CTG, ARTY, 105MM VL ILLUM M314 W/O FUZE [C541]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	31.491	-	15.289	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	31.491	-	15.289	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	31.491	-	15.289	-	-	-

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

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

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

Cost Elements	Prior Years			FY 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 - Recapitalization Cost																		
Recapitalization	-	-	31.491	-	-	-	-	-	15.289	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Recapitalization Cost</i>	-	-	31.491	-	-	-	-	-	15.289	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	31.491	-	-	-	-	-	15.289	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 0530E15101 / Artillery Cartridges, 75MM & 105MM, All Types	Item Number / Title [DODIC]: E22002 / CTG, ARTY, 105MM SMOKE HC M84 W/O FUZE

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	-	10.489	-	10.489
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	10.489	-	10.489
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	10.489	-	10.489

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND ^(†)	-	-	-	-	-	-	-	-	-	1,540.02	6,265	9.648	-	-	-	1,540.02	6,265	9.648
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	9.648	-	-	-	-	-	9.648
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	9.648	-	-	-	-	-	9.648
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.841	-	-	-	-	-	0.841
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.841	-	-	-	-	-	0.841
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	10.489	-	-	-	-	-	10.489

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 0530E15101 / Artillery Cartridges, 75MM & 105MM, All Types				Item Number / Title [DODIC]: E22002 / CTG, ARTY, 105MM SMOKE HC M84 W/O FUZE					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2021	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2024	6,265	1,540.02	Y		

^(†) indicates the presence of a P-21

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2021 Army																						Date: February 2020													
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37								P-1 Line Item Number / Title: 0530E15101 / Artillery Cartridges, 75MM & 105MM, All Types								Item Number / Title [DODIC]: E22002 / CTG, ARTY, 105MM SMOKE HC M84 W/O FUZE																			
Cost Elements <i>(Units in Each)</i>				Fiscal Year 2023												Fiscal Year 2024								BALANCE											
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B		M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
COMPLETE ROUND																																			
1		2021	ARMY	6,265	0	6,265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,000	2,000	2,265					0
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 0530E15101 / Artillery Cartridges, 75MM & 105MM, All Types
		Item Number / Title [DODIC]: E22002 / CTG, ARTY, 105MM SMOKE HC M84 W/O FUZE

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TO BE SELECTED - TBS01	2,000	3,500	5,000	6	6	36	42	6	6	36	42

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

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

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition	P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: 123

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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,376.648	305.509	256.037	293.692	-	293.692	261.509	391.794	423.370	549.781	-	3,858.340
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,376.648	305.509	256.037	293.692	-	293.692	261.509	391.794	423.370	549.781	-	3,858.340
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,376.648	305.509	256.037	293.692	-	293.692	261.509	391.794	423.370	549.781	-	3,858.340

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

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

Description:

(E89500) ARTILLERY PROJECTILE, 155MM, ALL TYPES
This budget line includes Projectiles, Artillery, 155mm, All Types.

(E67800) PROJ, ARTY, 155MM WP SMOKE M825

The 155mm WP M825A1 is an improved artillery projectile which produces a ground screening smoke cloud 125-150 meters wide for 5-10 minutes. This smoke screen is produced by burning multiple wedge-shaped pieces of felt saturated with White Phosphorous (WP). The system consists principally of a projectile carrier and canister containing 116 WP felt wedges and a center core burster. Projectile carrier is comprised of an ogive, expulsion charge, modified all steel body, and a one-piece steel dome shaped base. Upon M762/M762A1 Electronic Timing (ET) fuze function, the Expulsion Charge is initiated which simultaneously dispenses the canister and ignites a short delay. This delay provides ample time for canister and projectile body separation prior to functioning of the center core Burster which ruptures the canister and disperses 116 WP felt wedges. In less than 45 seconds, a dense and uniform smoke screen is created by burning of the WP. This projectile is shipped with a fusible lifting plug which protects the item during shipping, handling, and storage.

This item is Code A, approved for service use.

(E26900) PROJ, ARTY, 155MM VL ILLUM M1124

The 155mm M1124 Visual Light (VL) Illumination Projectile is fired from 155mm howitzers and is used to illuminate the battlefield to a maximum range of 22.5 kilometers. The M1124 utilizes projectile bodies generated from an on-going M483 Dual Purpose Improved Conventional Munition (DPICM) demilitarization program and leverages the payload contained in the M485A2 VL Illuminating Projectile. The M1124 contains a Canister Loading Assembly, Expulsion Charge, and numerous spacers. The Canister Loading Assembly consists of a Visual Light (VL) Illuminating Candle, Main Parachute, Drogue Parachute, Delay, and Secondary Expulsion Charge. The outer shell of the canister is fitted with three longitudinal fins. The projectile uses an M762 series Electronic Time Fuze. When the fuze functions, the primary expelling charge ignites, forcing the drogue parachute and canister assembly against the base plate, rupturing the base pins and expelling the canister and parachute. The drogue parachute then deploys and the canister fins extend. The expelling charge also ignites the delay element in the canister nose. The delay element ignites the secondary expelling charge within the canister after 6.5 - 9 seconds, igniting the candle and expelling the main parachute. With the main parachute open, the illumination candle descends at 15 feet per second and burns for 75 seconds minimum producing approximately 1,000,000 candlepower.

This item is Code A, approved for service use.

(E66800) PROJ, ARTY, 155MM HE, M795

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition		P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: 123		
<p>The M795 High Explosive (HE) Projectile is the primary HE round used for combat operations with maximum range of 22.5 kilometers. The M795 incorporates Insensitive Munitions (IM) technologies that reduces vulnerability from unplanned stimuli e.g. fire/heat, shock and impact, while maintaining or exceeding the same level of effectiveness in combat. The 155mm M795 has a high fragmentation steel (HF1) body projectile filled with 23.8 pounds of IMX101 Explosive fill, PBXN-9 Supplementary Charge, and Meltable Fuze Plug. The projectile can use several different fuzes (impact, mechanical time, electronic time and short intrusion proximity). It is used for conventional fire support for harassment and interdiction, fragmentation and blast effect. The M795 projectile is employed against personnel, trucks, electronic surveillance and target acquisition devices, supply points, command and control and communications (C3) installations, and mechanized and armored forces. This item is Code A, approved for service use.</p> <p>(E27603) PROJ, ARTY, 155MM HE IM TRAINING M1122 The 155mm M1122/E1 High Explosive (HE) Projectile will be the primary HE round used for training. The M1122 utilizes M483A1 Dual Purpose Improved Conventional Munition (DPICM) metal parts from an ongoing M483A1 demil effort, is filled with high density concrete to simulate the weight of the M795 HE Projectile, and incorporates several Insensitive Munitions (IM) technologies to increase survivability and safety. The Army has depleted the unserviceable stockpile of M483 and therefore there are no available M483A1 DPICM bodies to re-use. The M1122E1 program utilizes a one-piece projectile body with a flat base, and is filled with low density concrete to simulate the weight of the M795 HE Projectile. Similarly to the M1122, the M1122E1 incorporates several Insensitive Munitions (IM) technologies, including IMX-104 explosive fill, PBXN-9 Supplementary Charge, Plastic Fuze Well Liner and Meltable Fuze Plug. Both the M1122 and the M1122E1 will replicate the flight characteristics of the wartime M795 HE Projectile with a maximum range of 22.5 kilometers. M1122 is Code A, approved for service use. M1122E1 is Code B, not approved for service use.</p> <p>(E66501) PROJ, ARTY, 155MM HE RAP XM1113 The XM113 High Explosive (HE), Rocket Assisted Projectile (RAP) is an extended range munition for warfare operations with maximum range of 40 kilometers in 39 caliber weapon systems and 70 kilometers in 58 caliber weapon systems. The XM1113 projectile is a critical munition that supports the Army's modernization priorities in support the National Defense Strategies. The XM1113 projectile incorporates Insensitive Munitions (IM) technologies that reduces vulnerability from unplanned stimuli e.g. fire/heat, shock and impact, while maintaining or exceeding the same level of effectiveness in combat. The XM1113 projectile has a high fragmentation steel (HF1) body projectile filled with 12 pounds of IMX104 Explosive fill, PBXN-9 Supplementary Charge, and Meltable Fuze Plug. Extended ranges are achieved with 12 pounds of rocket grain propellant. The projectile can use several different conventional fuzes (impact, mechanical time, electronic time and short intrusion proximity) as well as Precision Guidance Kit (PGK). It is used for conventional fire support for harassment and interdiction, fragmentation and blast effect. The XM1113 projectile is employed against personnel, trucks, electronic warfare surveillance, target acquisition, supply points, command and control and communications (C3), indirect fire capabilities, air defense artillery, and light armored vehicles. This item is Code B, not approved for service use.</p> <p>(E27001) PROJ, ARTY, 155MM HC SMOKE M116 Series The M116 Series base ejection projectile has a hollow steel casing containing four canisters filled with HC (white) smoke composition. These smoke canisters are stacked within the projectile and separated by felt spacers. Upon fuze function, an expelling charge consisting of 0.34 pounds of black powder flashes through the central tube to ignite the smoke canisters, blow off the base and dispenses all smoke canisters. An effective smoke cloud is produced within 30 seconds, and continues for approximately 1.5 minutes. This item is Code A, approved for service use.</p> <p>(E68510) PROJ, ARTY, 155MM BONUS, MK2 The 155mm Bonus, MK2, is a projectile solution to address the current munition capability gap against medium to heavy armor threats. The capability gap was identified during the Analysis of Alternatives to determine a replacement for Dual Purpose Improved Conventional Munition (DPICM) capability, a cluster munition that must be replaced in accordance with current Department of Defense Cluster Munitions (CM) policy. The 155mm Bonus, MK2, is an off the shelf projectile from Sweden containing two sensor fuzed submunitions, and provide lethal effects against disbursed and poorly located light, medium and heavy armored targets. Bonus will be initially fielded as an Urgent Material Release (UMR), followed by Full Material Release, and meets CM policy. Bonus is a bridging strategy to immediately address critical capability gaps from the loss of DPICM and mitigates risks until the planned program of record (Cannon Delivered Area Effects Munition) is completed. This bridging strategy supports the Army's modernization priorities in support of the National Defense Strategy. This item is Code A, approved for service use.</p> <p>(E67802) PROJ, ARTY, 155MM, HE W/ BASEBLEED XM1128</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition		P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: 123		
<p>The XM1128 Extended Range High Explosive (HE) projectile is intended as a replacement for the M795 projectile as the primary HE round for warfare operations utilizing current 39 caliber weapon systems. The XM1128 will have a maximum range of 30km compared to 22.5km with current M795 and incorporate Insensitive Munitions (IM) technologies that reduces vulnerability from unplanned stimuli e.g. fire/heat, shock and impact, while maintaining or exceeding the same level of effectiveness in combat. The 155mm XM1128 consists of a high fragmentation (HF-1) steel body with a streamlined ogive and a base bleed to reduce drag and extend range. The main payload is 20 pounds of IMX-104. The projectile will be compatible with our conventional fuzes (impact, mechanical time, electronic time, proximity) and Precision Guidance Kit. It will be used for conventional fire support for harassment and interdiction, fragmentation, and blast effect. The XM1128 can be employed against personnel, trucks, electronic surveillance and target acquisition devices, supply points, command and control and communications (C3) installations, and mechanized and armored forces. This item is Code B and not approved for service use.</p> <p>(E21618) PROJ, ARTY, 155mm Extended Range Spotting, M1121 The 155mm Extended Range Spotting, M1121 Artillery Round utilizes projectile bodies generated from an on-going M483 Dual Purpose Improved Conventional Munition (DPICM) demilitarization program and incorporates a more producible White Phosphorous (WP) Bulk-filled Canister with 11.0 lbs of WP that provides smoke spotting capability to a maximum range of 22.5 kilometers providing increased operational effectiveness and improved training. This item is Code A, approved for service use.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition

P-1 Line Item Number / Title:
3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types

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

Line Item MDAP/MAIS Code: 123

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	E21618 / PROJ, ARTY, 155mm Extended Range Spotting, M1121 [DA66]	P-5a	A		- / 10.363	- / 9.860	- / -	- / 8.521	- / -	- / 8.521
P-5	E26900 / PROJ, 155mm ARTY VL ILLUM, M485 / M1124 Series [DA57]	P-5a	A		- / 301.046	- / 19.813	- / -	- / 11.718	- / -	- / 11.718
P-5	E27001 / PROJ, 155mm ARTY Smoke, M116 Series [D506]		A		- / 5.000	- / -	- / 2.978	- / -	- / -	- / -
P-5	E27603 / PROJ, 155mm ARTY HE IM Training, M1122	P-5a	A		- / 220.904	- / 5.031	- / 114.427	- / -	- / -	- / -
P-5	E66501 / PROJ, 155mm ARTY HE RAP, XM1113 [DZ12]	P-5a, P-21	B		- / -	- / -	- / 20.000	- / 26.972	- / -	- / 26.972
P-5	E66800 / PROJ, 155mm ARTY HE, M795 [DA54]	P-5a, P-21	A		- / 563.172	- / 228.998	- / 29.538	- / 145.569	- / -	- / 145.569
P-5	E67800 / PROJ, 155mm ARTY WP Smoke, M825 / M825A1 [D528]	P-5a, P-21	A		- / 236.214	- / 8.807	- / -	- / 27.088	- / -	- / 27.088
P-5	E67802 / PROJ, 155mm ARTY HE-BB, XM1128 [DA70]	P-5a	B		- / -	- / -	- / 14.994	- / -	- / -	- / -
P-5	E68510 / PROJ, ARTY, 155MM BONUS, MK2	P-5a, P-21	A		- / 39.949	- / 33.000	- / 74.100	- / 73.824	- / -	- / 73.824
P-40	Total Gross/Weapon System Cost				- / 1,376.648	- / 305.509	- / 256.037	- / 293.692	- / -	- / 293.692

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base dollars in the amount of \$293.692 million supports procurement of 210,563 rounds.

(E67800) PROJ, ARTY, 155MM WP SMOKE M825
This item is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$27.088 million supports the procurement of 12,120 rounds.
TYPE CLASSIFICATION DATE: 1982

(E26900) PROJ, ARTY, 155MM VL ILLUM, M485 / M1124
This item is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$11.718 million supports the procurement of 7,137 rounds.
TYPE CLASSIFICATION DATE: 1970

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition		P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: 123		
<p>(E66800) PROJ, ARTY, 155MM HE, M795 This is a war reserve item used in combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$145.569 million supports the procurement of 183,085 rounds. TYPE CLASSIFICATION DATE: 1982</p> <p>(E27603) PROJ, ARTY, 155MM HE IM TRAINING M1122 This is a training unique item not used in combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: 2010</p> <p>(E66501) PROJ, ARTY, 155MM HE RAP XM1113 This is a war reserve item used in combat. FY 2021 request builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Total Base Procurement dollars in the amount of \$26.972 million supports the procurement of 2,197 projectiles to support the Long Range Precision Fires, Cross Functional Team (LRPF CFT) directive to deliver an operational capability for both fielded 39 caliber Artillery Weapon Systems and future 58 caliber Artillery Systems. TYPE CLASSIFICATION: Planned FY22</p> <p>(E27001) PROJ, ARTY, 155MM HC SMOKE M116 Series This items is a training standard item used in training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION: 1978</p> <p>(E68510) PROJ, ARTY, 155MM BONUS, MK2 This is a war reserve item used in combat. FY 2021 request builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$73.824 million supports the procurement of 1,105 Swedish Bonus projectiles.</p> <p>(E67802) PROJ, ARTY, 155MM, HE W/ BASEBLED XM1128 This is a war reserve item used in combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: Planned FY22</p> <p>(E21618) PROJ, ARTY, 155mm Extended Range Spotting, M1121 This is a training standard item used in training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Procurement dollars in the amount of \$8.521 million supports the procurement of 4,919 rounds. TYPE CLASSIFICATION DATE: 2017</p>		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types	Item Number / Title [DODIC]: E21618 / PROJ, ARTY, 155mm Extended Range Spotting, M1121 [DA66]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	10.363	9.860	-	8.521	-	8.521
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	10.363	9.860	-	8.521	-	8.521
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	10.363	9.860	-	8.521	-	8.521

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	-	472.00	5,000	2.360	-	-	-	540.01	4,919	2.656	-	-	-	540.01	4,919	2.656
MELTABLE FUZE PLUG ^(†)	-	-	-	10.20	5,100	0.052	-	-	-	10.61	5,017	0.053	-	-	-	10.61	5,017	0.053
CANNISTER METAL PART SET ^(†)	-	-	-	588.01	5,100	2.999	-	-	-	611.77	5,017	3.069	-	-	-	611.77	5,017	3.069
MODIFIED SUPPLEMENTAL CHARGE, PBXN9 ^(†)	-	-	-	49.99	5,100	0.255	-	-	-	52.00	5,017	0.261	-	-	-	52.00	5,017	0.261
WOODEN PALLET, IMX ^(†)	-	-	-	135.59	650	0.088	-	-	-	141.06	639	0.090	-	-	-	141.06	639	0.090
MODIFIED PROJECTILE BODY ^(†)	-	-	-	236.48	5,100	1.206	-	-	-	246.04	5,017	1.234	-	-	-	246.04	5,017	1.234
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	6.960	-	-	-	-	-	7.364	-	-	-	-	-	7.364
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	6.960	-	-	-	-	-	7.364	-	-	-	-	-	7.364
Support Cost																		
No Support Cost Element Selected for CE#1	-	-	-	-	-	0.106	-	-	-	-	-	-	-	-	-	-	-	-
No Support Cost Element Selected for CE#2	-	-	-	-	-	0.568	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types	Item Number / Title [DODIC]: E21618 / PROJ, ARTY, 155mm Extended Range Spotting, M1121 [DA66]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support Cost</i>	-	-	-	-	-	0.674	-	-	-	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.444	-	-	-	-	-	0.050	-	-	-	-	-	0.050
First Article Test	-	-	-	-	-	0.351	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.795	-	-	-	-	-	0.050	-	-	-	-	-	0.050
Support - Production Engineering Cost																		
Production Engineering	-	-	10.363	-	-	1.431	-	-	-	-	-	1.107	-	-	-	-	-	1.107
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	10.363	-	-	1.431	-	-	-	-	-	1.107	-	-	-	-	-	1.107
Gross/Weapon System Cost	-	-	10.363	-	-	9.860	-	-	-	-	-	8.521	-	-	-	-	-	8.521

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types				Item Number / Title [DODIC]: E21618 / PROJ, ARTY, 155mm Extended Range Spotting, M1121 [DA66]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2019	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jan 2019	Jan 2022	5,000	472.00	Y		
LOAD, ASSEMBLE, PACK (LAP)		2021	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Feb 2021	Feb 2024	4,919	540.01	Y		
MELTABLE FUZE PLUG		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Jun 2020	Jan 2022	5,100	10.20	Y		
MELTABLE FUZE PLUG		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2022	5,017	10.61	Y		
CANNISTER METAL PART SET		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	5,100	588.01	Y		
CANNISTER METAL PART SET		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2022	5,017	611.77	Y		
MODIFIED SUPPLEMENTAL CHARGE, PBXN9		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	5,100	49.99	Y		
MODIFIED SUPPLEMENTAL CHARGE, PBXN9		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2022	5,017	52.00	Y		
WOODEN PALLET, IMX		2019	KNOX CNTY ASSOC REMARKABLE / VINCENNES, IN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2019	Feb 2020	650	135.59	Y		
WOODEN PALLET, IMX		2021	KNOX CNTY ASSOC REMARKABLE / VINCENNES, IN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	639	141.06	Y		
MODIFIED PROJECTILE BODY		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Jul 2020	5,100	236.48	Y		
MODIFIED PROJECTILE BODY		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2022	5,017	246.04	Y		

Remarks:
Melttable Lift Plug: IDIQ contract awarded (FY19) to multiple contractors . Requirements competed among the following contractors: RTI Technologies, Columbia, CT & Polymer Technologies Inc., Clifton, NJ.

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Exhibit P-5, Cost Analysis: PB 2021 Army						Date: February 2020		
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types			Item Number / Title [DODIC]: E26900 / PROJ, 155mm ARTY VL ILLUM, M485 / M1124 Series [DA57]		
ID Code (A=Service Ready, B=Not Service Ready) : A						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)			301.046	19.813	-	11.718	-	11.718
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			301.046	19.813	-	11.718	-	11.718
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			301.046	19.813	-	11.718	-	11.718
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>								
Initial Spares (\$ in Millions)			-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	334.60	7,864	2.631	314.69	14,073	4.429	-	-	-	426.08	7,137	3.041	-	-	-	426.08	7,137	3.041
DELAY ELEMENT, 155MM ILLUM ^(†)	32.94	8,021	0.264	81.33	14,354	1.167	-	-	-	85.18	7,279	0.620	-	-	-	85.18	7,279	0.620
METAL PARTS SETS ^(†)	301.47	8,021	2.418	287.01	14,073	4.039	-	-	-	308.48	7,279	2.245	-	-	-	308.48	7,279	2.245
VL ILLUM CANNISTER ^(†)	312.60	8,021	2.507	358.76	14,354	5.150	-	-	-	373.25	7,279	2.717	-	-	-	373.25	7,279	2.717
CANISTER MPTS ASSY, 155MM ILLUM ^(†)	53.82	8,021	0.432	68.27	14,354	0.980	-	-	-	63.36	7,279	0.461	-	-	-	63.36	7,279	0.461
CANISTER BASE ASSY, 155MM ILLUM ^(†)	17.74	8,021	0.142	25.92	14,354	0.372	-	-	-	25.93	7,279	0.189	-	-	-	25.93	7,279	0.189
M10 EXPULSION CHARGE ASSEMBLY ^(†)	16.28	8,021	0.131	22.09	14,354	0.317	-	-	-	18.16	7,279	0.132	-	-	-	18.16	7,279	0.132
PARACHUTE MAIN, 155MM ILLUM ^(†)	37.80	8,021	0.303	39.64	14,354	0.569	-	-	-	41.32	7,279	0.301	-	-	-	41.32	7,279	0.301

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37						P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types						Item Number / Title [DODIC]: E26900 / PROJ, 155mm ARTY VL ILLUM, M485 / M1124 Series [DA57]						
ID Code (A=Service Ready, B=Not Service Ready) : A											MDAP/MAIS Code:							

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

Cost Elements	Prior Years			FY 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)
PARACHUTE MAIN SUPPORTS, 155MM ILLUM ^(†)	5.05	32,085	0.162	5.20	57,418	0.299	-	-	-	5.46	29,118	0.159	-	-	-	5.46	29,118	0.159
PARACHUTE DROGUE ASSEMBLY, 155MM ILLUM ^(†)	16.90	8,021	0.136	18.10	14,354	0.260	-	-	-	18.83	7,279	0.137	-	-	-	18.83	7,279	0.137
WOODEN PALLET, IMX ^(†)	95.58	1,022	0.098	121.14	1,829	0.222	-	-	-	141.06	927	0.131	-	-	-	141.06	927	0.131
DOWNLOAD, CLEAN AND INSPECT ^(†)	81.22	8,257	0.671	71.33	14,777	1.054	-	-	-	74.21	7,493	0.556	-	-	-	74.21	7,493	0.556
<i>Subtotal: Recurring Cost</i>	-	-	9.895	-	-	18.857	-	-	-	-	-	10.689	-	-	-	-	-	10.689
<i>Subtotal: Hardware Cost</i>	-	-	9.895	-	-	18.857	-	-	-	-	-	10.689	-	-	-	-	-	10.689
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.058	-	-	0.100	-	-	-	-	-	0.090	-	-	-	-	-	0.090
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.058	-	-	0.100	-	-	-	-	-	0.090	-	-	-	-	-	0.090
Support - Production Engineering Cost																		
Production Engineering	-	-	291.093	-	-	0.855	-	-	-	-	-	0.938	-	-	-	-	-	0.938
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	291.093	-	-	0.855	-	-	-	-	-	0.938	-	-	-	-	-	0.938
Gross/Weapon System Cost	-	-	301.046	-	-	19.813	-	-	-	-	-	11.718	-	-	-	-	-	11.718

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types					Item Number / Title [DODIC]: E26900 / PROJ, 155mm ARTY VL ILLUM, M485 / M1124 Series [DA57]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2019	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jan 2019	Jan 2021	14,073	314.69	Y		
LOAD, ASSEMBLE, PACK (LAP)		2021	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jan 2023	7,137	426.08	Y		
DELAY ELEMENT, 155MM ILLUM		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	14,354	81.33	Y		
DELAY ELEMENT, 155MM ILLUM		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2022	7,279	85.18	Y		
METAL PARTS SETS		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	14,073	287.01	Y		
METAL PARTS SETS		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2022	7,279	308.48	Y		
VL ILLUM CANNISTER		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	14,354	358.76	Y		
VL ILLUM CANNISTER		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2022	7,279	373.25	Y		
CANISTER MPTS ASSY, 155MM ILLUM		2019	WOODLAWN MANUFACTURING INC / MARSHALL, TX	C / IDIQ	PICATINNY ARSENAL, NJ	Jun 2019	Dec 2020	14,354	68.27	Y		
CANISTER MPTS ASSY, 155MM ILLUM		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Feb 2022	7,279	63.36	Y		
CANISTER BASE ASSY, 155MM ILLUM		2019	WOODLAWN MANUFACTURING INC / MARSHALL, TX	C / IDIQ	PICATINNY ARSENAL, NJ	Jun 2019	Dec 2020	14,354	25.92	Y		
CANISTER BASE ASSY, 155MM ILLUM		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2021	Feb 2022	7,279	25.93	Y		
M10 EXPULSION CHARGE ASSEMBLY		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	14,354	22.09	Y		
M10 EXPULSION CHARGE ASSEMBLY		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2022	7,279	18.16	Y		
PARACHUTE MAIN, 155MM ILLUM		2019	YOLAND CORPORATION / BROOKLYN, NY	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Nov 2018	May 2020	14,354	39.64	Y		
PARACHUTE MAIN, 155MM ILLUM		2021	YOLAND CORPORATION / BROOKLYN, NY	C / TBD	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	7,279	41.32	Y		
PARACHUTE MAIN SUPPORTS, 155MM ILLUM		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	57,418	5.20	Y		
PARACHUTE MAIN SUPPORTS, 155MM ILLUM		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2022	29,118	5.46	Y		
PARACHUTE DROGUE ASSEMBLY, 155MM ILLUM		2019	YOLAND CORPORATION / BROOKLYN, NY	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2019	Aug 2020	14,354	18.10	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types	Item Number / Title [DODIC]: E26900 / PROJ, 155mm ARTY VL ILLUM, M485 / M1124 Series [DA57]
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
PARACHUTE DROGUE ASSEMBLY, 155MM ILLUM		2021	YOLAND CORPORATION / BROOKLYN, NY	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2021	Aug 2022	7,279	18.83	Y		
WOODEN PALLET, IMX		2019	KNOX CNTY ASSOC REMARKABLE / VINCENNES, IN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2019	Feb 2020	1,829	121.14	Y		
WOODEN PALLET, IMX		2021	KNOX CNTY ASSOC REMARKABLE / VINCENNES, IN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	927	141.06	Y		
DOWNLOAD, CLEAN AND INSPECT		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2019	Jul 2020	14,777	71.33	Y		
DOWNLOAD, CLEAN AND INSPECT		2021	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jul 2022	7,493	74.21	Y		

Remarks:
 Canister Base / MPTS Assembly (FY19): IDIQ contract awarded to multiple contractors. Requirements competed among the following contractors: Wood lawn MFG INC., Marshall, TX and Bailey Tooling and MFG CO., Lancaster, TX.
 Parachute Main: IDIQ contract awarded (FY 2016) to Yolanda Corp INC., Brooklyn, NY. Parachute Drogue Assembly: IDIQ contract awarded (FY 2016) to Yolanda Corp INC., Brooklyn, NY.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types
		Item Number / Title [DODIC]: E27001 / PROJ, 155mm ARTY Smoke, M116 Series [D506]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	5.000	-	2.978	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	5.000	-	2.978	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	5.000	-	2.978	-	-	-

(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																		
COMPLETE ROUND	2,215.50	1,953	4.327	-	-	-	2,305.00	1,050	2.420	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	4.327	-	-	-	-	-	2.420	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	4.327	-	-	-	-	-	2.420	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.075	-	-	-	-	-	0.075	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.075	-	-	-	-	-	0.075	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.598	-	-	-	-	-	0.483	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.598	-	-	-	-	-	0.483	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	5.000	-	-	-	-	-	2.978	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020							
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37						P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types						Item Number / Title [DODIC]: E27603 / PROJ, 155mm ARTY HE IM Training, M1122								
ID Code (A=Service Ready, B=Not Service Ready) : A									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)				220.904		5.031			114.427			-			-			-		
Less PY Advance Procurement (\$ in Millions)				-		-			-			-			-			-		
Net Procurement (P-1) (\$ in Millions)				220.904		5.031			114.427			-			-			-		
Plus CY Advance Procurement (\$ in Millions)				-		-			-			-			-			-		
Total Obligation Authority (\$ in Millions)				220.904		5.031			114.427			-			-			-		
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																				
Initial Spares (\$ in Millions)				-		-			-			-			-			-		
Gross/Weapon System Unit Cost (\$ in 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																				
LOAD, ASSEMBLE, PACK (LAP) ^(†)	284.46	280,378	79.756	-	-	-	150.00	167,620	25.143	-	-	-	-	-	-	-	-	-		
WOODEN PALLET, IMX ^(†)	111.86	36,449	4.077	-	-	-	122.39	21,790	2.667	-	-	-	-	-	-	-	-	-		
MELTABLE FUZE PLUG ^(†)	8.74	285,985	2.500	-	-	-	10.40	170,972	1.778	-	-	-	-	-	-	-	-	-		
SUPPLEMENTAL CHARGE, PBXNg ^(†)	18.74	285,985	5.359	-	-	-	19.37	170,972	3.312	-	-	-	-	-	-	-	-	-		
EXPLOSIVE FILL IMX-101	17.08	911,169	15.563	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
DOWNLOAD, CLEAN AND INSPECT	69.33	140,309	9.728	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
METAL PARTS - M1122A1 ^(†)	-	-	-	-	-	-	338.13	170,972	57.811	-	-	-	-	-	-	-	-	-		
EXPLOSIVE FILL IMX-104 ^(†)	-	-	-	-	-	-	22.78	670,480	15.274	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Recurring Cost</i>	-	-	<i>116.983</i>	-	-	-	-	-	<i>105.984</i>	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Hardware Cost</i>	-	-	<i>116.983</i>	-	-	-	-	-	<i>105.984</i>	-	-	-	-	-	-	-	-	-		
Support - Acceptance Testing Cost																				
Acceptance Test	-	-	1.320	-	-	-	-	-	0.450	-	-	-	-	-	-	-	-	-		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types	Item Number / Title [DODIC]: E27603 / PROJ, 155mm ARTY HE IM Training, M1122
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	1.320	-	-	-	-	-	0.450	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	102.601	-	-	5.031	-	-	7.993	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	102.601	-	-	5.031	-	-	7.993	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	220.904	-	-	5.031	-	-	114.427	-	-	-	-	-	-	-	-	-

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types				Item Number / Title [DODIC]: E27603 / PROJ, 155mm ARTY HE IM Training, M1122					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	May 2020	Sep 2022	167,620	150.00	Y		
WOODEN PALLET, IMX		2020	KNOX CNTY ASSOC REMARKABLE / VINCENNES, IN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	21,790	122.39	Y		
MELTABLE FUZE PLUG		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	170,972	10.40	Y		
SUPPLEMENTAL CHARGE, PBXN9		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	170,972	19.37	Y		
METAL PARTS - M1122A1		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	170,972	338.13	Y		
EXPLOSIVE FILL IMX-104		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2022	670,480	22.78	Y		

Remarks:
 Supplemental Charge, PBXN9 Is and IDIQ contract awarded to multiple contractors. Requirements will be competed among the following contractors: DZI Lonestar LLC., Texarkana, TX and Chemring Ordnance, INC., Perry FL.; Meltable Lift Plug: IDIQ contract awarded (FY19) to multiple contractors. Requirements competed among the following contractors: RTI Technologies, Columbia, CT & Polymer Technologies Inc., Clifton, NJ; Explosive Fill IMX101 and IMX104 is a requirements contract (IDIQ) awarded to Holston Army Ammunition Plant (HSAAP)

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types
		Item Number / Title [DODIC]: E66501 / PROJ, 155mm ARTY HE RAP, XM1113 [DZ12]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	-	-	20.000	26.972	-	26.972
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	-	-	20.000	26.972	-	26.972
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	-	-	20.000	26.972	-	26.972

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND ^(†)	-	-	-	-	-	-	15,000.00	970	14.550	9,129.00	2,197	20.056	-	-	-	9,129.00	2,197	20.056
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	14.550	-	-	20.056	-	-	-	-	-	20.056
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	14.550	-	-	20.056	-	-	-	-	-	20.056
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.750	-	-	0.200	-	-	-	-	-	0.200
First Article Test	-	-	-	-	-	-	-	-	0.700	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	1.450	-	-	0.200	-	-	-	-	-	0.200
Support - New Equipment Training (NET) Cost																		
Equipment	-	-	-	-	-	-	-	-	-	-	-	0.400	-	-	-	-	-	0.400
<i>Subtotal: Support - New Equipment Training (NET) Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.400	-	-	-	-	-	0.400
Support - Non-Recurring Support Cost																		
Facilitization	-	-	-	-	-	-	-	-	1.900	-	-	3.200	-	-	-	-	-	3.200
<i>Subtotal: Support - Non-Recurring Support Cost</i>	-	-	-	-	-	-	-	-	1.900	-	-	3.200	-	-	-	-	-	3.200
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	2.100	-	-	3.116	-	-	-	-	-	3.116

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types	Item Number / Title [DODIC]: E66501 / PROJ, 155mm ARTY HE RAP, XM1113 [DZ12]
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	2.100	-	-	3.116	-	-	-	-	-	3.116
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	20.000	-	-	26.972	-	-	-	-	-	26.972

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types					Item Number / Title [DODIC]: E66501 / PROJ, 155mm ARTY HE RAP, XM1113 [DZ12]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2020	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	SS / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Nov 2021	970	15,000.00	Y	Jan 2020	
COMPLETE ROUND ^(†)		2021	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	May 2021	May 2024	2,197	9,129.00	N		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types										Item Number / Title [DODIC]: E66501 / PROJ, 155mm ARTY HE RAP, XM1113 [DZ12]									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2020														Fiscal Year 2021														BALANCE	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020														Calendar Year 2021														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

COMPLETE ROUND																																		
1	2020	ARMY		970	0	970																												970
2	2021	ARMY		2,197	0	2,197																												2,197

							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types										Item Number / Title [DODIC]: E66501 / PROJ, 155mm ARTY HE RAP, XM1113 [DZ12]									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2022															Fiscal Year 2023															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022															Calendar Year 2023															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
COMPLETE ROUND																																					
	1	2020	ARMY	970	0	970	-	500	470																										0		
	2	2021	ARMY	2,197	0	2,197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,197			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types										Item Number / Title [DODIC]: E66501 / PROJ, 155mm ARTY HE RAP, XM1113 [DZ12]									

Cost Elements (Units in Each)						Fiscal Year 2024										Fiscal Year 2025										B A L A N C E				
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	Calendar Year 2024										Calendar Year 2025													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R		M A Y	J U N	J U L	A U G
COMPLETE ROUND																														
	1	2020	ARMY	970	970	0																							0	
	2	2021	ARMY	2,197	0	2,197	-	-	-	-	-	-	-	500	500	500	500	197												0
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types
		Item Number / Title [DODIC]: E66501 / PROJ, 155mm ARTY HE RAP, XM1113 [DZ12]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	GEN DYNAMICS ORD & TAC SYS - - LE GARDEUR, CANADA	100	500	1,000	6	6	20	26	6	6	20	26
2	TO BE SELECTED - TBS01	100	500	1,000	6	6	36	42	6	6	36	42

"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-5, Cost Analysis: PB 2021 Army						Date: February 2020		
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types			Item Number / Title [DODIC]: E66800 / PROJ, 155mm ARTY HE, M795 [DA54]		
ID Code (A=Service Ready, B=Not Service Ready) : A						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)			563.172	228.998	29.538	145.569	-	145.569
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			563.172	228.998	29.538	145.569	-	145.569
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			563.172	228.998	29.538	145.569	-	145.569
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>								
Initial Spares (\$ in Millions)			-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	233.73	226,795	53.009	285.97	217,371	62.162	235.73	21,159	4.988	315.26	183,085	57.719	-	-	-	315.26	183,085	57.719
155MM METAL BODY PARTS ^(†)	-	-	-	-	-	-	-	-	-	403.74	186,746	75.397	-	-	-	403.74	186,746	75.397
MELTABLE FUZE PLUG ^(†)	8.49	76,292	0.648	10.20	131,457	1.341	10.40	21,582	0.224	-	-	-	-	-	-	-	-	-
SUPPLEMENTARY CHARGE PROJECTILE ^(†)	-	-	-	-	-	-	-	-	-	11.98	186,746	2.237	-	-	-	11.98	186,746	2.237
EXPLOSIVE FILL IMX-104 ^(†)	22.45	90,318	2.028	20.23	180,044	3.642	22.78	21,159	0.482	-	-	-	-	-	-	-	-	-
SUPPLEMENTAL CHARGE, PBXNg ^(†)	16.08	231,331	3.720	14.71	221,719	3.261	19.37	21,582	0.418	-	-	-	-	-	-	-	-	-
WOODEN PALLETS ^(†)	-	-	-	135.59	8,713	1.181	122.39	2,751	0.337	124.88	23,801	2.972	-	-	-	124.88	23,801	2.972
EXPLOSIVE FILL IMX-101 ^(†)	15.10	2,468,235	37.271	14.78	4,253,007	62.859	16.48	698,247	11.507	-	-	-	-	-	-	-	-	-
PROJECTILE, 155MM METAL PARTS FOR M795 ^(†)	-	-	-	402.21	221,719	89.178	437.85	21,582	9.450	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	<i>-</i>	<i>-</i>	<i>96.674</i>	<i>-</i>	<i>-</i>	<i>223.625</i>	<i>-</i>	<i>-</i>	<i>27.406</i>	<i>-</i>	<i>-</i>	<i>138.326</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>138.326</i>

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types	Item Number / Title [DODIC]: E66800 / PROJ, 155mm ARTY HE, M795 [DA54]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Hardware Cost</i>	-	-	96.674	-	-	223.625	-	-	27.406	-	-	138.326	-	-	-	-	-	138.326
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.610	-	-	0.167	-	-	0.112	-	-	0.689	-	-	-	-	-	0.689
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.610	-	-	0.167	-	-	0.112	-	-	0.689	-	-	-	-	-	0.689
Support - Government Furnished Materials Cost																		
Government Furnished Materials	-	-	-	-	-	-1.091	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Government Furnished Materials Cost</i>	-	-	-	-	-	-1.091	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	465.887	-	-	6.297	-	-	2.020	-	-	6.554	-	-	-	-	-	6.554
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	465.887	-	-	6.297	-	-	2.020	-	-	6.554	-	-	-	-	-	6.554
Gross/Weapon System Cost	-	-	563.172	-	-	228.998	-	-	29.538	-	-	145.569	-	-	-	-	-	145.569

Remarks:

M795 Load, Assemble, Pack (LAP), unit cost discrepancy is because of the combination of TNT LAP and IMX101 LAP. FY 2019 and FY 2020 were a combination of these programs. M795 TNT LAP price includes cost of TNT and the M795 IMX101 DA54 LAP is LAP only and IMX101/IMX104 were priced separately in the components. FY 2021 LAP price is D529 only and LAP price includes LAP cost plus the cost of the TNT explosive.

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army										Date: February 2020		
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37				P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types				Item Number / Title [DODIC]: E66800 / PROJ, 155mm ARTY HE, M795 [DA54]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	Option / FFP	ROCK ISLAND ARSENAL, IL	Aug 2019	Aug 2022	217,371	285.97	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2020	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	Option / FFP	ROCK ISLAND ARSENAL, IL	May 2020	May 2023	21,159	235.73	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2021	May 2024	183,085	315.26	Y		
155MM METAL BODY PARTS		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2023	186,746	403.74	Y		
MELTABLE FUZE PLUG		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Jun 2020	Dec 2021	131,457	10.20	Y		
MELTABLE FUZE PLUG		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Jun 2020	Dec 2021	21,582	10.40	Y		
SUPPLEMENTARY CHARGE PROJECTILE		2021	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2022	186,746	11.98	Y		
EXPLOSIVE FILL IMX-104		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2019	Feb 2022	180,044	20.23	Y		
EXPLOSIVE FILL IMX-104		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2022	21,159	22.78	Y		
SUPPLEMENTAL CHARGE, PBXN9		2019	SPECTRA TECHNOLOGIES LLC / CAMDEN, AR	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jul 2019	Jan 2021	221,719	14.71	Y		
SUPPLEMENTAL CHARGE, PBXN9		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	21,582	19.37	Y		
WOODEN PALLETS		2019	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	8,713	135.59	Y		
WOODEN PALLETS		2020	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Sep 2021	2,751	122.39	Y		
WOODEN PALLETS		2021	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2021	Sep 2022	23,801	124.88	Y		
EXPLOSIVE FILL IMX-101		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2019	Feb 2022	4,253,007	14.78	Y		
EXPLOSIVE FILL IMX-101		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Jun 2022	698,247	16.48	Y		
PROJECTILE, 155MM METAL PARTS FOR M795		2019	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	221,719	402.21	Y		
PROJECTILE, 155MM METAL PARTS FOR M795		2020	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Sep 2021	21,582	437.85	Y		

^(†) indicates the presence of a P-21

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types	Item Number / Title [DODIC]: E66800 / PROJ, 155mm ARTY HE, M795 [DA54]

Remarks:
 Load, Assemble & Pack (LAP) requirements contract at Iowa Army Ammunition Plant (IAAP) FY 2019 through FY 2023 , Explosive Fill, IMX 101 and 104 are delivery orders with requirements contract at Holston Army Ammunition Plant (HSAAP) FY 2019 to FY 2023. Melttable Fuze Plug is C/IDIQ awarded (FY 2019) to multiple contractors. Requirements competed among the following contractors: RTI Technologies, Columbia, CT and Polymer Technologies Incorporated, Clifton, NJ. Supplemental Charge PBXN9 competitive IDIQ contract to multiple contractors, Accurate (AES) TN, and Spectra AR, FY 2019 through FY 2023.

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020									
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types										Item Number / Title [DODIC]: E66800 / PROJ, 155mm ARTY HE, M795 [DA54]				

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2021															Fiscal Year 2022										B A L A N C E		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCE PT PRI OR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021															Calendar Year 2022										
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P	
LOAD, ASSEMBLE, PACK (LAP)																																
Prior Years Deliveries: 226795																																
1	2019	ARMY		217.371	.000	217.371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.000	12.000	193.371
1	2020	ARMY		21.159	.000	21.159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.159
1	2021	ARMY		183.085	.000	183.085																									183.085	

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types										Item Number / Title [DODIC]: E66800 / PROJ, 155mm ARTY HE, M795 [DA54]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2023															Fiscal Year 2024															BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023															Calendar Year 2024															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

LOAD, ASSEMBLE, PACK (LAP)

Prior Years Deliveries: 226795																																		
1	2019	ARMY	217.371	24.000	193.371	12.000	12.000	12.000	12.000	12.008	12.000	17.440	14.901																					89.022
1	2020	ARMY	21.159	.000	21.159	-	-	-	-	-	-	-	10.000	10.000	1.159																			.000
1	2021	ARMY	183.085	.000	183.085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103.085
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types										Item Number / Title [DODIC]: E66800 / PROJ, 155mm ARTY HE, M795 [DA54]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2025												Fiscal Year 2026												B A L A N C E		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 4	BAL D U E A S O F 1 O C T	Calendar Year 2025												Calendar Year 2026												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L		A U G	S E P

LOAD, ASSEMBLE, PACK (LAP)

Prior Years Deliveries: 226795																													
1	2019	ARMY	217.371	128.349	89.022																							89.022	
1	2020	ARMY	21.159	21.159	.000																							.000	
1	2021	ARMY	183.085	80.000	103.085	16.000	16.000	16.000	16.000	16.000	16.000	7.085																.000	
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

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Exhibit P-21, Production Schedule: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37				P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types				Item Number / Title [DODIC]: E66800 / PROJ, 155mm ARTY HE, M795 [DA54]				
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	AMERICAN ORDNANCE LLC (IAAP) - MIDDLETOWN, IA	8,100	16,000	20,000	11	11	24	35	6	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types
		Item Number / Title [DODIC]: E67800 / PROJ, 155mm ARTY WP Smoke, M825 / M825A1 [D528]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	236.214	8.807	-	27.088	-	27.088
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	236.214	8.807	-	27.088	-	27.088
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	236.214	8.807	-	27.088	-	27.088

(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																		
COMPLETE ROUND ^(†)	-	-	-	-	-	-	-	-	-	2,016.29	12,120	24.437	-	-	-	2,016.29	12,120	24.437
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	24.437	-	-	-	-	-	24.437
Subtotal: Hardware Cost	-	-	-	-	-	-	-	-	-	-	-	24.437	-	-	-	-	-	24.437
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	-	-	-	0.210	-	-	-	-	-	0.210
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	-	-	-	0.210	-	-	-	-	-	0.210
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	2.440	-	-	-	-	-	2.440
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	-	-	-	-	-	-	2.440	-	-	-	-	-	2.440
Support - Recapitalization Cost																		
Recapitalization	-	-	236.214	-	-	8.807	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Recapitalization Cost	-	-	236.214	-	-	8.807	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	236.214	-	-	8.807	-	-	-	-	-	27.088	-	-	-	-	-	27.088

^(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types				Item Number / Title [DODIC]: E67800 / PROJ, 155mm ARTY WP Smoke, M825 / M825A1 [D528]					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2021	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jan 2021	Jun 2023	12,120	2,016.29	Y		

^(†) indicates the presence of a P-21

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2021 Army																							Date: February 2020							
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types										Item Number / Title [DODIC]: E67800 / PROJ, 155mm ARTY WP Smoke, M825 / M825A1 [D528]										
Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2021										Fiscal Year 2022										B A L A N C E				
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021										Calendar Year 2022													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R		M A Y	J U N	J U L	A U G
COMPLETE ROUND																														
	1	2021	ARMY	12.120	.000	12.120				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.120	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2021 Army																	Date: February 2020										
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types										Item Number / Title [DODIC]: E67800 / PROJ, 155mm ARTY WP Smoke, M825 / M825A1 [D528]							

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2023												Fiscal Year 2024												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
1		2021	ARMY	12.120	.000	12.120	-	-	-	-	-	-	-	-	9.000	3.120													.000		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types
		Item Number / Title [DODIC]: E67800 / PROJ, 155mm ARTY WP Smoke, M825 / M825A1 [D528]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	PINE BLUFF ARSENAL - PINE BLUFF, AR	9,000	12,000	15,000	6	4	30	34	6	4	30	34

"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-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37						P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types						Item Number / Title [DODIC]: E67802 / PROJ, 155mm ARTY HE-BB, XM1128 [DA70]						
ID Code (A=Service Ready, B=Not Service Ready) : B									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)				-		-			14.994			-			-		-	
Less PY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Net Procurement (P-1) (\$ in Millions)				-		-			14.994			-			-		-	
Plus CY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Total Obligation Authority (\$ in Millions)				-		-			14.994			-			-		-	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (\$ in Millions)				-		-			-			-			-		-	
Gross/Weapon System Unit Cost (\$ in 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	-	-	-	-	2,200.00	1,886	4.149	-	-	-	-	-	-	-	-	-
METAL PART, M1128 ^(†)	-	-	-	-	-	-	570.00	1,923	1.096	-	-	-	-	-	-	-	-	-
EXPLOSIVE FILL IMX-104 ^(†)	-	-	-	-	-	-	22.78	45,264	1.031	-	-	-	-	-	-	-	-	-
WOODEN PALLET, IMX ^(†)	-	-	-	-	-	-	122.39	56	0.007	-	-	-	-	-	-	-	-	-
MELTABLE FUZE PLUG ^(†)	-	-	-	-	-	-	10.40	1,923	0.020	-	-	-	-	-	-	-	-	-
SUPPLEMENTAL CHARGE, PBXN9 ^(†)	-	-	-	-	-	-	19.37	1,923	0.037	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	6.341	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	6.341	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.257	-	-	-	-	-	-	-	-	-
First Article Test	-	-	-	-	-	-	-	-	0.750	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	1.007	-	-	-	-	-	-	-	-	-
Support - Non-Recurring Support Cost																		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types	Item Number / Title [DODIC]: E67802 / PROJ, 155mm ARTY HE-BB, XM1128 [DA70]
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
Facilitization	-	-	-	-	-	-	-	-	3.000	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Non-Recurring Support Cost</i>	-	-	-	-	-	-	-	-	3.000	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Production Verification Test	-	-	-	-	-	-	-	-	3.600	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	-	-	-	3.600	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	1.047	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	1.047	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	14.994	-	-	-	-	-	-	-	-	-

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types					Item Number / Title [DODIC]: E67802 / PROJ, 155mm ARTY HE-BB, XM1128 [DA70]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2020	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	May 2020	May 2023	1,886	2,200.00	N		
METAL PART, M1128		2020	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	May 2020	Nov 2021	1,923	570.00	N		
EXPLOSIVE FILL IMX-104		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	May 2020	Nov 2022	45,264	22.78	Y		
WOODEN PALLET, IMX		2020	KNOX CNTY ASSOC REMARKABLE / VINCENNES, IN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	May 2020	May 2021	56	122.39	Y		
MELTABLE FUZE PLUG		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	May 2020	Nov 2021	1,923	10.40	Y		
SUPPLEMENTAL CHARGE, PBXN9		2020	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2020	Nov 2021	1,923	19.37	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types
		Item Number / Title [DODIC]: E68510 / PROJ, ARTY, 155MM BONUS, MK2

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	39.949	33.000	74.100	73.824	-	73.824
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	39.949	33.000	74.100	73.824	-	73.824
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	39.949	33.000	74.100	73.824	-	73.824

(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																		
COMPLETE ROUND ^(†)	64,396.00	528	34.001	56,656.00	556	31.501	56,656.00	1,266	71.726	57,789.12	1,105	63.857	-	-	-	57,789.12	1,105	63.857
Subtotal: Recurring Cost	-	-	34.001	-	-	31.501	-	-	71.726	-	-	63.857	-	-	-	-	-	63.857
Subtotal: Hardware Cost	-	-	34.001	-	-	31.501	-	-	71.726	-	-	63.857	-	-	-	-	-	63.857
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	2.382	-	-	0.060	-	-	0.286	-	-	0.167	-	-	-	-	-	0.167
Subtotal: Support - Acceptance Testing Cost	-	-	2.382	-	-	0.060	-	-	0.286	-	-	0.167	-	-	-	-	-	0.167
Support - Fielding Cost																		
Fielding	-	-	-	-	-	-	-	-	-	-	-	5.000	-	-	-	-	-	5.000
Subtotal: Support - Fielding Cost	-	-	-	-	-	-	-	-	-	-	-	5.000	-	-	-	-	-	5.000
Support - Production Engineering Cost																		
Production Engineering	-	-	3.566	-	-	1.439	-	-	2.088	-	-	4.800	-	-	-	-	-	4.800
Subtotal: Support - Production Engineering Cost	-	-	3.566	-	-	1.439	-	-	2.088	-	-	4.800	-	-	-	-	-	4.800
Gross/Weapon System Cost	-	-	39.949	-	-	33.000	-	-	74.100	-	-	73.824	-	-	-	-	-	73.824

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types				Item Number / Title [DODIC]: E68510 / PROJ, ARTY, 155MM BONUS, MK2				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	BAE SYSTEMS BOFORS AB / KARLSKOGA, SWEDEN	Option / FFP	PICATINNY ARSENAL, NJ	Dec 2019	Apr 2021	556	56,656.00	Y		
COMPLETE ROUND ^(†)		2020	BAE SYSTEMS BOFORS AB / KARLSKOGA, SWEDEN	Option / FFP	PICATINNY ARSENAL, NJ	Dec 2019	Apr 2021	1,266	56,656.00	Y		
COMPLETE ROUND ^(†)		2021	BAE SYSTEMS BOFORS AB / KARLSKOGA, SWEDEN	Option / FFP	PICATINNY ARSENAL, NJ	Jan 2021	Apr 2022	1,105	57,789.12	Y		

^(†) indicates the presence of a P-21

Remarks:

FY 2019 and FY 2020 Load Assemble and Pack have a tandem contract award in order to take advantage of a quantity price break.

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020									
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types										Item Number / Title [DODIC]: E68510 / PROJ, ARTY, 155MM BONUS, MK2				

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2020															Fiscal Year 2021										B A L A N C E							
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020															Calendar Year 2021															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P						
COMPLETE ROUND																																					
Prior Years Deliveries: 528																																					
1		2019	ARMY	556	0	556			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	160	160	156			0
1		2020	ARMY	1,266	0	1,266			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	160	160	160	160	160	160	462	
1		2021	ARMY	1,105	0	1,105																															1,105
1		2021	MC ^(*)	552	0	552																															552
1		2021	Total	1,657	0	1,657																															1,657
									O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types										Item Number / Title [DODIC]: E68510 / PROJ, ARTY, 155MM BONUS, MK2									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2022															Fiscal Year 2023												BALANCE		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022															Calendar Year 2023												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
COMPLETE ROUND																																		
Prior Years Deliveries: 528																																		
1		2019	ARMY	556	556	0																							0					
1		2020	ARMY	1,266	804	462	160	160	142																				0					
1		2021	ARMY	1,105	0	1,105	-	-	-	-	-	-	138	138	138	138	138	139	139	137	-	-	-	-					0					
1		2021	MC ^(*)	552	0	552	-	-	-	-	-	-	10	10	10	10	10	10	10	15	120	120	120	107					0					
1		2021	Total	1,657	0	1,657	-	-	-	-	-	-	148	148	148	148	148	149	149	152	120	120	120	107	-	-	-	-	0					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37				P-1 Line Item Number / Title: 3102E89500 / ARTILLERY PROJECTILE, 155MM, All Types				Item Number / Title [DODIC]: E68510 / PROJ, ARTY, 155MM BONUS, MK2				
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial			Reorder				
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	BAE SYSTEMS BOFORS AB - KARLSKOGA, SWEDEN	80	160	320	3	11	15	26	3	4	15	19

(‡) 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 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition	P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604814A
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Line Item MDAP/MAIS Code: 366

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 (<i>Units in Each</i>)	12,473	2,248	804	597	275	872	230	-	-	-	-	16,627
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,147.606	173.891	92.079	69.159	29.213	98.372	41.026	-	-	-	-	1,552.974
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,147.606	173.891	92.079	69.159	29.213	98.372	41.026	-	-	-	-	1,552.974
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,147.606	173.891	92.079	69.159	29.213	98.372	41.026	-	-	-	-	1,552.974

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

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	92,007.22	77,353.65	114,526.12	115,844.22	106,229.09	112,811.93	178,373.91	-	-	-	-	93,400.73

Description:

This budget line item includes the Excalibur family of munitions for use in the M777A2 Lightweight 155mm Howitzer (LW155), the M109A6 Paladin Howitzer, the M109A7 Paladin PIM Howitzer and the Swedish Archer Howitzer.

(E80100) Excalibur is a Precision Guided Extended Range 155mm Artillery projectile providing Brigade Combat Teams an organic precision fires capability. It provides improved fire support capability due to its increased range of 40.5 kilometers and demonstrated accuracy of less than 3 meters radial miss distances, which enables a first round effect on target reducing the number of rounds required while reducing collateral damage. Excalibur Shaped Trajectory configuration enables user defined angle of attack and angle of fall to maximize effect on target. Excalibur is compatible with the M777A2 Lightweight 155mm Howitzer (LW155), the M109A6 Paladin Howitzer, the M109A7 Paladin PIM Howitzer, and the Swedish Archer Howitzer. Excalibur provides a 35% range increase over current Rocket Assisted Projectiles with a less than 10 meter circular error probable requirement at all ranges. Excalibur is resistant to Global Positioning System (GPS) jamming. Excalibur's mature configuration provides significant growth potential to support the National Defense Strategy, the Army Long Range Precision Fires (LRPF) Cross Functional Team (CFT), Cannon Delivered Area Effects Munitions (C-DAEM) Increment 1 Hit to Kill solution, and M777 Long Range Cannon (LRC) initiatives. Current Excalibur 1b has achieved 65.3 kilometers in Extended Range Cannon Artillery (ERCA) demonstration test.

Excalibur is currently fielded and in use by units throughout Afghanistan and deployed globally to support other Military Contingency Operations. Excalibur is an International Cooperative Development program, teamed with the Kingdom of Sweden (KoS), which contributed resources towards the development in accordance with an established Project Agreement. Excalibur Increment 1a-1 was initially fielded to units in Iraq and Afghanistan in response to an urgent need request in support of Operation Iraqi Freedom (as of September 2010 re-named to Operation New Dawn) and Operation Enduring Freedom. Increment 1a-2 was fielded in early FY 2012 and greatly increases range from 25.2 kilometers to 40.5 kilometers. Excalibur Increment 1b provides further performance improvements while significantly lowering unit costs. Increment 1b completed a successful Initial Operational Test and Evaluation in February 2014 as well as a Full Rate Production Decision Review in June 2014. The Excalibur Increment 1b projectile was Type Classified and Full Material Released in June 2014.

This item is Code A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition **P-1 Line Item Number / Title:**
6600E80100 / Proj 155mm Extended Range M982

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604814A

Line Item MDAP/MAIS Code: 366

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	E80103 / PROJ, 155mm ARTY, Extended Range M982-U Excalibur [DA58]	P-5a, P-21	A		12,473 / 1,147.606	2,248 / 173.891	804 / 92.079	597 / 69.159	275 / 29.213	872 / 98.372
P-40	Total Gross/Weapon System Cost				12,473 / 1,147.606	2,248 / 173.891	804 / 92.079	597 / 69.159	275 / 29.213	872 / 98.372

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

This is a critical munition and war reserve item currently being used in combat. The FY 2021 request builds a war reserve inventory in accordance with Army's procurement goals.

FY 2021 Total Base procurement dollars in the amount of \$69.159 million supports the procurement of 597 Increment 1b projectiles.

FY 2021 Total Overseas Contingency Operations (OCO) dollars in the amount of \$29.213 million supports the procurement of 275 critical Army munition consumed in support of deployed units' ongoing military operations.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982	Item Number / Title [DODIC]: E80103 / PROJ, 155mm ARTY, Extended Range M982-U Excalibur [DA58]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (Units in Each)	12,473	2,248	804	597	275	872
Gross/Weapon System Cost (\$ in Millions)	1,147.606	173.891	92.079	69.159	29.213	98.372
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,147.606	173.891	92.079	69.159	29.213	98.372
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,147.606	173.891	92.079	69.159	29.213	98.372

(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)	92,007.22	77,353.65	114,526.12	115,844.22	106,229.09	112,811.93

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																		
COMPLETE ROUND ^(†)	85,484.03	12,648	1,081.202	70,676.32	2,248	158.880	99,121.00	804	79.693	105,974.62	597	63.267	105,974.62	275	29.143	105,974.62	872	92.410
CONTAINER, EXCALIBUR	2,147.98	12,648	27.168	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	1,108.370	-	-	158.880	-	-	79.693	-	-	63.267	-	-	29.143	-	-	92.410
Subtotal: Hardware Cost	-	-	1,108.370	-	-	158.880	-	-	79.693	-	-	63.267	-	-	29.143	-	-	92.410
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	2.931	-	-	0.900	-	-	0.453	-	-	0.300	-	-	-	-	-	0.300
Subtotal: Support - Acceptance Testing Cost	-	-	2.931	-	-	0.900	-	-	0.453	-	-	0.300	-	-	-	-	-	0.300
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	13.025	-	-	5.416	-	-	3.410	-	-	2.823	-	-	-	-	-	2.823
Subtotal: Support - Engineering Change Proposals Cost	-	-	13.025	-	-	5.416	-	-	3.410	-	-	2.823	-	-	-	-	-	2.823
Support - Production Engineering Cost																		
Production Engineering	-	-	20.105	-	-	8.113	-	-	7.999	-	-	2.077	-	-	0.070	-	-	2.147
Subtotal: Support - Production Engineering Cost	-	-	20.105	-	-	8.113	-	-	7.999	-	-	2.077	-	-	0.070	-	-	2.147

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982	Item Number / Title [DODIC]: E80103 / PROJ, 155mm ARTY, Extended Range M982-U Excalibur [DA58]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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 - Quality Assurance Cost																		
Quality Assurance	-	-	3.175	-	-	0.582	-	-	0.524	-	-	0.692	-	-	-	-	-	0.692
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	3.175	-	-	0.582	-	-	0.524	-	-	0.692	-	-	-	-	-	0.692
Gross/Weapon System Cost	92,007.22	12,473	1,147.606	77,353.65	2,248	173.891	114,526.12	804	92.079	115,844.22	597	69.159	106,229.09	275	29.213	112,811.93	872	98.372

Remarks:
 Excalibur lb prior year pricing benefited from contractor funded multiyear procurement strategy to minimize unit costs based on purchase quantities of 2000 - 2500 projectiles regardless of yearly government funding. FY 2019 and future year pricing based on traditional contract strategy of unit pricing depending on individual order quantity.
 (t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982				Item Number / Title [DODIC]: E80103 / PROJ, 155mm ARTY, Extended Range M982-U Excalibur [DA58]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	SS / FFP	PICATINNY ARSENAL, NJ	Apr 2019	Apr 2021	2,248	70,676.32	Y		
COMPLETE ROUND ^(†)		2020	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	Option / FFP	PICATINNY ARSENAL, NJ	Dec 2019	Jan 2022	804	99,121.00	Y		
COMPLETE ROUND ^(†)		2021	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	Option / FFP	PICATINNY ARSENAL, NJ	Dec 2020	Jan 2023	597	105,974.62	Y		
COMPLETE ROUND ^(†)	✓	2021	RAYTHEON MISSILE SYSTEMS / TUCSON, AZ	Option / FFP	P PICATINNY ARSENAL, NJ	Dec 2020	Jan 2023	275	105,974.62	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army						Date: February 2020								
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982						Item Number / Title [DODIC]: E80103 / PROJ, 155mm ARTY, Extended Range M982-U Excalibur [DA58]					

Cost Elements (Units in Each)					Fiscal Year 2019													Fiscal Year 2020													B A L A N C E		
O C C O	M F R #	F Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 1 8	B A L D U E A S O F 1 O C T	Calendar Year 2019													Calendar Year 2020													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
COMPLETE ROUND																																	
Prior Years Deliveries: 12648																																	
	1	2019	ARMY	2,248	0	2,248																						2,248					
	1	2020	ARMY	804	0	804													A	-	-	-	-	-	-	-	-	804					
	1	2021	ARMY	597	0	597																						597					
✓	2	2021	ARMY	275	0	275																						275					

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982
		Item Number / Title [DODIC]: E80103 / PROJ, 155mm ARTY, Extended Range M982-U Excalibur [DA58]

Cost Elements <i>(Units in Each)</i>				Fiscal Year 2021														Fiscal Year 2022														B A L A N C E			
O C C O	M F R #	F Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 2 0	B A L D U 	Calendar Year 2021														Calendar Year 2022														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
Prior Years Deliveries: 12648																																			
	1	2019	ARMY	2,248	0	2,248	-	-	-	-	-	-	-	104	195	195	195	195	195	195	195	195	195	195	195	195	195	194	0						
	1	2020	ARMY	804	0	804	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	6	90	90	90	90	90	90	248	
	1	2021	ARMY	597	0	597			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	597
✓	2	2021	ARMY	275	0	275			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982
		Item Number / Title [DODIC]: E80103 / PROJ, 155mm ARTY, Extended Range M982-U Excalibur [DA58]

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2023													Fiscal Year 2024													BALANCE			
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023													Calendar Year 2024														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
COMPLETE ROUND																																		
Prior Years Deliveries: 12648																																		
	1	2019	ARMY	2,248	2,248	0																												0
	1	2020	ARMY	804	556	248	90	90	68																									0
	1	2021	ARMY	597	0	597	-	-	-	74	74	74	75	75	75	75	75																	0
✓	2	2021	ARMY	275	0	275	-	-	-	35	35	35	34	34	34	34	34																	0
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982
		Item Number / Title [DODIC]: E80103 / PROJ, 155mm ARTY, Extended Range M982-U Excalibur [DA58]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	RAYTHEON MISSILE SYSTEMS CO - TUCSON, AZ	40	200	400	12	6	21	27	12	3	25	28
2	RAYTHEON MISSILE SYSTEMS - TUCSON, AZ	40	200	400	12	6	21	27	12	3	25	28

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

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

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition	P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	8,950	22,845	54,565	94,563	-	180,923
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,759.386	270.577	271.993	232.913	21.675	254.588	185.047	193.138	242.368	339.651	-	3,516.748
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,759.386	270.577	271.993	232.913	21.675	254.588	185.047	193.138	242.368	339.651	-	3,516.748
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,759.386	270.577	271.993	232.913	21.675	254.588	185.047	193.138	242.368	339.651	-	3,516.748

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

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	20,675.64	8,454.28	4,441.82	3,591.80	-	19,437.82

Description:

(E27501) Artillery Propellants, Fuzes and Primers, All Types.

(E63000) ARTY, 155MM PRIMER PERCUSSION M82 SERIES

The M82 Percussion Primer is intended for use with all United States 155mm cannon field artillery systems. The M82 Series Percussion Primer is used to initiate the burning of propellant charges and consists of a cylindrical brass case with an extraction flange which contains a base plunger, an ignition element which contains Primer #34 and a container loaded with 22 grains of black powder. This item is Code A, approved for service use.

(E99909) ARTY, FUZE MOFA M782 SERIES

The Multi-Option Fuze for Artillery (MOFA) is compatible with all bursting ammunition fired from all 105mm and 155mm cannon systems including M119, M109, and M777 series firing platforms and cannon assemblies. The MOFA provides proximity, precision time, delay and impact functions in a single fuze. The inductive fuze set feature optimizes MOFA for use with automated ammunition handling equipment. The MOFA combines proven subassemblies such as the safe and arm device with reserve batteries and a proximity sensor technology to affordably achieve enhanced performance, producibility and safety. This item is Code A, approved for service use.

(E27502) ARTY, 155MM PROP CHG, MACS M231 SERIES

The Modular Artillery Charge System (MACS), M231 "Low Zone is intended for use with all US 155mm cannon field artillery systems in use and development. The M231 is a "low-zone" increment designed to achieve ranges from 3.0 to 12 kilometers. Each MACS increment includes propellant, an ignition system, and a combustible case. Packaging permits long-term storage and helps protect the items from unplanned stimuli. This item is Code A, approved for service use

(E99250) ARTY, FUZE, PRECISION GUIDANCE KIT (PGK)

The Precision Guidance Kit (PGK) is a course correcting fuze that provides precision accuracy and efficiency for 155mm M795 and M549A1 High Explosive (HE) projectiles by eliminating a portion of the inherent errors associated with ballistic firing solutions which effectively reduces the number of projectiles required to execute fire missions. PGK utilizes a Global Positioning System (GPS) receiver and internal Guidance and Navigation Computer to accomplish its mission with point detonating and height of burst fuzing functions. PGK is compatible with the M777A2 Lightweight 155mm Howitzer (LW155), the M109A6 Paladin Howitzer, and the M109A7 Paladin PIM Howitzer. PGK supports the National Defense Strategy and future 155mm projectiles and M777 Long Range Cannon (LRC) initiatives.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition		P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>This item is Code A, approved for service use.</p> <p>(ER8021) ARTY, 155MM PROP CHG, MACS M232 SERIES The Modular Artillery Charge System (MACS) M232 "High Zone" is intended for use with all United States 155mm cannon field artillery systems. The M232 "High Zone" increment is designed to achieve ranges from 10 to 40 kilometers. Each MACS increment includes propellant, an ignition system, and a combustible case. Performance enhancing additives are included in the M232 "High Zone" increment. Packaging permits long-term storage and helps protect the items from unplanned stimuli. This item is Code A, approved for service use.</p> <p>(E62208) ARTY, FUZE PD M739A1 The M739A1 Point Detonating (PD) and Delay Fuze is the Army's preferred, primary fuze for 105mm and 155mm projectiles to address point detonating/delay artillery functions. The M739A1 fuze contains an Impact Delay Module (IDM) assembly. The IDM provides fuze initiation delay based upon the completion of mechanical actions caused by projectile deceleration and will function immediately after passing through the target. This item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition

P-1 Line Item Number / Title:
8750E27501 / Artillery Propellants, Fuzes and Primers, All

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E27502 / PROP CHG, 155mm ARTY MACS, M231 Series [DA12]	P-5a	A		- / 314.884	- / -	- / 7.560	- / -	- / -	- / -
P-5	E62208 / FUZE, 155mm ARTY Point Detonating (PD), M739 Series [N340]	P-5a, P-21	A		- / 269.182	- / 29.975	- / 25.066	- / 19.170	- / -	- / 19.170
P-5	E63000 / PRIMER, 155mm ARTY Percussion, M82 Series [N523]		A		- / 42.690	- / 2.447	- / 2.494	- / -	- / -	- / -
P-5	E99250 / FUZE, 155mm ARTY Precision Guidance Kit (PGK) [NA29]	P-5a, P-21	A		- / 499.378	- / 217.933	- / 160.596	- / 139.036	- / 21.675	- / 160.711
P-5	E99909 / Multi-Option Fuze, Artillery M782 [NA09]	P-5a	A		- / 10.000	- / -	- / -	- / 7.576	- / -	- / 7.576
P-5	ER8021 / PROP CHG, 155mm ARTY MACS, M232 Series [DA67]	P-5a, P-21	A		- / 623.252	- / 20.222	- / 76.277	- / 67.131	- / -	- / 67.131
P-40	Total Gross/Weapon System Cost				- / 1,759.386	- / 270.577	- / 271.993	- / 232.913	- / 21.675	- / 254.588

*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 budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base dollars in the amount of \$232.913 million supports the procurement of 225,739 fuzes and 317,224 propelling charges.

FY 2021 Total Overseas Contingency Operations (OCO) dollars in the amount of \$21.675 million supports the procurement of 2,974 Precision Guidance Kit (PGK) Fuzes critical Army munitions consumed in support of deployed units' ongoing military operations.

(E63000) ARTY, 155MM PRIMER PERCUSSION M82 Series

This is a training standard item used in training and combat. There is no FY 2021 funding request.

TYPE CLASSIFICATION DATE: MAY 1961

(E99909) ARTY, FUZE MOFA M782 SERIES

This is a training standard item used in training and combat. FY 2021 request supports annual training and a builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$7.576 million supports production of 988 fuzes. This is a new start.

TYPE CLASSIFICATION: 1999

(E27502) ARTY, 155MM PROP CHG, MACS M231 Series

This is a training standard item used in training and combat. There is no FY 2021 funding request.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition		P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
TYPE CLASSIFICATION DATE: 1999		
<p>(E99250) ARTY, FUZE, PRECISION GUIDANCE KIT (PGK) This is a critical munition and war reserve item used in both training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Total Base dollars in the amount of \$139.036 million supports the procurement of 17,018 PGK fuzes. FY 2021 Overseas Contingency Operations (OCO) procurement dollars in the amount of \$21.675 million supports the procurement of 2,974 critical Army munitions consumed in support of Operation Inherent Resolve for ISIL. TYPE CLASSIFICATION DATE: October 2015</p>		
<p>(ER8021) ARTY, 155MM PROP CHG, MACS M232 SERIES This is a training standard item used in training and combat. FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Total Base dollars in the amount of \$67.131 million supports production of 317,224 charges. TYPE CLASSIFICATION DATE: 2001</p>		
<p>(E62208) ARTY, FUZE PD M739 Series This is a training standard item used in training and combat. FY 2021 request supports annual training and a builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Total Base dollars in the amount of \$19.170 million supports production of 207,733 fuzes. TYPE CLASSIFICATION: 1982</p>		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020								
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37						P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All						Item Number / Title [DODIC]: E27502 / PROP CHG, 155mm ARTY MACS, M231 Series [DA12]									
ID Code (A=Service Ready, B=Not Service Ready) : A									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)				314.884			-			7.560			-			-			-		
Less PY Advance Procurement (\$ in Millions)				-			-			-			-			-			-		
Net Procurement (P-1) (\$ in Millions)				314.884			-			7.560			-			-			-		
Plus CY Advance Procurement (\$ in Millions)				-			-			-			-			-			-		
Total Obligation Authority (\$ in Millions)				314.884			-			7.560			-			-			-		
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																					
Initial Spares (\$ in Millions)				-			-			-			-			-			-		
Gross/Weapon System Unit Cost (\$ in 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																					
LOAD, ASSEMBLE, PACK (LAP) ^(†)		-	-	314.884	-	-	-	95.10	40,180	3.821	-	-	-	-	-	-	-	-	-		
COMBUSTIBLE CASES - M231 ^(†)		-	-	-	-	-	-	44.72	41,385	1.851	-	-	-	-	-	-	-	-	-		
CONTAINER, M231 ^(†)		-	-	-	-	-	-	59.35	10,446	0.620	-	-	-	-	-	-	-	-	-		
IGNITION PROPELLANT, MACS ^(†)		-	-	-	-	-	-	11.30	2,571	0.029	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Recurring Cost</i>		-	-	314.884	-	-	-	-	-	6.321	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Hardware Cost</i>		-	-	314.884	-	-	-	-	-	6.321	-	-	-	-	-	-	-	-	-		
Support - Acceptance Testing Cost																					
Acceptance Test		-	-	-	-	-	-	-	-	0.077	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Support - Acceptance Testing Cost</i>		-	-	-	-	-	-	-	-	0.077	-	-	-	-	-	-	-	-	-		
Support - Production Engineering Cost																					
Production Engineering		-	-	-	-	-	-	-	-	1.162	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Support - Production Engineering Cost</i>		-	-	-	-	-	-	-	-	1.162	-	-	-	-	-	-	-	-	-		
Gross/Weapon System Cost		-	-	314.884	-	-	-	-	-	7.560	-	-	-	-	-	-	-	-	-		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All	Item Number / Title [DODIC]: E27502 / PROP CHG, 155mm ARTY MACS, M231 Series [DA12]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All					Item Number / Title [DODIC]: E27502 / PROP CHG, 155mm ARTY MACS, M231 Series [DA12]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2022	40,180	95.10	Y		
COMBUSTIBLE CASES - M231		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Sep 2021	41,385	44.72	Y		
CONTAINER, M231		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2021	10,446	59.35	Y		
IGNITION PROPELLANT, MACS		2020	ST. MARKS POWDER INC. / CRAWFORDVILLE, FL	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2021	2,571	11.30	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All	Item Number / Title [DODIC]: E62208 / FUZE, 155mm ARTY Point Detonating (PD), M739 Series [N340]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	269.182	29.975	25.066	19.170	-	19.170
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	269.182	29.975	25.066	19.170	-	19.170
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	269.182	29.975	25.066	19.170	-	19.170

(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																		
COMPLETE ROUND ^(†)	-	-	269.182	71.93	324,992	23.377	76.86	268,227	20.616	75.58	207,733	15.700	-	-	-	75.58	207,733	15.700
Subtotal: Recurring Cost	-	-	269.182	-	-	23.377	-	-	20.616	-	-	15.700	-	-	-	-	-	15.700
Subtotal: Hardware Cost	-	-	269.182	-	-	23.377	-	-	20.616	-	-	15.700	-	-	-	-	-	15.700
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	2.159	-	-	1.029	-	-	0.798	-	-	-	-	-	0.798
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	2.159	-	-	1.029	-	-	0.798	-	-	-	-	-	0.798
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	4.439	-	-	3.422	-	-	2.671	-	-	-	-	-	2.671
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	4.439	-	-	3.422	-	-	2.671	-	-	-	-	-	2.671
Gross/Weapon System Cost	-	-	269.182	-	-	29.975	-	-	25.066	-	-	19.170	-	-	-	-	-	19.170

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All				Item Number / Title [DODIC]: E62208 / FUZE, 155mm ARTY Point Detonating (PD), M739 Series [N340]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	ACTION MANUFACTURING COMPANY / BRISTOL, PA	Option / IDIQ	PICATINNY ARSENAL, NJ	Feb 2019	Feb 2022	324,992	71.93	Y		
COMPLETE ROUND ^(†)		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2023	268,227	76.86	Y		
COMPLETE ROUND ^(†)		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2024	207,733	75.58	Y		

^(†) indicates the presence of a P-21

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All
		Item Number / Title [DODIC]: E62208 / FUZE, 155mm ARTY Point Detonating (PD), M739 Series [N340]

Cost Elements (Units in Thousands)						Fiscal Year 2019													Fiscal Year 2020													B A L A N C E			
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019													Calendar Year 2020															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
	1	2019	ARMY	324.992	.000	324.992												A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	324.992	
	2	2020	ARMY	268.227	.000	268.227																													268.227
	2	2020	MC (*)	201.795	.000	201.795																													201.795
	2	2020	Total	470.022	.000	470.022																													470.022
	2	2021	AFSO (*)	11.215	.000	11.215																													11.215
	2	2021	ARMY	207.733	.000	207.733																													207.733
	2	2021	Total	218.948	.000	218.948																													218.948
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army																							Date: February 2020															
Appropriation / Budget Activity / Budget Sub Activity:						P-1 Line Item Number / Title:											Item Number / Title [DODIC]:																					
2034A / 01 / 37						8750E27501 / Artillery Propellants, Fuzes and Primers, All											E62208 / FUZE, 155mm ARTY Point Detonating (PD), M739 Series [N340]																					
Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2021											Fiscal Year 2022											B A L A N C E										
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021											Calendar Year 2022																				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N		J U L	A U G	S E P							
COMPLETE ROUND																																						
	1	2019	ARMY	324.992	.000	324.992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27.082	27.000	27.000	27.000	27.000	27.000	27.000	27.000	108.910	
	2	2020	ARMY	268.227	.000	268.227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	268.227
	2	2020	MC (†)	201.795	.000	201.795	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	201.795
	2	2020	Total	470.022	.000	470.022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	470.022	
	2	2021	AFSO (†)	11.215	.000	11.215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.215	
	2	2021	ARMY	207.733	.000	207.733	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	207.733	
	2	2021	Total	218.948	.000	218.948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218.948	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P								

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Exhibit P-21, Production Schedule: PB 2021 Army														Date: February 2020															
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All										Item Number / Title [DODIC]: E62208 / FUZE, 155mm ARTY Point Detonating (PD), M739 Series [N340]									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2023														Fiscal Year 2024														B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023														Calendar Year 2024														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
	1	2019	ARMY	324.992	216.082	108.910	27.000	27.090	27.410	27.410																			.000						
	2	2020	ARMY	268.227	.000	268.227	-	-	-	-	-	23.000	23.000	23.000	23.000	23.000	23.000	23.000	23.000	23.000	23.000	23.000	23.000	23.000	23.000	23.000	23.000	15.227	.000						
	2	2020	MC (‡)	201.795	.000	201.795	-	-	-	-	-	17.000	17.000	17.000	17.000	17.000	17.000	17.000	17.000	17.000	17.000	17.000	17.000	17.000	18.000	13.795	.000								
	2	2020	Total	470.022	.000	470.022	-	-	-	-	-	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	41.000	29.022	-	-	.000						
	2	2021	AFSO (‡)	11.215	.000	11.215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.215	.000							
	2	2021	ARMY	207.733	.000	207.733	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.333	17.333	86.402						
	2	2021	Total	218.948	.000	218.948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28.548	17.333	86.402						
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All										Item Number / Title [DODIC]: E62208 / FUZE, 155mm ARTY Point Detonating (PD), M739 Series [N340]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2025															Fiscal Year 2026															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 4	BAL D U E A S O F 1 O C T	Calendar Year 2025															Calendar Year 2026															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
COMPLETE ROUND																																					
	1	2019	ARMY	324.992	324.992	.000																												.000			
	2	2020	ARMY	268.227	268.227	.000																											.000				
	2	2020	MC (*)	201.795	201.795	.000																											.000				
	2	2020	Total	470.022	470.022	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
	2	2021	AFSO (*)	11.215	11.215	.000	-	-	-	-	-																						.000				
	2	2021	ARMY	207.733	121.331	86.402	17.333	17.333	17.333	17.333	17.070																						.000				
	2	2021	Total	218.948	132.546	86.402	17.333	17.333	17.333	17.333	17.070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All
		Item Number / Title [DODIC]: E62208 / FUZE, 155mm ARTY Point Detonating (PD), M739 Series [N340]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	ACTION MANUFACTURING COMPANY - BRISTOL, PA	20,000	35,000	50,000	10	10	36	46	10	10	36	46
2	TO BE SELECTED - TBS01	20,000	35,000	50,000	2	2	36	38	6	6	36	42

(‡) 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-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37						P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All						Item Number / Title [DODIC]: E63000 / PRIMER,155mm ARTY Percussion, M82 Series [N523]						
ID Code (A=Service Ready, B=Not Service Ready) : A									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)				42.690		2.447		2.494		-		-		-				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				42.690		2.447		2.494		-		-		-				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				42.690		2.447		2.494		-		-		-				
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (\$ in Millions)				-		-		-		-		-		-				
Gross/Weapon System Unit Cost (\$ in 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																		
COMPLETE ROUND	-	-	42.690	12.46	115,200	1.435	12.46	146,190	1.822	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	42.690	-	-	1.435	-	-	1.822	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	42.690	-	-	1.435	-	-	1.822	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.181	-	-	0.075	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.181	-	-	0.075	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Production Qualification Test	-	-	-	-	-	0.266	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	0.266	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.564	-	-	0.597	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.564	-	-	0.597	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	42.690	-	-	2.447	-	-	2.494	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All	Item Number / Title [DODIC]: E99250 / FUZE, 155mm ARTY Precision Guidance Kit (PGK) [NA29]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	499.378	217.933	160.596	139.036	21.675	160.711
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	499.378	217.933	160.596	139.036	21.675	160.711
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	499.378	217.933	160.596	139.036	21.675	160.711

(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																		
COMPLETE ROUND(†)	9,562.84	47,009	449.540	6,934.14	23,454	162.633	7,286.95	17,307	126.115	7,286.95	17,018	124.009	7,286.95	2,974	21.671	7,286.95	19,992	145.681
<i>Subtotal: Recurring Cost</i>	-	-	449.540	-	-	162.633	-	-	126.115	-	-	124.009	-	-	21.671	-	-	145.681
Non Recurring Cost																		
GPS Receiver Obsolescence (M-Code Compliance)	-	-	6.157	-	-	4.446	-	-	5.000	-	-	1.500	-	-	-	-	-	1.500
Melody II ASIC Chips	-	-	4.618	-	-	23.100	-	-	15.000	-	-	-	-	-	-	-	-	-
M762A1 Safe & Arm PBXW14	-	-	0.804	-	-	0.169	-	-	0.169	-	-	1.460	-	-	-	-	-	1.460
Rhapsody II ASIC Chips	-	-	5.426	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CINCO II Chips/ MMIC Chip Buys	-	-	0.856	-	-	4.684	-	-	-	-	-	-	-	-	-	-	-	-
Melody II Qual	-	-	-	-	-	2.000	-	-	3.000	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	17.861	-	-	34.399	-	-	23.169	-	-	2.960	-	-	-	-	-	2.960
Subtotal: Hardware Cost	-	-	467.401	-	-	197.032	-	-	149.284	-	-	126.969	-	-	21.671	-	-	148.641
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	9.787	-	-	3.692	-	-	1.817	-	-	2.247	-	-	0.004	-	-	2.251

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All	Item Number / Title [DODIC]: E99250 / FUZE, 155mm ARTY Precision Guidance Kit (PGK) [NA29]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	9.787	-	-	3.692	-	-	1.817	-	-	2.247	-	-	0.004	-	-	2.251
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	6.058	-	-	6.000	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	6.058	-	-	6.000	-	-	-	-	-	-	-	-	-	-	-	-
Support - New Equipment Training (NET) Cost																		
Equipment	-	-	5.502	-	-	2.207	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - New Equipment Training (NET) Cost</i>	-	-	5.502	-	-	2.207	-	-	-	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Production Qualification Test	-	-	-	-	-	2.000	-	-	2.037	-	-	2.000	-	-	-	-	-	2.000
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	2.000	-	-	2.037	-	-	2.000	-	-	-	-	-	2.000
Support - Production Engineering Cost																		
Production Engineering	-	-	10.630	-	-	7.002	-	-	7.458	-	-	7.820	-	-	-	-	-	7.820
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	10.630	-	-	7.002	-	-	7.458	-	-	7.820	-	-	-	-	-	7.820
Gross/Weapon System Cost	-	-	499.378	-	-	217.933	-	-	160.596	-	-	139.036	-	-	21.675	-	-	160.711

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All				Item Number / Title [DODIC]: E99250 / FUZE, 155mm ARTY Precision Guidance Kit (PGK) [NA29]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Feb 2021	23,454	6,934.14	Y		
COMPLETE ROUND ^(†)		2020	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2022	17,307	7,286.95	Y		
COMPLETE ROUND ^(†)	✓	2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2023	2,974	7,286.95	Y		
COMPLETE ROUND ^(†)		2021	NORTHROP GRUMMAN INNOVATION / PLYMOUTH, MN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2023	17,018	7,286.95	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army																									Date: February 2020											
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All										Item Number / Title [DODIC]: E99250 / FUZE, 155mm ARTY Precision Guidance Kit (PGK) [NA29]																
Cost Elements (Units in Thousands)						Fiscal Year 2021										Fiscal Year 2022										B A L A N C E										
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021										Calendar Year 2022																			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R		M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																				
Prior Years Deliveries: 47009																																				
	2	2019	ARMY	23.454	.000	23.454	-	-	-	-	1.948	1.948	1.948	1.950	1.950	1.950	1.950	1.950	1.950	1.970	1.970	1.970								.000						
	2	2020	ARMY	17.307	.000	17.307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.483	1.483	1.483	1.483	1.483	1.483	1.483	6.926
	2	2021	ARMY	17.018	.000	17.018								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.018		
✓	1	2021	ARMY	2.974	.000	2.974								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.974		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All										Item Number / Title [DODIC]: E99250 / FUZE, 155mm ARTY Precision Guidance Kit (PGK) [NA29]									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2023												Fiscal Year 2024												B A L A N C E					
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P				
COMPLETE ROUND																																			
Prior Years Deliveries: 47009																																			
	2	2019	ARMY	23.454	23.454	.000																													.000
	2	2020	ARMY	17.307	10.381	6.926	1.483	1.483	1.483	1.483	.994																								.000
	2	2021	ARMY	17.018	.000	17.018	-	-	-	-	-	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	.000	
✓	1	2021	ARMY	2.974	.000	2.974	-	-	-	-	-	.247	.247	.248	.248	.248	.248	.248	.248	.248	.248	.248	.248	.248	.248	.248	.248	.248	.248	.248	.248	.248	.000		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All
		Item Number / Title [DODIC]: E99250 / FUZE, 155mm ARTY Precision Guidance Kit (PGK) [NA29]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NORTHROP GRUMAN INNOVATION - PLYMOUTH, MN	333	1,100	2,500	13	9	27	36	3	6	24	30
2	NORTHROP GRUMMAN INNOVATION - PLYMOUTH, MN	333	1,100	2,500	13	9	27	36	3	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All	Item Number / Title [DODIC]: E99909 / Multi-Option Fuze, Artillery M782 [NA09]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	10.000	-	-	7.576	-	7.576
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	10.000	-	-	7.576	-	7.576
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	10.000	-	-	7.576	-	7.576

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

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

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

Cost Elements	Prior Years			FY 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																		
Complete Round ^(†)	-	-	10.000	-	-	-	-	-	-	1,342.00	988	1.326	-	-	-	1,342.00	988	1.326
<i>Subtotal: Recurring Cost</i>	-	-	10.000	-	-	-	-	-	-	-	-	1.326	-	-	-	-	-	1.326
Subtotal: Hardware Cost	-	-	10.000	-	-	-	-	-	-	-	-	1.326	-	-	-	-	-	1.326
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	-	-	-	0.277	-	-	-	-	-	0.277
First Article Test	-	-	-	-	-	-	-	-	-	-	-	5.201	-	-	-	-	-	5.201
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	-	-	-	5.478	-	-	-	-	-	5.478
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.772	-	-	-	-	-	0.772
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	-	-	-	-	-	-	0.772	-	-	-	-	-	0.772
Gross/Weapon System Cost	-	-	10.000	-	-	-	-	-	-	-	-	7.576	-	-	-	-	-	7.576

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All					Item Number / Title [DODIC]: E99909 / Multi-Option Fuze, Artillery M782 [NA09]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Jun 2021	Jun 2023	988	1,342.00	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37						P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All						Item Number / Title [DODIC]: ER8021 / PROP CHG, 155mm ARTY MACS, M232 Series [DA67]						
ID Code (A=Service Ready, B=Not Service Ready) : A									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)				623.252		20.222			76.277			67.131			-		67.131	
Less PY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Net Procurement (P-1) (\$ in Millions)				623.252		20.222			76.277			67.131			-		67.131	
Plus CY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Total Obligation Authority (\$ in Millions)				623.252		20.222			76.277			67.131			-		67.131	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (\$ in Millions)				-		-			-			-			-		-	
Gross/Weapon System Unit Cost (\$ in 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	621.372	41.45	94,650	3.923	53.25	335,795	17.881	36.49	317,224	11.576	-	-	-	36.49	317,224	11.576
PROPELLANT, M31A2 ^(†)	-	-	-	19.76	459,000	9.070	20.31	1,618,532	32.872	20.62	1,529,019	31.528	-	-	-	20.62	1,529,019	31.528
CONTAINER, M232A1 ^(†)	-	-	-	78.72	19,512	1.536	62.15	70,516	4.383	78.71	66,617	5.243	-	-	-	78.71	66,617	5.243
CTG CASE COMBUSTIBLE F/155MM M ^(†)	-	-	-	42.16	95,536	4.028	44.67	345,869	15.450	45.57	326,740	14.890	-	-	-	45.57	326,740	14.890
IGNITION PROPELLANT, MACS ^(†)	-	-	-	10.83	6,100	0.066	11.30	21,827	0.247	11.05	20,619	0.228	-	-	-	11.05	20,619	0.228
<i>Subtotal: Recurring Cost</i>	-	-	621.372	-	-	18.623	-	-	70.833	-	-	63.465	-	-	-	-	-	63.465
<i>Subtotal: Hardware Cost</i>	-	-	621.372	-	-	18.623	-	-	70.833	-	-	63.465	-	-	-	-	-	63.465
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.238	-	-	0.509	-	-	0.436	-	-	-	-	-	0.436
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.238	-	-	0.509	-	-	0.436	-	-	-	-	-	0.436
Support - Production Engineering Cost																		
Production Engineering	-	-	1.880	-	-	1.362	-	-	4.935	-	-	3.230	-	-	-	-	-	3.230

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Item Number / Title [DODIC]: ER8021 / PROP CHG, 155mm ARTY MACS, M232 Series [DA67]		

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)
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.880	-	-	1.362	-	-	4.935	-	-	3.230	-	-	-	-	-	3.230
Gross/Weapon System Cost	-	-	623.252	-	-	20.222	-	-	76.277	-	-	67.131	-	-	-	-	-	67.131

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All					Item Number / Title [DODIC]: ER8021 / PROP CHG, 155mm ARTY MACS, M232 Series [DA67]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2022	94,650	41.45	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2022	335,795	53.25	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2023	317,224	36.49	Y		
PROPELLANT, M31A2		2019	GEN DYNAMICS ORDNANCE AND / SALABERRY-DE- VALLEYFIELD, CANADA	C / IDIQ	PICATINNY ARSENAL, NJ	Jul 2019	Nov 2020	459,000	19.76	Y		
PROPELLANT, M31A2		2020	GEN DYNAMICS ORDNANCE AND / SALABERRY-DE- VALLEYFIELD, CANADA	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Nov 2021	1,618,532	20.31	Y		
PROPELLANT, M31A2		2021	GEN DYNAMICS ORDNANCE AND / SALABERRY-DE- VALLEYFIELD, CANADA	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2021	Nov 2022	1,529,019	20.62	Y		
CONTAINER, M232A1		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Dec 2019	Dec 2020	19,512	78.72	Y		
CONTAINER, M232A1		2020	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2021	70,516	62.15	Y		
CONTAINER, M232A1		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2022	66,617	78.71	Y		
CTG CASE COMBUSTIBLE F/155MM M		2019	ARMTEC DEFENSE PRODUCTS CO / COACHELLA, CA	Option / IDIQ	PICATINNY ARSENAL, NJ	Dec 2018	Dec 2019	95,536	42.16	Y		
CTG CASE COMBUSTIBLE F/155MM M		2020	ARMTEC DEFENSE PRODUCTS CO / COACHELLA, CA	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2021	345,869	44.67	Y		
CTG CASE COMBUSTIBLE F/155MM M		2021	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2022	326,740	45.57	Y		
IGNITION PROPELLANT, MACS		2019	ST. MARKS POWDER INC. / CRAWFORDVILLE, FL	C / IDIQ	PICATINNY ARSENAL, NJ	Jul 2019	Jul 2020	6,100	10.83	Y		
IGNITION PROPELLANT, MACS		2020	ST. MARKS POWDER INC. / CRAWFORDVILLE, FL	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2021	21,827	11.30	Y		
IGNITION PROPELLANT, MACS		2021	ST. MARKS POWDER INC. / CRAWFORDVILLE, FL	Option / IDIQ	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2022	20,619	11.05	Y		

^(†) indicates the presence of a P-21

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

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All	Item Number / Title [DODIC]: ER8021 / PROP CHG, 155mm ARTY MACS, M232 Series [DA67]
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Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2019														Fiscal Year 2020												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019														Calendar Year 2020												
							O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S			
						C	V	E	A	E	A	P	A	U	U	U	E	T	V	E	A	B	A	P	A	U	U	U	E				
LOAD, ASSEMBLE, PACK (LAP)																																	
	1	2019	ARMY	94.650	.000	94.650																								94.650			
	1	2020	ARMY	335.795	.000	335.795																								335.795			
	1	2020	MC (†)	28.114	.000	28.114																								28.114			
	1	2020	Total	363.909	.000	363.909																								363.909			
	1	2021	ARMY	317.224	.000	317.224																								317.224			
						O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S				
						C	V	E	A	E	A	P	A	U	U	U	E	T	V	E	A	B	A	P	A	U	U	U	E	P			

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All
		Item Number / Title [DODIC]: ER8021 / PROP CHG, 155mm ARTY MACS, M232 Series [DA67]

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2021														Fiscal Year 2022														B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021														Calendar Year 2022															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						
LOAD, ASSEMBLE, PACK (LAP)																																				
	1	2019	ARMY	94.650	.000	94.650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.000	15.000	15.000	15.000	15.000	15.000	4.650	.000
	1	2020	ARMY	335.795	.000	335.795	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.000	30.000	30.000	30.000	30.000	30.000	30.000	140.795
	1	2020	MC (†)	28.114	.000	28.114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.452	8.662	-	-	-	-	-	.000
	1	2020	Total	363.909	.000	363.909	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34.452	38.662	30.000	30.000	30.000	30.000	30.000	140.795
	1	2021	ARMY	317.224	.000	317.224																													317.224	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All										Item Number / Title [DODIC]: ER8021 / PROP CHG, 155mm ARTY MACS, M232 Series [DA67]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2023												Fiscal Year 2024												B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L		A U G	S E P
LOAD, ASSEMBLE, PACK (LAP)																															
	1	2019	ARMY	94.650	94.650	.000																							.000		
	1	2020	ARMY	335.795	195.000	140.795	30.000	30.000	30.000	30.000	20.795																		.000		
	1	2020	MC (†)	28.114	28.114	.000	-	-	-	-	-																	.000			
	1	2020	Total	363.909	223.114	140.795	30.000	30.000	30.000	30.000	20.795	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
	1	2021	ARMY	317.224	.000	317.224	-	-	-	-	-	26.000	26.000	26.000	26.000	26.000	26.000	26.000	28.000	26.000	28.000	28.000	25.224							.000	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 8750E27501 / Artillery Propellants, Fuzes and Primers, All
		Item Number / Title [DODIC]: ER8021 / PROP CHG, 155mm ARTY MACS, M232 Series [DA67]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TO BE SELECTED - TBS01	30,000	50,000	125,000	6	6	24	30	6	6	24	30

(‡) 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 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 43: Mines **P-1 Line Item Number / Title:** 0442EA0800 / Mines & Clearing Charges, All Types

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

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	201.942	15.005	39.239	65.278	-	65.278	52.464	49.374	26.856	26.855	-	477.013
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	201.942	15.005	39.239	65.278	-	65.278	52.464	49.374	26.856	26.855	-	477.013
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	201.942	15.005	39.239	65.278	-	65.278	52.464	49.374	26.856	26.855	-	477.013

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

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

Description:

This budget line includes Mines and Mine Clearing Charges, All Types.

(E72194) The M88 Practice Mine canister contains an expulsion charge and six Inert weighted simulants providing similar effects to the M87 & M87A1 tactical canisters. The use of four M88 canisters in the four corners of the M139 Volcano System provide Warfighters the live fire effect by expelling the six dumb mines marking the start and end of a training mine field. The M88 when fired expels the six inert simulants at the same distance and distributions of density to represent similar emplacement of a tactical obstacle field. The M88 canisters are a onetime use class V ammo item. The M88 canisters support the Army's modernization priorities of the National Defense Strategy. This item is Code A, approved for service use.

(E72800) MK7 Mod2 The Anti-Personnel Obstacle Breaching System (APOBS) is used by dismounted troops in combat operations to clear a lane through wire obstacles and anti-personnel mines. This item is a lightweight, self-contained, 1 shot expendable system that is transported and deployed by a 2 man team. It consists of a line charge/fuze assembly and a rocket motor assembly. APOBS uses the EX126 Mod 0 rocket motor to propel a line charge over the obstacle. The line is then exploded, clearing a lane. The APOBS System is being actively used in Combat Engineering Operations. This item is Code A, approved for service use.

(E75102) The M68A2 is the training ammunition for the M58A4 Linear Demolition Charge. It is identical to the M58A4 except all explosive components have been replaced with non-explosive components of identical weight. It can be recovered after deployment by the MK22 MOD4 rocket and used up to three times. This item is Code A, approved for service use.

(E76900) The MK22 MOD4 rocket is used to deploy the M58A4 Linear Demolition Charge or the M68A2 Inert Line Charge over a target obstacle. One rocket is used with each M58A4 and up to 3 can be used with each M68A2. This item is Code A, approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 43: Mines **P-1 Line Item Number / Title:** 0442EA0800 / Mines & Clearing Charges, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E72194 / MINE, Practice, M88 (VOLCANO) [K042]		A		- / 19.935	- / -	- / 1.385	- / 3.968	- / -	- / 3.968
P-5	E72800 / Anti-Pers Obstacle Breachng Sys(APOBS), MK7 w/Mods [MN79]	P-5a, P-21	A		- / 88.814	- / 15.005	- / -	- / 23.975	- / -	- / 23.975
P-5	E75102 / LINE CHARGE INERT M68A2 F/MICLIC [M914]	P-5a, P-21	A		- / 35.903	- / -	- / 19.564	- / 18.979	- / -	- / 18.979
P-5	E76900 / ROCKET, Motor 5 in, MK22 MOD 4 f/MICLIC [J143]	P-5a, P-21	A		- / 57.290	- / -	- / 18.290	- / 18.356	- / -	- / 18.356
P-40	Total Gross/Weapon System Cost				- / 201.942	- / 15.005	- / 39.239	- / 65.278	- / -	- / 65.278

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

The FY 2021 Total Base dollars in the amount of \$65.278 million supports the procurement of 4 variants of Mines and Mine Clearing Charges.

(E72194) Practice M88 Volcano
 This is a training standard item used in functional training and combat. The FY 2021 request supports annual training and builds a reserve to support out year training in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$3.968 million supports the production of 2,071 Volcanos.
 Type Classification Date: 1989

(E72800) Anti-Personnel Obstacle Breaching Sys (APOBS), MK7 w/Mods
 This is a training standard item used in training and combat. The FY 2021 request supports building of currently short war reserve stocks to meet the Army's readiness and procurement goals. FY 2021 Base procurement dollars in the amount of \$23.975 million supports the production of 1,749 APOBS.
 Type Classification Date: 2001

(E75102) Series Line Charge for MICLIC
 This is a training standard item used in training. The FY 2021 request supports replenishment of projected training losses to maintain inventory at a healthy readiness level. FY 2021 Base procurement dollars in the amount of \$18.979 million supports the production of 305 MICLIC Inert items.
 Type Classification Date: 1985

(E76900) MICLIC 5 In Rocket Motor MK 22 MOD 4
 This is a training standard item used in training and combat. The FY 2021 request supports replenishment of projected training and other losses to maintain inventory at a healthy readiness level. FY 2021 Base procurement dollars in the amount of \$18.356 million supports the production of 892 Rocket Motors.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 43: Mines		P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Type Classification Date: 1985		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43	P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types	Item Number / Title [DODIC]: E72194 / MINE, Practice, M88 (VOLCANO) [K042]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	19.935	-	1.385	3.968	-	3.968
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	19.935	-	1.385	3.968	-	3.968
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	19.935	-	1.385	3.968	-	3.968

(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																		
COMPLETE ROUND	-	-	-	-	-	-	1,378.93	672	0.927	1,406.50	2,071	2.913	-	-	-	1,406.50	2,071	2.913
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	0.927	-	-	2.913	-	-	-	-	-	2.913
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	0.927	-	-	2.913	-	-	-	-	-	2.913
Support - Production Engineering Cost																		
Production Engineering	-	-	19.935	-	-	-	-	-	0.458	-	-	1.055	-	-	-	-	-	1.055
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	19.935	-	-	-	-	-	0.458	-	-	1.055	-	-	-	-	-	1.055
Gross/Weapon System Cost	-	-	19.935	-	-	-	-	-	1.385	-	-	3.968	-	-	-	-	-	3.968

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43		P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types
		Item Number / Title [DODIC]: E72800 / Anti-Pers Obstacle Breachng Sys(APOBS), MK7 w/Mods [MN79]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	88.814	15.005	-	23.975	-	23.975
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	88.814	15.005	-	23.975	-	23.975
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	88.814	15.005	-	23.975	-	23.975

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	87.107	12,475.16	912	11.377	-	-	-	11,284.24	1,749	19.736	-	-	-	11,284.24	1,749	19.736
PBXN-10 TYPE 2 ^(†)	-	-	-	27.97	2,280	0.064	-	-	-	29.33	4,373	0.128	-	-	-	29.33	4,373	0.128
PBXN-10 TYPE 1 ^(†)	-	-	-	20.26	45,600	0.924	-	-	-	21.24	87,450	1.857	-	-	-	21.24	87,450	1.857
PROPELLANT GRAIN (ROCKET) ^(†)	-	-	-	553.58	1,003	0.555	-	-	-	537.57	1,923	1.034	-	-	-	537.57	1,923	1.034
<i>Subtotal: Recurring Cost</i>	-	-	<i>87.107</i>	-	-	<i>12.920</i>	-	-	-	-	-	<i>22.756</i>	-	-	-	-	-	<i>22.756</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>87.107</i>	-	-	<i>12.920</i>	-	-	-	-	-	<i>22.756</i>	-	-	-	-	-	<i>22.756</i>
Support - Acceptance Testing Cost																		
First Article Test	-	-	0.400	-	-	0.867	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	<i>0.400</i>	-	-	<i>0.867</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.296	-	-	1.204	-	-	-	-	-	1.205	-	-	-	-	-	1.205
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>1.296</i>	-	-	<i>1.204</i>	-	-	-	-	-	<i>1.205</i>	-	-	-	-	-	<i>1.205</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.011	-	-	0.014	-	-	-	-	-	0.015	-	-	-	-	-	0.015
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.011</i>	-	-	<i>0.014</i>	-	-	-	-	-	<i>0.015</i>	-	-	-	-	-	<i>0.015</i>

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43	P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types	Item Number / Title [DODIC]: E72800 / Anti-Pers Obstacle Breachng Sys(APOBS), MK7 w/Mods [MN79]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	88.814	-	-	15.005	-	-	-	-	-	23.975	-	-	-	-	-	23.975

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43			P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types				Item Number / Title [DODIC]: E72800 / Anti-Pers Obstacle Breachng Sys(APOBS), MK7 w/Mods [MN79]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	ENSIGN-BICKFORD AEROSPACE & / SIMSBURY, CT	C / FFP	ROCK ISLAND ARSENAL, IL	Dec 2019	Dec 2021	912	12,475.16	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2022	1,749	11,284.24	Y		
PBXN-10 TYPE 2		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2020	Jul 2021	2,280	27.97	Y		
PBXN-10 TYPE 2		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2021	Jul 2022	4,373	29.33	Y		
PBXN-10 TYPE 1		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2020	Jul 2021	45,600	20.26	Y		
PBXN-10 TYPE 1		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2021	Jul 2022	87,450	21.24	Y		
PROPELLANT GRAIN (ROCKET)		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	1,003	553.58	Y		
PROPELLANT GRAIN (ROCKET)		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	1,923	537.57	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43										P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types										Item Number / Title [DODIC]: E72800 / Anti-Pers Obstacle Breachng Sys(APOBS), MK7 w/Mods [MN79]									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2020															Fiscal Year 2021															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 9	BAL D U E A S O F 1 O C T	Calendar Year 2020															Calendar Year 2021															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
LOAD, ASSEMBLE, PACK (LAP)																																					
	1	2019	ARMY	912	0	912				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	912						
	1	2019	MC (†)	361	0	361				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	361							
	1	2019	Total	1,273	0	1,273				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,273							
	2	2021	ARMY	1,749	0	1,749																								1,749							
	2	2021	MC (†)	493	0	493																								493							
	2	2021	Total	2,242	0	2,242																								2,242							
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43										P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types										Item Number / Title [DODIC]: E72800 / Anti-Pers Obstacle Breachng Sys(APOBS), MK7 w/Mods [MN79]									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2022													Fiscal Year 2023													BALANCE			
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022													Calendar Year 2023														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
LOAD, ASSEMBLE, PACK (LAP)																																		
	1	2019	ARMY	912	0	912	-	-	100	100	100	100	100	100	80	100	132																	0
	1	2019	MC (†)	361	0	361	-	-	12	9	2	12	23	-	100	100	103																0	
	1	2019	Total	1,273	0	1,273	-	-	112	109	102	112	123	100	180	200	235	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	2	2021	ARMY	1,749	0	1,749	-	-	-	-	-	-	-	-	-	-	-	120	120	200	200	200	200	200	200	200	120	120	69			0		
	2	2021	MC (†)	493	0	493	-	-	-	-	-	-	-	-	-	-	-	180	200	93	20	-	-	-	-	-	-	-	-	-	-		0	
	2	2021	Total	2,242	0	2,242	-	-	-	-	-	-	-	-	-	-	-	300	320	293	220	200	200	200	200	120	120	69	-	-	0			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43		P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types
Item Number / Title [DODIC]: E72800 / Anti-Pers Obstacle Breachng Sys(APOBS), MK7 w/Mods [MN79]		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	ENSIGN-BICKFORD AEROSPACE & - SIMSBURY, CT	50	130	400	8	8	24	32	6	6	18	24
2	TO BE SELECTED - TBS01	50	130	400	8	8	24	32	6	6	18	24

(±) 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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43	P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types	Item Number / Title [DODIC]: E75102 / LINE CHARGE INERT M68A2 F/MICLIC [M914]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	35.903	-	19.564	18.979	-	18.979
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	35.903	-	19.564	18.979	-	18.979
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	35.903	-	19.564	18.979	-	18.979

(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																		
COMPLETE ROUND ^(†)	-	-	-	-	-	-	60,898.98	300	18.270	60,898.98	305	18.574	-	-	-	60,898.98	305	18.574
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	18.270	-	-	18.574	-	-	-	-	-	18.574
Subtotal: Hardware Cost	-	-	-	-	-	-	-	-	18.270	-	-	18.574	-	-	-	-	-	18.574
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	0.887	-	-	-	-	-	-	-	-	-
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	0.887	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	35.903	-	-	-	-	-	0.400	-	-	0.400	-	-	-	-	-	0.400
Subtotal: Support - Production Engineering Cost	-	-	35.903	-	-	-	-	-	0.400	-	-	0.400	-	-	-	-	-	0.400
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	0.007	-	-	0.005	-	-	-	-	-	0.005
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	-	-	-	0.007	-	-	0.005	-	-	-	-	-	0.005
Gross/Weapon System Cost	-	-	35.903	-	-	-	-	-	19.564	-	-	18.979	-	-	-	-	-	18.979

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43			P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types				Item Number / Title [DODIC]: E75102 / LINE CHARGE INERT M68A2 F/MICLIC [M914]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2020	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2022	300	60,898.98	Y		
COMPLETE ROUND ^(†)		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2022	305	60,898.98	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army																Date: February 2020													
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43										P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types										Item Number / Title [DODIC]: E75102 / LINE CHARGE INERT M68A2 F/MICLIC [M914]									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2022												Fiscal Year 2023												B A L A N C E							
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022												Calendar Year 2023																	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L		A U G	S E P					
COMPLETE ROUND																																				
	1	2020	ARMY	300	0	300	-	-	-	-	-	-	56	56	56	56	38	38																		0
	1	2021	ARMY	305	0	305	-	-	-	-	-	-	-	-	-	-	-	-	56	56	56	56	56	25												0
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43		P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types
		Item Number / Title [DODIC]: E75102 / LINE CHARGE INERT M68A2 F/MICLIC [M914]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TO BE SELECTED - TBS01	25	56	168	8	8	24	32	6	6	18	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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43	P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types	Item Number / Title [DODIC]: E76900 / ROCKET, Motor 5 in, MK22 MOD 4 f/MICLIC [J143]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	57.290	-	18.290	18.356	-	18.356
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	57.290	-	18.290	18.356	-	18.356
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	57.290	-	18.290	18.356	-	18.356

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	-	-	-	-	17,785.12	890	15.829	18,835.36	892	16.801	-	-	-	18,835.36	892	16.801
PROPELLANT N-5 ^(†)	-	-	-	-	-	-	15.43	62,138	0.959	15.74	62,277	0.980	-	-	-	15.74	62,277	0.980
EC INHIBITING TAPE ^(†)	-	-	-	-	-	-	61.34	2,331	0.143	63.17	2,336	0.148	-	-	-	63.17	2,336	0.148
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	16.931	-	-	17.929	-	-	-	-	-	17.929
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	16.931	-	-	17.929	-	-	-	-	-	17.929
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	0.954	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.954	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	57.290	-	-	-	-	-	0.400	-	-	0.419	-	-	-	-	-	0.419
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	57.290	-	-	-	-	-	0.400	-	-	0.419	-	-	-	-	-	0.419
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	0.005	-	-	0.008	-	-	-	-	-	0.008
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	0.005	-	-	0.008	-	-	-	-	-	0.008

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43	P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types	Item Number / Title [DODIC]: E76900 / ROCKET, Motor 5 in, MK22 MOD 4 f/MICLIC [J143]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	57.290	-	-	-	-	-	18.290	-	-	18.356	-	-	-	-	-	18.356

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43			P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types				Item Number / Title [DODIC]: E76900 / ROCKET, Motor 5 in, MK22 MOD 4 f/MICLIC [J143]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2020	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2022	890	17,785.12	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2021	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Sep 2022	892	18,835.36	Y		
PROPELLANT N-5		2020	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Sep 2020	62,138	15.43	Y		
PROPELLANT N-5		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2021	62,277	15.74	Y		
EC INHIBITING TAPE		2020	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Jun 2020	2,331	61.34	Y		
EC INHIBITING TAPE		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Jun 2021	2,336	63.17	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army				Date: February 2020						
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43			P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types				Item Number / Title [DODIC]: E76900 / ROCKET, Motor 5 in, MK22 MOD 4 f/MICLIC [J143]			

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2020												Fiscal Year 2021												BALANCE		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020												Calendar Year 2021												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L		A U G	S E P
LOAD, ASSEMBLE, PACK (LAP)																															
	1	2020	ARMY	890	0	890																							890		
	1	2021	ARMY	892	0	892																							892		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43										P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types										Item Number / Title [DODIC]: E76900 / ROCKET, Motor 5 in, MK22 MOD 4 f/MICLIC [J143]									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2022															Fiscal Year 2023															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022															Calendar Year 2023															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
LOAD, ASSEMBLE, PACK (LAP)																																					
	1	2020	ARMY	890	0	890	-	-	-	-	-	-	500	390																				0			
	1	2021	ARMY	892	0	892	-	-	-	-	-	-	-	-																				0			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 43		P-1 Line Item Number / Title: 0442EA0800 / Mines & Clearing Charges, All Types
		Item Number / Title [DODIC]: E76900 / ROCKET, Motor 5 in, MK22 MOD 4 f/MICLIC [J143]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TO BE SELECTED - TBS01	150	500	1,000	8	8	24	32	6	6	18	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 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 43: Mines **P-1 Line Item Number / Title:** 0612E76740 / Close Terrain Shaping Obstacle

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

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	150	200	150	-	-	500
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	-	4.995	-	4.995	30.369	47.953	37.963	10.989	-	132.269
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	4.995	-	4.995	30.369	47.953	37.963	10.989	-	132.269
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	4.995	-	4.995	30.369	47.953	37.963	10.989	-	132.269

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

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	202.460	239.765	253.087	-	-	264.538

Description:

This budget line includes Close Terrain Shaping Obstacle, All Types.

(F78310) This item is landmine policy compliant in accordance with the U.S. National landmine policy. The Terrain Shaping Obstacle (TSO) Common Munition System is used to disrupt, turn, fix, delay, deter, or deny enemy maneuver. The TSO Capability detects, tracks, targets, and defeats enemy vehicles moving through the obstacle. The TSO Capability creates lethal effects by launching Anti-Vehicular (AV) munitions consisting of high explosives that penetrate the top of the targeted vehicles. The TSO capability denies the enemy terrain and freedom of action in a joint, multi-domain, high-intensity conflict while creating time and space for friendly forces to maneuver within the same battle space. The TSO capability supports Army Modernization Priorities as a critical enabler for soldier lethality and creates targets for long range precision fires within the engagement area. The TSO capability supports U.S. Army Europe (USAREUR) Operational Needs Statement (ONS) # 18-22702. This item is code A approved for service use.

Justification:

FY 2021 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense (DoD) Instruction 3000.04 (Munitions Requirements Process) and Army Regulation (AR) 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

The FY 2021 Total Base dollars in the amount of \$4.995 million supports production facilitization and activities associated with production of the Terrain Shaping Obstacle Common Munition Systems. This is a new start in FY 2021.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 45: Rockets **P-1 Line Item Number / Title:** 2348EA4000 / Shoulder Launched Munitions, All Types

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

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	504.311	21.315	67.704	69.112	0.176	69.288	55.847	33.246	48.086	23.720	-	823.517
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	504.311	21.315	67.704	69.112	0.176	69.288	55.847	33.246	48.086	23.720	-	823.517
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	504.311	21.315	67.704	69.112	0.176	69.288	55.847	33.246	48.086	23.720	-	823.517
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This budget line includes Shoulder Launched Munitions, All Types.

(E36101) Launcher and Cartridge 84MM M136A1 (AT4CS-RS) - The AT4 is the Army's primary shoulder launched, lightweight, anti-armor weapon in support of the joint, multi-domain, high intensity conflicts and near-peer threats. The AT4-Confined Space (CS) weapon is a safety enhanced version of the M136 AT4 Weapon. The AT4-CS is a self-contained weapon consisting of a free-flight, fin-stabilized, rocket packed in an expendable, 1-piece launch tube. The recoilless design permits accurate delivery of the 84mm high explosive Anti-Armor warhead out to 250 meters. The AT4-CS incorporates a safety modification to the propulsion system that significantly reduces the weapon's back blast and launch signature. This will allow the user to safely fire the weapon from a protected area or enclosed space during close combat operations. This item is Code A, approved for service use.

(E36403) CTG, 7.62MM Tracer, F/SUBCAL ADPTR CARL GUSTAF - The 7.62MM 553B Sub-Caliber Adapter is an enabler for Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS) Shoulder Launch Munition system, which is number 81 on the Army's modernization efforts and makes it possible to raise the level of proficiency and reduce training costs to a low level both at the firing range and during live firing exercises. This item is Code A, approved for service use.

(E36404) CTG, Gun, HEDP 502, 84MM CARL GUSTAF (MAAWS) - The HEDP 502 (High Explosive Dual Purpose), 84MM Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS) ammunition is used by rapid response forces that must have the ability to combat many types of threats and is an enabler for Shoulder Launch Munition. The 84MM HEDP 502 supports the Army's modernization priorities in support of the National Defense Strategy. The 84MM HEDP 502 is effective against light-armored vehicles, concrete and brick walls, field fortifications, and bunkers. This item is Code A, approved for service use.

(E36405) CTG, Gun, HE 441D, 84MM CARL GUSTAF (MAAWS) - The HE 441D, 84MM Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS) system is used for combating troops in the open, behind cover, or in slit trenches as well as soft-skinned vehicles and similar types of targets and is an enabler for Shoulder Launch Munition. The 84MM HE 441D supports the Army's modernization priorities in support of the National Defense Strategy. The 84MM HE 441D (High Explosive) can be set for impact or air burst detonation. This item is Code A, approved for service use.

(E36406) CTG, Gun, TGT PRAC-TR 141, 84MM CARL GUSTAF (MAAWS) - The 84 mm TPT 141 (Target Practice Tracer) is the ideal training round for reducing training costs, maintaining readiness and awareness and is an enabler for Shoulder Launch Munition. The 84 mm TPT 141 supports the Army's modernization priorities in support of the National Defense Strategy. This item is Code A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 45: Rockets		P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E36901) ROCKET, PRACTICE, 21MM SUBCALIBER - The 21MM Subcaliber for Shoulder Launched Munitions (SLM) simulates the firing of unguided shoulder fired munitions and is an enabler for Shoulder Launch Munition. The 21MM Subcaliber supports the Army's modernization priorities in support of the National Defense Strategy. The 21MM SUBCALIBER training round simulates the tactical munitions flight trajectory, but with less noise and back blast. It is currently used by Navy and Marine Corps to simulate the M72 Light Anti-tank Weapon System (LAW). It has also been adapted to the M141 Bunker Defeat Munition (BDM) and issued in New Equipment Training (NET)/Mobile Training Teams (MTT). This item is Code A, approved for service use.</p> <p>(E88401) BUNKER DEFEAT MUNITION (BDM) - The Bunker Defeat Munition (BDM) is a single-shot, disposable, shoulder launched rocket propelled munition used to defeat earth and timber field fortifications (bunkers) out to 250 meters utilized in support of the joint, multi-domain, high intensity conflict and near-peer threats. The system is also capable of defeating lightly armored vehicles and breaches masonry walls using its 83 millimeter high explosive, dual-purpose rocket. The item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 45: Rockets **P-1 Line Item Number / Title:** 2348EA4000 / Shoulder Launched Munitions, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E36101 / MUNITION, 84mm Shldr Lnchd, AT-4CS(Confined Space) [CA30]	P-5a, P-21	A		- / 156.189	- / 0.802	- / 47.974	- / 34.192	- / -	- / 34.192
P-5	E36403 / CTG, 7.62mm w/Tracer f/SUBCAL ADPTR553B CARLGSTF [A254]		A		- / 1.000	- / -	- / 0.176	- / -	- / 0.176	- / 0.176
P-5	E36404 / CTG, 84mm Gun, HEDP 502, CARLGSTF (MAAWS) [CA21]	P-5a, P-21	A		- / 6.000	- / 3.320	- / 1.497	- / 7.188	- / -	- / 7.188
P-5	E36405 / CTG, 84mm Gun, HE 441D IM, CARLGSTF (MAAWS) [CA27]		A		- / 5.389	- / 0.992	- / 1.000	- / 0.993	- / -	- / 0.993
P-5	E36406 / CTG, 84mm Gun, TGT PRAC-TR 141, CARLGSTF (MAAWS) [CA10]		A		- / 4.900	- / 0.104	- / 0.497	- / 0.991	- / -	- / 0.991
P-5	E36901 / ROCKET, 21mm Subcaliber Practice Trainer, f/SLM [HA21]		A		- / 7.508	- / 0.244	- / 2.402	- / 1.960	- / -	- / 1.960
P-5	E88401 / MUNITION, 83mm Bunker Defeat(BDM), Rkt&Lnchr, M141 [HA08]	P-5a, P-21	A		- / 323.325	- / 15.853	- / 14.158	- / 23.788	- / -	- / 23.788
P-40	Total Gross/Weapon System Cost				- / 504.311	- / 21.315	- / 67.704	- / 69.112	- / 0.176	- / 69.288

*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 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD)-approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base dollars in the amount of \$69.112 million supports the procurement of seven Shoulder Launched Munitions items.

FY 2021 Total Overseas Contingency Operations (OCO) dollars in the amount of \$0.176 million support the enduring COCOM requirement for procurement of 68,750 Rounds to deter potential adversaries and support the European Deterrence Initiative.

(E36101) Launcher and Cartridge 84MM M136A1 (AT4CS-RS) - This is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goal. FY 2021 Base procurement dollars in the amount of \$34.192 million supports the procurement of 12,014 Rounds.
Type Classification Date: 2009

(E36403) CTG, 7.62MM TRACER 553 F/SUBCAL ADAPTR CARL GUSTAF - This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Overseas Contingency Operations (OCO) dollars in the amount of \$0.176 million support the enduring COCOM requirement for procurement of 68,750 Rounds to deter potential adversaries and support the European Deterrence Initiative.
Type Classification Date: 2017

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 45: Rockets		P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E36404) CTG, Gun, HEDP 502, 84MM CARL GUSTAF (MAAWS) - This is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goal. FY 2021 Base procurement dollars in the amount of \$7.188 million supports the procurement of 3,509 Rounds. Type Classification Date: 2017</p> <p>(E36405) CTG, Gun, HE 441D, 84MM CARL GUSTAF (MAAWS) - This is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goal. FY 2021 Base procurement dollars in the amount of \$0.993 million supports the procurement of 360 Rounds Type Classification Date: 2017</p> <p>(E36406) CTG, Gun, TGT PRAC-TR 141, 84MM CARL GUSTAF (MAAWS) - This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goal. FY 2021 Base procurement dollars in the amount of \$0.991 million supports the procurement of 1,903 Rounds. Type Classification Date: 2017</p> <p>(E36901) ROCKET, PRACTICE, 21MM SUBCALIBER for Shoulder Launched Munitions (SLM) - This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goal. FY 2021 Base procurement dollars in the amount of 1.960 million supports the procurement of 11,238 Rounds. Type Classification Date: 1993</p> <p>(E88401) BUNKER DEFEAT MUNITION, 83mm Rocket & Launcher, M141 - This is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$23.788 million supports the procurement of 1,320 Rounds. Type Classification Date: 2008</p>		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45		P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types
		Item Number / Title [DODIC]: E36101 / MUNITION, 84mm Shldr Lnchd, AT-4CS(Confined Space) [CA30]

ID Code (A=Service Ready, B=Not Service Ready) : A				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)				156.189	0.802	47.974	34.192	-	34.192
Less PY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)				156.189	0.802	47.974	34.192	-	34.192
Plus CY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)				156.189	0.802	47.974	34.192	-	34.192
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>									
Initial Spares (\$ in Millions)				-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
COMPLETE ROUND ^(†)	16,514.74	9,263	152.976	2,775.56	288	0.799	2,775.56	16,622	46.135	2,685.24	12,014	32.260	-	-	-	2,685.24	12,014	32.260
Subtotal: Recurring Cost	-	-	152.976	-	-	0.799	-	-	46.135	-	-	32.260	-	-	-	-	-	32.260
Subtotal: Hardware Cost	-	-	152.976	-	-	0.799	-	-	46.135	-	-	32.260	-	-	-	-	-	32.260
Support - Production Engineering Cost																		
Production Engineering	-	-	3.213	-	-	0.003	-	-	1.839	-	-	1.932	-	-	-	-	-	1.932
Subtotal: Support - Production Engineering Cost	-	-	3.213	-	-	0.003	-	-	1.839	-	-	1.932	-	-	-	-	-	1.932
Gross/Weapon System Cost	-	-	156.189	-	-	0.802	-	-	47.974	-	-	34.192	-	-	-	-	-	34.192

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45			P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types				Item Number / Title [DODIC]: E36101 / MUNITION, 84mm Shldr Lnchd, AT-4CS(Confined Space) [CA30]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	SAAB DYNAMICS AB / KARLSKOGA, SWEDEN	C / FFP	PICATINNY ARSENAL, NJ	Jun 2019	Jun 2021	288	2,775.56	Y		
COMPLETE ROUND ^(†)		2020	SAAB DYNAMICS AB / KARLSKOGA, SWEDEN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Sep 2021	16,622	2,775.56	Y		
COMPLETE ROUND ^(†)		2021	SAAB DYNAMICS AB / KARLSKOGA, SWEDEN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Sep 2022	12,014	2,685.24	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45		P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types
		Item Number / Title [DODIC]: E36101 / MUNITION, 84mm Shldr Lnchd, AT-4CS(Confined Space) [CA30]

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2019												Fiscal Year 2020												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
Prior Years Deliveries: 9263																															
1	2019	ARMY		.288	.000	.288																							.288		
1	2019	MC (†)		7.686	.000	7.686																							7.686		
1	2019	Total		7.974	.000	7.974																							7.974		
1	2020	ARMY		16.622	.000	16.622																							16.622		
1	2020	MC (†)		3.702	.000	3.702																							3.702		
1	2020	Total		20.324	.000	20.324																							20.324		
1	2021	ARMY		12.014	.000	12.014																							12.014		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45										P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types										Item Number / Title [DODIC]: E36101 / MUNITION, 84mm Shldr Lnchd, AT-4CS(Confined Space) [CA30]									

Cost Elements <i>(Units in Thousands)</i>				Fiscal Year 2021													Fiscal Year 2022													B A L A N C E			
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021													Calendar Year 2022													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P		
COMPLETE ROUND																																	
Prior Years Deliveries: 9263																																	
1	2019	ARMY		.288	.000	.288	-	-	-	-	-	-	-	-	-	.288	-															.000	
1	2019	MC (†)		7.686	.000	7.686	-	-	-	-	-	-	-	-	-	4.899	2.787															.000	
1	2019	Total		7.974	.000	7.974	-	-	-	-	-	-	-	-	-	5.187	2.787	-	-	-	-	-	-	-	-	-	-	-	-	-	.000		
1	2020	ARMY		16.622	.000	16.622	-	-	-	-	-	-	-	-	-	-	-	1.298	4.403	3.400	3.400	3.400	3.400	.721							.000		
1	2020	MC (†)		3.702	.000	3.702	-	-	-	-	-	-	-	-	-	-	-	3.702	-	-	-	-	-	-							.000		
1	2020	Total		20.324	.000	20.324	-	-	-	-	-	-	-	-	-	-	-	5.000	4.403	3.400	3.400	3.400	3.400	.721	-	-	-	-	-	-	.000		
1	2021	ARMY		12.014	.000	12.014																									7.014		

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45										P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types										Item Number / Title [DODIC]: E36101 / MUNITION, 84mm Shldr Lnchd, AT-4CS(Confined Space) [CA30]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2023															Fiscal Year 2024															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023															Calendar Year 2024															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
COMPLETE ROUND																																					
Prior Years Deliveries: 9263																																					
1	2019	ARMY		.288	.288	.000																															.000
1	2019	MC (†)		7.686	7.686	.000																															.000
1	2019	Total		7.974	7.974	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
1	2020	ARMY		16.622	16.622	.000																															.000
1	2020	MC (†)		3.702	3.702	.000																															.000
1	2020	Total		20.324	20.324	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
1	2021	ARMY		12.014	5.000	7.014	5.000	2.014																													.000
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45		P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types
Item Number / Title [DODIC]: E36101 / MUNITION, 84mm Shldr Lnchd, AT-4CS(Confined Space) [CA30]		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	SAAB DYNAMICS AB - KARLSKOGA, SWEDEN	500	5,000	7,000	8	8	24	32	6	6	18	24

(‡) 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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45	P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types	Item Number / Title [DODIC]: E36403 / CTG, 7.62mm w/Tracer f/ SUBCAL ADPTR553B CARLGSTF [A254]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	1.000	-	0.176	-	0.176	0.176
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1.000	-	0.176	-	0.176	0.176
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1.000	-	0.176	-	0.176	0.176

(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																		
COMPLETE ROUND	-	-	1.000	-	-	-	2.68	58,279	0.156	-	-	-	2.56	68,750	0.176	2.56	68,750	0.176
<i>Subtotal: Recurring Cost</i>	-	-	1.000	-	-	-	-	-	0.156	-	-	-	-	-	0.176	-	-	0.176
<i>Subtotal: Hardware Cost</i>	-	-	1.000	-	-	-	-	-	0.156	-	-	-	-	-	0.176	-	-	0.176
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.020	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	0.020	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	1.000	-	-	-	-	-	0.176	-	-	-	-	-	0.176	-	-	0.176

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45	P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types	Item Number / Title [DODIC]: E36404 / CTG, 84mm Gun, HEDP 502, CARLGSTF (MAAWS) [CA21]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	6.000	3.320	1.497	7.188	-	7.188
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	6.000	3.320	1.497	7.188	-	7.188
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	6.000	3.320	1.497	7.188	-	7.188

(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																		
COMPLETE ROUND ^(†)	-	-	4.719	2,485.34	1,227	3.050	2,485.34	546	1.357	1,880.33	3,509	6.598	-	-	-	1,880.33	3,509	6.598
<i>Subtotal: Recurring Cost</i>	-	-	<i>4.719</i>	-	-	<i>3.050</i>	-	-	<i>1.357</i>	-	-	<i>6.598</i>	-	-	-	-	-	<i>6.598</i>
<i>Subtotal: Hardware Cost</i>	-	-	4.719	-	-	3.050	-	-	1.357	-	-	6.598	-	-	-	-	-	6.598
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.084	-	-	0.086	-	-	0.033	-	-	0.060	-	-	-	-	-	0.060
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.084	-	-	0.086	-	-	0.033	-	-	0.060	-	-	-	-	-	0.060
Support - Production Engineering Cost																		
Production Engineering	-	-	1.197	-	-	0.185	-	-	0.107	-	-	0.530	-	-	-	-	-	0.530
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.197	-	-	0.185	-	-	0.107	-	-	0.530	-	-	-	-	-	0.530
Gross/Weapon System Cost	-	-	6.000	-	-	3.320	-	-	1.497	-	-	7.188	-	-	-	-	-	7.188

Remarks:
Production Engineering increased due to change in planned procurement and reflects the pro-rated share for the family of Shoulder Launched support.

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45			P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types				Item Number / Title [DODIC]: E36404 / CTG, 84mm Gun, HEDP 502, CARLGSTF (MAAWS) [CA21]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	SAAB DYNAMICS AB / KARLSKOGA, SWEDEN	Option / FFP	PICATINNY ARSENAL, NJ	Jun 2019	Jun 2020	1,227	2,485.34	Y		
COMPLETE ROUND ^(†)		2020	SAAB DYNAMICS AB / KARLSKOGA, SWEDEN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2021	546	2,485.34	Y		
COMPLETE ROUND ^(†)		2021	SAAB DYNAMICS AB / KARLSKOGA, SWEDEN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2022	3,509	1,880.33	Y		

^(†) indicates the presence of a P-21

Remarks:
Production Engineering increased due to change in planned procurement and reflects the pro-rated share for the family of Shoulder Launched Munitions support.

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Exhibit P-21, Production Schedule: PB 2021 Army													Date: February 2020																
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45						P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types												Item Number / Title [DODIC]: E36404 / CTG, 84mm Gun, HEDP 502, CARLGSTF (MAAWS) [CA21]											

Cost Elements (Units in Each)						Fiscal Year 2019												Fiscal Year 2020												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
	1	2019	ARMY	1,227	0	1,227																							977		
	1	2019	MC (†)	3,659	0	3,659																							3,659		
	1	2019	Total	4,886	0	4,886																						4,636			
	1	2020	ARMY	546	0	546																							546		
	1	2020	MC (†)	726	0	726																							726		
	1	2020	Total	1,272	0	1,272																						1,272			
	1	2021	ARMY	3,509	0	3,509																							3,509		
	1	2021	MC (†)	1,696	0	1,696																							1,696		
	1	2021	Total	5,205	0	5,205																							5,205		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45										P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types										Item Number / Title [DODIC]: E36404 / CTG, 84mm Gun, HEDP 502, CARLGSTF (MAAWS) [CA21]									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2021															Fiscal Year 2022															BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021															Calendar Year 2022															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
COMPLETE ROUND																																					
1		2019	ARMY	1,227	250	977	-	977																					0								
1		2019	MC (†)	3,659	0	3,659	-	3,659																					0								
1	2019	Total		4,886	250	4,636	-	4,636	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0								
1		2020	ARMY	546	0	546	-	-	-	-	304	-	-	242															0								
1		2020	MC (†)	726	0	726	-	-	-	-	726	-	-	-															0								
1	2020	Total		1,272	0	1,272	-	-	-	-	1,030	-	-	242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0								
1		2021	ARMY	3,509	0	3,509					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0									
1		2021	MC (†)	1,696	0	1,696					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0									
1	2021	Total		5,205	0	5,205					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0									
											O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45		P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types
Item Number / Title [DODIC]: E36404 / CTG, 84mm Gun, HEDP 502, CARLGSTF (MAAWS) [CA21]		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	SAAB DYNAMICS AB - KARLSKOGA, SWEDEN	10,000	30,000	50,000	8	8	15	23	6	6	12	18

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

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

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

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45	P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types	Item Number / Title [DODIC]: E36405 / CTG, 84mm Gun, HE 441D IM, CARLGSTF (MAAWS) [CA27]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	5.389	0.992	1.000	0.993	-	0.993
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	5.389	0.992	1.000	0.993	-	0.993
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	5.389	0.992	1.000	0.993	-	0.993

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	4,294.12	997	4.281	1,620.29	480	0.778	2,400.80	378	0.908	2,496.83	360	0.899	-	-	-	2,496.83	360	0.899
<i>Subtotal: Recurring Cost</i>	-	-	4.281	-	-	0.778	-	-	0.908	-	-	0.899	-	-	-	-	-	0.899
<i>Subtotal: Hardware Cost</i>	-	-	4.281	-	-	0.778	-	-	0.908	-	-	0.899	-	-	-	-	-	0.899
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.091	-	-	0.092	-	-	0.026	-	-	0.021	-	-	-	-	-	0.021
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.091	-	-	0.092	-	-	0.026	-	-	0.021	-	-	-	-	-	0.021
Support - Production Engineering Cost																		
Production Engineering	-	-	1.017	-	-	0.122	-	-	0.066	-	-	0.073	-	-	-	-	-	0.073
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.017	-	-	0.122	-	-	0.066	-	-	0.073	-	-	-	-	-	0.073
Gross/Weapon System Cost	-	-	5.389	-	-	0.992	-	-	1.000	-	-	0.993	-	-	-	-	-	0.993

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45						P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types						Item Number / Title [DODIC]: E36406 / CTG, 84mm Gun, TGT PRAC-TR 141, CARLGSTF (MAAWS) [CA10]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO		FY 2021 Total	
Procurement Quantity (<i>Units in Each</i>)				-		-			-			-			-		-	
Gross/Weapon System Cost (<i>\$ in Millions</i>)				4.900		0.104			0.497			0.991			-		0.991	
Less PY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Net Procurement (P-1) (<i>\$ in Millions</i>)				4.900		0.104			0.497			0.991			-		0.991	
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Total Obligation Authority (<i>\$ in Millions</i>)				4.900		0.104			0.497			0.991			-		0.991	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)				-		-			-			-			-		-	
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	-	-	4.026	420.25	19	0.008	420.25	1,040	0.437	479.71	1,903	0.913	-	-	-	479.71	1,903	0.913
<i>Subtotal: Recurring Cost</i>	-	-	<i>4.026</i>	-	-	<i>0.008</i>	-	-	<i>0.437</i>	-	-	<i>0.913</i>	-	-	-	-	-	<i>0.913</i>
<i>Subtotal: Hardware Cost</i>	-	-	4.026	-	-	0.008	-	-	0.437	-	-	0.913	-	-	-	-	-	0.913
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.034	-	-	0.035	-	-	0.003	-	-	0.005	-	-	-	-	-	0.005
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	<i>0.034</i>	-	-	<i>0.035</i>	-	-	<i>0.003</i>	-	-	<i>0.005</i>	-	-	-	-	-	<i>0.005</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	0.840	-	-	0.061	-	-	0.057	-	-	0.073	-	-	-	-	-	0.073
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.840</i>	-	-	<i>0.061</i>	-	-	<i>0.057</i>	-	-	<i>0.073</i>	-	-	-	-	-	<i>0.073</i>
Gross/Weapon System Cost	-	-	4.900	-	-	0.104	-	-	0.497	-	-	0.991	-	-	-	-	-	0.991

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45						P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types						Item Number / Title [DODIC]: E36901 / ROCKET, 21mm Subcaliber Practice Trainer, f/SLM [HA21]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO		FY 2021 Total	
Procurement Quantity (<i>Units in Each</i>)				-		-			-			-			-		-	
Gross/Weapon System Cost (<i>\$ in Millions</i>)				7.508		0.244			2.402			1.960			-		1.960	
Less PY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Net Procurement (P-1) (<i>\$ in Millions</i>)				7.508		0.244			2.402			1.960			-		1.960	
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Total Obligation Authority (<i>\$ in Millions</i>)				7.508		0.244			2.402			1.960			-		1.960	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)				-		-			-			-			-		-	
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 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																		
Complete Round	360.53	19,005	6.852	155.64	385	0.060	158.65	14,232	2.258	161.92	11,238	1.820	-	-	-	161.92	11,238	1.820
<i>Subtotal: Recurring Cost</i>	-	-	6.852	-	-	0.060	-	-	2.258	-	-	1.820	-	-	-	-	-	1.820
<i>Subtotal: Hardware Cost</i>	-	-	6.852	-	-	0.060	-	-	2.258	-	-	1.820	-	-	-	-	-	1.820
Support - Production Engineering Cost																		
Production Engineering	-	-	0.656	-	-	0.184	-	-	0.144	-	-	0.140	-	-	-	-	-	0.140
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.656	-	-	0.184	-	-	0.144	-	-	0.140	-	-	-	-	-	0.140
Gross/Weapon System Cost	-	-	7.508	-	-	0.244	-	-	2.402	-	-	1.960	-	-	-	-	-	1.960

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45	P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types	Item Number / Title [DODIC]: E88401 / MUNITION, 83mm Bunker Defeat(BDM), Rkt&Lnchr, M141 [HA08]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	323.325	15.853	14.158	23.788	-	23.788
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	323.325	15.853	14.158	23.788	-	23.788
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	323.325	15.853	14.158	23.788	-	23.788

(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																		
BUNKER DEFEAT MUNITION (BDM) ^(†)	86,302.05	3,721	321.130	15,894.89	996	15.831	16,534.40	757	12.517	16,865.10	1,320	22.262	-	-	-	16,865.10	1,320	22.262
<i>Subtotal: Recurring Cost</i>	-	-	321.130	-	-	15.831	-	-	12.517	-	-	22.262	-	-	-	-	-	22.262
<i>Subtotal: Hardware Cost</i>	-	-	321.130	-	-	15.831	-	-	12.517	-	-	22.262	-	-	-	-	-	22.262
Support - Production Engineering Cost																		
Production Engineering	-	-	2.195	-	-	0.022	-	-	1.641	-	-	1.526	-	-	-	-	-	1.526
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	2.195	-	-	0.022	-	-	1.641	-	-	1.526	-	-	-	-	-	1.526
Gross/Weapon System Cost	-	-	323.325	-	-	15.853	-	-	14.158	-	-	23.788	-	-	-	-	-	23.788

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45			P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types				Item Number / Title [DODIC]: E88401 / MUNITION, 83mm Bunker Defeat(BDM), Rkt&Lnchr, M141 [HA08]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
BUNKER DEFEAT MUNITION (BDM) ^(†)		2019	NAMMO TALLEY INC / MESA, AZ	C / FFP	PICATINNY ARSENAL, NJ	Dec 2019	Mar 2021	996	15,894.89	Y		
BUNKER DEFEAT MUNITION (BDM) ^(†)		2020	NAMMO TALLEY INC / MESA, AZ	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Jun 2021	757	16,534.40	Y		
BUNKER DEFEAT MUNITION (BDM) ^(†)		2021	NAMMO TALLEY INC / MESA, AZ	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Jun 2022	1,320	16,865.10	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45										P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types										Item Number / Title [DODIC]: E88401 / MUNITION, 83mm Bunker Defeat(BDM), Rkt&Lnchr, M141 [HA08]									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2020															Fiscal Year 2021															B A L A N C E				
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 9	BAL D U E A S O F 1 O C T	Calendar Year 2020															Calendar Year 2021																	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P									
BUNKER DEFEAT MUNITION (BDM)																																							
Prior Years Deliveries: 3721																																							
	1	2019	ARMY	996	0	996			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	696	300					0
	1	2020	ARMY	757	0	757																													700	57			0
	1	2021	ARMY	1,320	0	1,320																																	1,320
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P									

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45										P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types										Item Number / Title [DODIC]: E88401 / MUNITION, 83mm Bunker Defeat(BDM), Rkt&Lnchr, M141 [HA08]									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022														Fiscal Year 2023														BALANCE		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022														Calendar Year 2023															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						
BUNKER DEFEAT MUNITION (BDM)																																				
Prior Years Deliveries: 3721																																				
	1	2019	ARMY	996	996	0																														0
	1	2020	ARMY	757	757	0																														0
	1	2021	ARMY	1,320	0	1,320	-	-	-	-	-	-	-	-	-	700	620																			0
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45	P-1 Line Item Number / Title: 2348EA4000 / Shoulder Launched Munitions, All Types	Item Number / Title [DODIC]: E88401 / MUNITION, 83mm Bunker Defeat(BDM), Rkt&Lnchr, M141 [HA08]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NAMMO TALLEY INC - MESA, AZ	100	700	1,400	8	8	18	26	6	6	15	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).

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 45: Rockets **P-1 Line Item Number / Title:** 3246E37300 / Rocket, Hydra 70, All Types

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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	612.244	275.685	250.453	125.915	33.880	159.795	88.507	147.482	100.696	78.649	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	612.244	275.685	250.453	125.915	33.880	159.795	88.507	147.482	100.696	78.649	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	612.244	275.685	250.453	125.915	33.880	159.795	88.507	147.482	100.696	78.649	Continuing	Continuing

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

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

Description:

The Aviation Rocket and Small Guided Munition Product Office is the executive procurement agent for all services and Foreign Military customers, for all variants of aviation rockets. This budget line procures all aviation rockets and small guided munition types in support of Army operational, training and war reserve requirements. The systems provide combat overmatch capability and ensures the availability of munitions to support combat operations. Aviation rockets and small guided munitions are used on manned and unmanned platforms by Army, Navy, Air Force, Special Operations and Foreign Military aircraft. The unguided systems perform a number of roles including anti-materiel, anti-personnel, air-to-ground suppression and illumination. The guided systems are used to provide increased accuracy over the unguided munitions in precision strikes against lightly armored and soft point targets enabling better conformance to restricted rules of engagement. This Hydra-70 rocket funding supports the entire aviation rocket system and small guided munitions to include resolution of obsolescence, safety, insensitive munitions, reliability, weapon integration activities, test sets, engineering changes, production issues, lifetime buys of obsolete components and guidance section testing and repair kits.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 45: Rockets **P-1 Line Item Number / Title:** 3246E37300 / Rocket, Hydra 70, All Types

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	E37412 / AMMO-Hydra, Aviation Rocket Procurement, Unguided	P-5a, P-21			- / 427.054	- / 123.368	- / 74.243	- / 125.915	- / 27.543	- / 153.458
P-5	E37413 / Aviation Rocket Procurement, Guided	P-5a			- / 185.190	- / 152.317	- / 176.210	- / -	- / 6.337	- / 6.337
P-40	Total Gross/Weapon System Cost				- / 612.244	- / 275.685	- / 250.453	- / 125.915	- / 33.880	- / 159.795

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Base procurement dollars in the amount of \$125.915 million will procure 65,024 unguided Hydra-70 Rockets and 0 guided Hydra-70 Rockets.

FY 2021 Overseas Contingency Operations (OCO) procurement dollars in the amount of \$33.880 million will procure 18,223 unguided Hydra-70 Rockets and 182 guided Hydra-70 Rockets.

The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of 2.75 rockets.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45		P-1 Line Item Number / Title: 3246E37300 / Rocket, Hydra 70, All Types
		Item Number / Title [DODIC]: E37412 / AMMO-Hydra, Aviation Rocket Procurement, Unguided

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	427.054	123.368	74.243	125.915	27.543	153.458
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	427.054	123.368	74.243	125.915	27.543	153.458
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	427.054	123.368	74.243	125.915	27.543	153.458

(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)
Flyaway Cost																		
Recurring Cost																		
Complete Round(†)	990.14	342,697	339.318	1,119.31	91,240	102.126	717.44	28,322	20.319	969.20	65,024	63.021	1,238.76	18,223	22.574	1,028.21	83,247	85.595
Engineering Services	-	-	2.038	-	-	2.018	-	-	2.322	-	-	2.632	-	-	-	-	-	2.632
<i>Subtotal: Recurring Cost</i>	-	-	341.356	-	-	104.144	-	-	22.642	-	-	65.653	-	-	22.574	-	-	88.227
<i>Subtotal: Flyaway Cost</i>	-	-	341.356	-	-	104.144	-	-	22.642	-	-	65.653	-	-	22.574	-	-	88.227
Support - Industrial Facilities Cost																		
Radford Army Ammunition Plant (AAP)	-	-	37.213	-	-	12.641	-	-	45.517	-	-	30.998	-	-	4.969	-	-	35.967
<i>Subtotal: Support - Industrial Facilities Cost</i>	-	-	37.213	-	-	12.641	-	-	45.517	-	-	30.998	-	-	4.969	-	-	35.967
Support - Production Engineering Cost																		
Production Engineering	-	-	36.731	-	-	3.125	-	-	2.902	-	-	15.076	-	-	-	-	-	15.076
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	36.731	-	-	3.125	-	-	2.902	-	-	15.076	-	-	-	-	-	15.076
Support - Program Management Cost																		
Government Management	-	-	11.753	-	-	3.458	-	-	3.182	-	-	14.188	-	-	-	-	-	14.188
<i>Subtotal: Support - Program Management Cost</i>	-	-	11.753	-	-	3.458	-	-	3.182	-	-	14.188	-	-	-	-	-	14.188
Gross/Weapon System Cost	-	-	427.054	-	-	123.368	-	-	74.243	-	-	125.915	-	-	27.543	-	-	153.458

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45	P-1 Line Item Number / Title: 3246E37300 / Rocket, Hydra 70, All Types	Item Number / Title [DODIC]: E37412 / AMMO-Hydra, Aviation Rocket Procurement, Unguided
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
<p>Remarks: Base funding procures lower cost M274 training round, whereas OCO funding procures more costly wartime variants.</p> <p>Support - Production Engineering Cost and Support - Program Management Cost are shared between E37412 / AMMO-Hydra, Aviation Rocket Procurement, Unguided and E37413 / Aviation Rocket Procurement, Guided baby lines based on an apportionment percentage, therefore fluctuate based on funding distribution between the two baby lines.</p> <p>Due to Total Munitions Requirement for the guided rocket being met with FY20 procurement, strategy to replenish expenditures with OCO funding has been adopted. This strategy shifts majority of the burden for Support - Production Engineering Cost and Support - Program Management Cost onto the Unguided baby line.</p> <p>Support - Industrial Facilities Cost is shared between Army, Navy, Air Force, and Foreign Military Sales based on an apportionment percentage, therefore fluctuate based on annual procurement apportionment.</p> <p>(t) indicates the presence of a P-5a</p>		

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45			P-1 Line Item Number / Title: 3246E37300 / Rocket, Hydra 70, All Types				Item Number / Title [DODIC]: E37412 / AMMO-Hydra, Aviation Rocket Procurement, Unguided				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round ^(†)		2019	General Dynamics / Williston, VT	C / FFP	Redstone Arsenal, AL	May 2020	Nov 2021	91,240	1,119.31	Y		Aug 2018
Complete Round ^(†)		2020	General Dynamics / Williston, VT	C / FFP	Redstone Arsenal, AL	May 2020	Jun 2022	28,322	717.44	Y		Aug 2018
Complete Round ^(†)		2021	General Dynamics / Williston, VT	C / FFP	Redstone Arsenal, AL	May 2021	Nov 2022	65,024	969.20	Y		Aug 2018

^(†) indicates the presence of a P-21

Remarks:

- QTY EA for delivery schedule.
- Contractor minimum sustainment rate for the total of all variants is 100,000 rockets annually.
- FY19 is new competitive contract award with 4 option years.

- Other services and FMS customers are shown on the P-21 delivery schedule.

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Exhibit P-21, Production Schedule: PB 2021 Army														Date: February 2020															
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45										P-1 Line Item Number / Title: 3246E37300 / Rocket, Hydra 70, All Types										Item Number / Title [DODIC]: E37412 / AMMO-Hydra, Aviation Rocket Procurement, Unguided									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2020														Fiscal Year 2021														B A L A N C E
O C C O #	M F R Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 1 9	B A L D U E A S O F 1 O C T	Calendar Year 2020														Calendar Year 2021														
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
Complete Round																																		
Prior Years Deliveries: 342697																																		
1	2019	AF (‡)	88.581	.000	88.581																								88.581					
1	2019	ARMY	91.240	.000	91.240																								91.240					
1	2019	NAVY (‡)	8.245	.000	8.245																								8.245					
1	2019	Total	188.066	.000	188.066																								188.066					
1	2020	AF (‡)	65.139	.000	65.139																								65.139					
1	2020	ARMY	28.322	.000	28.322																								28.322					
1	2020	Total	93.461	.000	93.461																								93.461					
1	2021	ARMY	65.024	.000	65.024																								65.024					

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Exhibit P-21, Production Schedule: PB 2021 Army																Date: February 2020																	
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45										P-1 Line Item Number / Title: 3246E37300 / Rocket, Hydra 70, All Types										Item Number / Title [DODIC]: E37412 / AMMO-Hydra, Aviation Rocket Procurement, Unguided													

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2022												Fiscal Year 2023												BALANCE				
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022												Calendar Year 2023															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P			
Complete Round																																		
Prior Years Deliveries: 342697																																		
1	2019	AF (†)	88.581	.000	88.581	-	11.357	11.357	11.357	11.357	11.357	11.357	11.357	11.357	9.082																			.000
1	2019	ARMY	91.240	.000	91.240	-	11.698	11.698	11.698	11.698	11.698	11.698	11.698	11.698	9.354																			.000
1	2019	NAVY (†)	8.245	.000	8.245	-	1.058	1.058	1.058	1.058	1.058	1.058	1.058	1.058	.839																			.000
1	2019	Total	188.066	.000	188.066	-	24.113	24.113	24.113	24.113	24.113	24.113	24.113	24.113	19.275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
1	2020	AF (†)	65.139	.000	65.139	-	-	-	-	-	-	-	-	-	3.099	15.510	15.510	15.510	15.510															.000
1	2020	ARMY	28.322	.000	28.322	-	-	-	-	-	-	-	-	-	1.346	6.744	6.744	6.744	6.744															.000
1	2020	Total	93.461	.000	93.461	-	-	-	-	-	-	-	-	-	4.445	22.254	22.254	22.254	22.254	-	-	-	-	-	-	-	-	-	-	-	-	-	.000	
1	2021	ARMY	65.024	.000	65.024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.001	5.956	5.956	5.956	5.956	5.956	5.956	5.956	5.419	5.956	5.956	5.956		.000	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45		P-1 Line Item Number / Title: 3246E37300 / Rocket, Hydra 70, All Types
		Item Number / Title [DODIC]: E37412 / AMMO-Hydra, Aviation Rocket Procurement, Unguided

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	General Dynamics - Williston, VT	100,000	250,000	340,000	7	6	18	24	7	6	18	24

Remarks:

Production rates for Minimum Sustainment Rate (MSR), one eight-hour shift, five days a week (1-8-5) and Maximum MSR are actual quantities.

(‡) 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-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45		P-1 Line Item Number / Title: 3246E37300 / Rocket, Hydra 70, All Types
		Item Number / Title [DODIC]: E37413 / Aviation Rocket Procurement, Guided

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	185.190	152.317	176.210	-	6.337	6.337
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	185.190	152.317	176.210	-	6.337	6.337
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	185.190	152.317	176.210	-	6.337	6.337

(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)
Flyaway Cost																		
Recurring Cost																		
Complete Round ^(†)	22,433.86	7,289	163.520	25,204.20	4,880	122.996	25,244.02	5,422	136.873	-	-	-	22,966.24	182	4.180	22,966.24	182	4.180
Complete Round, Unguided section	655.32	4,720	3.093	1,184.69	4,880	5.781	740.11	5,422	4.013	-	-	-	1,736.43	182	0.316	1,736.43	182	0.316
Engineering Services	-	-	-	-	-	0.253	-	-	0.258	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>166.614</i>	-	-	<i>129.031</i>	-	-	<i>141.144</i>	-	-	-	-	-	<i>4.496</i>	-	-	<i>4.496</i>
<i>Subtotal: Flyaway Cost</i>	-	-	<i>166.614</i>	-	-	<i>129.031</i>	-	-	<i>141.144</i>	-	-	-	-	-	<i>4.496</i>	-	-	<i>4.496</i>
Support - Industrial Facilities Cost																		
Radford Army Ammunition Plant (AAP)	-	-	6.474	-	-	0.536	-	-	11.354	-	-	-	-	-	0.189	-	-	0.189
Equipment Acquisition or Modernization	-	-	3.414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Industrial Facilities Cost</i>	-	-	<i>9.888</i>	-	-	<i>0.536</i>	-	-	<i>11.354</i>	-	-	-	-	-	<i>0.189</i>	-	-	<i>0.189</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	2.985	-	-	11.097	-	-	12.168	-	-	-	-	-	0.809	-	-	0.809
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>2.985</i>	-	-	<i>11.097</i>	-	-	<i>12.168</i>	-	-	-	-	-	<i>0.809</i>	-	-	<i>0.809</i>
Support - Program Management Cost																		
Government Management	-	-	5.703	-	-	11.654	-	-	11.544	-	-	-	-	-	0.843	-	-	0.843

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45	P-1 Line Item Number / Title: 3246E37300 / Rocket, Hydra 70, All Types	Item Number / Title [DODIC]: E37413 / Aviation Rocket Procurement, Guided
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)
<i>Subtotal: Support - Program Management Cost</i>	-	-	5.703	-	-	11.654	-	-	11.544	-	-	-	-	-	0.843	-	-	0.843
Gross/Weapon System Cost	-	-	185.190	-	-	152.317	-	-	176.210	-	-	-	-	-	6.337	-	-	6.337

Remarks:

Support - Production Engineering Cost and Support - Program Management Cost are shared between E37412 / AMMO-Hydra, Aviation Rocket Procurement, Unguided and E37413 / Aviation Rocket Procurement, Guided baby lines based on an apportionment percentage, therefore fluctuate based on funding distribution between the two baby lines.

Due to Total Munitions Requirement for the guided rocket being met with FY20 procurement, strategy to replenish expenditures with OCO funding has been adopted. This strategy shifts majority of the burden for Support - Production Engineering Cost and Support - Program Management Cost onto the Unguided baby line.

Support - Industrial Facilities Cost is shared between Army, Navy, Air Force, and Foreign Military Sales based on an apportionment percentage, therefore fluctuate based on annual procurement apportionment.

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 45			P-1 Line Item Number / Title: 3246E37300 / Rocket, Hydra 70, All Types				Item Number / Title [DODIC]: E37413 / Aviation Rocket Procurement, Guided				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round		2019	BAE Systems / Nashua, NH	SS / FFP	Pax River, MD	Mar 2019	Mar 2020	4,880	25,204.20	N		
Complete Round		2020	BAE Systems / Nashua, NH	SS / FFP	Pax River, MD	Mar 2020	Mar 2021	5,422	25,244.02	N		
Complete Round	✓	2021	BAE Systems / Nashua, NH	SS / FFP	Pax River, MD	Mar 2021	Mar 2022	182	22,966.24	N		

Remarks:
 - QTY EA for delivery schedule.
 - Contract managed by Navy

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition	P-1 Line Item Number / Title: 2420E61000 / CAD/PAD, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	142.363	8.928	7.595	8.891	-	8.891	8.192	7.663	6.599	6.600	-	196.831
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	142.363	8.928	7.595	8.891	-	8.891	8.192	7.663	6.599	6.600	-	196.831
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	142.363	8.928	7.595	8.891	-	8.891	8.192	7.663	6.599	6.600	-	196.831

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

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

Description:

This budget line is for safety critical Cartridge Actuated Devices (CAD) and Propellant Actuated Devices (PAD), which are used on rotary winged Army aircraft. CAD/PADs support aircraft escape, fire suppression, and jettison systems. Items are subject to shelf and service life restrictions and, therefore, require replacement at specified intervals.

CAD/PAD devices are procured in accordance with their shelf/service life and are made up of, but no limited to: MS81-87 Shielded Det Cord; MS94-97 Canopy Egress Assembly; MS91-92 Flexible Det Cord; MT06/DWEA Initiator Cartridge; SP02/03 Det Cord Assembly; WB53/MT20/TY60 Fire Bottle Cartridge; MD66/JM92 Stores Release Cartridge; MJ20 Thruster Assembly and Cartridge; MJ20 Inert Thruster without Cartridge; MJ21 Impulse Cartridge; MU02 Hoist Cutter Cartridge; MU34 Hoist Refire Kit; M514 Hoist Cutter Cartridge; DWGS Cable Cutter Assembly; JM96 Chinook Impulse Cartridge; MD65 Initiator Cartridge - Air Volcano stores release.

This funding line also procures product improvement program (PIP) items for the new Underwater Emergency Egress System (UEES). The UEES items allow safe removal of the Apache canopy system in a submerged water environment and safe activation in a fuel soaked environment without fuel ignition. These items include but are not limited to: JN79-82 Canopy Egress Assembly; XW55 Delay Initiator; and new versions of the SP02/03 Det Cord Assembly and MS82/85 Shielded Det Cord.

CAD/PAD Procurements are awarded by the Navy Contracting Center in Mechanicsburg, PA and the Naval Surface Warfare Center (NSWC) in Indian Head.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition	P-1 Line Item Number / Title: 2420E61000 / CAD/PAD, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

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	EA0003 / CAD/PAD, All Other	P-5a			- / 142.363	- / 8.928	- / 7.595	- / 8.891	- / -	- / 8.891
P-40	Total Gross/Weapon System Cost				- / 142.363	- / 8.928	- / 7.595	- / 8.891	- / -	- / 8.891

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base procurement dollars in the amount of \$8.891 will be used for procurement of Apache Underwater Emergency Egress System components, replenishment of the initiator cartridge for the Blackhawk, and various CAD/PADs that need replacement due to limited shelf life and/or install life. The FY 2021 program is required to assure availability of replacement items when needed or for mandatory "time-change" procedures for already installed devices to avoid grounding aircraft or rendering aircraft partially mission capable. This funding is required to support fleet requirements that take into account the aircraft inventory, maintenance cycle, shelf/install life, procurement lead-times, and expenditures. Due the variability of these factors, actual CAD/PAD end items and the quantities procured may vary.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2420E61000 / CAD/PAD, All Types	Item Number / Title [DODIC]: EA0003 / CAD/PAD, All Other

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	142.363	8.928	7.595	8.891	-	8.891
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	142.363	8.928	7.595	8.891	-	8.891
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	142.363	8.928	7.595	8.891	-	8.891

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

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

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

Cost Elements	Prior Years			FY 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																		
MS81 Shielded Det Cord ^(†)	-	-	-	-	-	-	639.15	300	0.192	-	-	-	-	-	-	-	-	-
MS82 Shielded Det Cord ^(†)	-	-	-	-	-	-	639.15	300	0.192	-	-	-	-	-	-	-	-	-
MS83 Shielded Det Cord ^(†)	-	-	-	-	-	-	639.15	300	0.192	-	-	-	-	-	-	-	-	-
MS85 Shielded Det Cord ^(†)	-	-	-	-	-	-	639.15	300	0.192	-	-	-	-	-	-	-	-	-
MS86 Shielded Det Cord ^(†)	-	-	-	-	-	-	639.15	300	0.192	-	-	-	-	-	-	-	-	-
MS87 Shielded Det Cord ^(†)	-	-	-	-	-	-	639.15	300	0.192	-	-	-	-	-	-	-	-	-
MS82 UEES1 Shielded Det Cord ^(†)	-	-	-	-	-	-	540.75	500	0.270	876.75	210	0.184	-	-	-	876.75	210	0.184
MS82 UEES2 Shielded Det Cord ^(†)	-	-	-	-	-	-	540.75	500	0.270	-	-	-	-	-	-	-	-	-
MS85 UEES1 Shielded Det Cord ^(†)	-	-	-	-	-	-	540.75	500	0.270	876.75	210	0.184	-	-	-	876.75	210	0.184
MS85 UEES2 Shielded Det Cord ^(†)	-	-	-	-	-	-	540.75	500	0.270	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47 **P-1 Line Item Number / Title:** 2420E61000 / CAD/PAD, All Types **Item Number / Title [DODIC]:** EA0003 / CAD/PAD, All Other

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)
JN79 Canopy Egress Assembly ^(†)	8,400.00	120	1.008	21,850.00	12	0.262	8,820.00	155	1.367	11,025.00	100	1.103	-	-	-	11,025.00	100	1.103
JN80 Canopy Egress Assembly ^(†)	8,400.00	120	1.008	21,850.00	12	0.262	8,820.00	155	1.367	11,025.00	100	1.103	-	-	-	11,025.00	100	1.103
JN81 Canopy Egress Assembly ^(†)	8,400.00	120	1.008	21,850.00	12	0.262	-	-	-	11,025.00	100	1.103	-	-	-	11,025.00	100	1.103
JN82 Canopy Egress Assembly ^(†)	8,400.00	120	1.008	21,850.00	12	0.262	-	-	-	11,025.00	100	1.103	-	-	-	11,025.00	100	1.103
XW55 Delay Initiator ^(†)	1,240.00	500	0.620	1,274.60	251	0.320	1,296.90	500	0.648	1,671.08	250	0.418	-	-	-	1,671.08	250	0.418
MJ21 Impulse Cartridge ^(†)	340.00	300	0.102	-	-	-	385.00	250	0.096	-	-	-	-	-	-	-	-	-
MS94 Window Cutting Assembly ^(†)	2,175.00	150	0.326	3,059.76	262	0.802	-	-	-	-	-	-	-	-	-	-	-	-
MS95 Window Cutting Assembly ^(†)	2,400.00	185	0.444	3,059.76	304	0.930	-	-	-	-	-	-	-	-	-	-	-	-
MS96 Window Cutting Assembly ^(†)	2,400.00	165	0.396	3,059.76	304	0.930	-	-	-	-	-	-	-	-	-	-	-	-
MS97 Window Cutting Assembly ^(†)	2,400.00	115	0.276	3,059.76	262	0.802	-	-	-	-	-	-	-	-	-	-	-	-
DWEA Initiator Cartridge ^(†)	-	-	-	798.00	400	0.319	-	-	-	-	-	-	-	-	-	-	-	-
MS92 Canopy Removal FCDC ^(†)	-	-	-	1,040.00	450	0.468	-	-	-	1,144.00	400	0.458	-	-	-	1,144.00	400	0.458
JM96 Chinook Impulse Cartridge ^(†)	-	-	-	500.00	178	0.089	-	-	-	594.00	300	0.178	-	-	-	594.00	300	0.178
TY60 Chinook Fire Bottle Cartridge ^(†)	-	-	-	600.00	225	0.135	-	-	-	-	-	-	-	-	-	-	-	-
SP02/03 UEES Det Cord Assembly ^(†)	-	-	-	988.61	163	0.161	990.00	250	0.248	-	-	-	-	-	-	-	-	-
SP02 UEES 1 ^(†)	-	-	-	-	-	-	-	-	-	973.50	125	0.122	-	-	-	973.50	125	0.122
SP02 UEES 2 ^(†)	-	-	-	-	-	-	-	-	-	973.50	125	0.122	-	-	-	973.50	125	0.122
SP03 UEES 1 ^(†)	-	-	-	-	-	-	-	-	-	973.50	125	0.122	-	-	-	973.50	125	0.122
SP03 UEES 2 ^(†)	-	-	-	-	-	-	-	-	-	973.50	125	0.122	-	-	-	973.50	125	0.122
MS91 Canopy Removal FCDC	-	-	-	-	-	-	-	-	-	1,144.00	400	0.458	-	-	-	1,144.00	400	0.458

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2420E61000 / CAD/PAD, All Types	Item Number / Title [DODIC]: EA0003 / CAD/PAD, All Other

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)
MT06 Initiator JAU-59A	-	-	-	-	-	-	-	-	-	1,086.80	480	0.522	-	-	-	1,086.80	480	0.522
MT20 Ctg Aircraft Fire Extinguisher	-	-	-	-	-	-	-	-	-	412.61	300	0.124	-	-	-	412.61	300	0.124
<i>Subtotal: Recurring Cost</i>	-	-	6.196	-	-	6.005	-	-	5.958	-	-	7.422	-	-	-	-	-	7.422
Non Recurring Cost																		
Prior Years (Multiple DODICs)	-	-	134.922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MJ20/MJ21 Decoupling Project	-	-	0.147	-	-	-	-	-	-	-	-	0.158	-	-	-	-	-	0.158
MD66 PIP for JM92	-	-	-	-	-	-	-	-	-	-	-	0.070	-	-	-	-	-	0.070
JN79-82 Startup Costs	-	-	-	-	-	1.142	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	135.069	-	-	1.142	-	-	-	-	-	0.228	-	-	-	-	-	0.228
Subtotal: Hardware Cost	-	-	141.266	-	-	7.147	-	-	5.958	-	-	7.650	-	-	-	-	-	7.650
Support - Hardware Analysis Cost																		
Hardware Analysis	-	-	0.030	-	-	0.010	-	-	0.050	-	-	0.030	-	-	-	-	-	0.030
<i>Subtotal: Support - Hardware Analysis Cost</i>	-	-	0.030	-	-	0.010	-	-	0.050	-	-	0.030	-	-	-	-	-	0.030
Support - Production Engineering Cost																		
Production Engineering	-	-	1.067	-	-	1.771	-	-	1.587	-	-	1.211	-	-	-	-	-	1.211
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.067	-	-	1.771	-	-	1.587	-	-	1.211	-	-	-	-	-	1.211
Gross/Weapon System Cost	-	-	142.363	-	-	8.928	-	-	7.595	-	-	8.891	-	-	-	-	-	8.891

Remarks:

All CAD/PADs requirements are based are determined by analyzing number of Army aircraft, on-hand inventory, actual expenditures, shelf life, install life, expiration dates, procurement lead times, and projected contract delivery dates. The number of CAD/PADs procured is to ensure adequate assets are available for fleet support and operational readiness.

Footnotes:

- 1) Starting FY 2020, CAD/PAD additionally includes recurring Cost Analysis and Procurement History and Planning details that were not included FY 2019 and prior.
- 2) FY 2019-2021 Hardware Analysis are assessed on two different CAD/PAD end items.
- 3) JN79-81 unit cost increase due to reduced quantity procured and capacity constraints of vendor. Capacity will increase in future years.
- 4) MS82/85 UEES unit cost increase due to updated Navy/vendor estimate.
- 5) Production Engineering funding provided to Naval Surface Warfare Center - Indian Head Explosive Ordnance Disposal Technology Division.

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2420E61000 / CAD/PAD, All Types	Item Number / Title [DODIC]: EA0003 / CAD/PAD, All Other
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
MS81 Shielded Det Cord		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	300	639.15	Y		
MS82 Shielded Det Cord		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	300	639.15	Y		
MS83 Shielded Det Cord		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	300	639.15	Y		
MS85 Shielded Det Cord		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	300	639.15	Y		
MS86 Shielded Det Cord		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	300	639.15	Y		
MS87 Shielded Det Cord		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	300	639.15	Y		
MS82 UEES1 Shielded Det Cord		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	500	540.75	Y		
MS82 UEES1 Shielded Det Cord		2021	TBD / TBD	C / FFP	NAVSUP	Mar 2021	Mar 2022	210	876.75	Y		
MS82 UEES2 Shielded Det Cord		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	500	540.75	Y		
MS85 UEES1 Shielded Det Cord		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	500	540.75	Y		
MS85 UEES1 Shielded Det Cord		2021	TBD / TBD	C / FFP	NAVSUP	Mar 2021	Mar 2022	210	876.75	Y		
MS85 UEES2 Shielded Det Cord		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	500	540.75	Y		
JN79 Canopy Egress Assembly		2019	Pacific Scientific / Hollister, CA	SS / FFP	NAVSUP	Jun 2019	Jun 2020	12	21,850.00	Y		
JN79 Canopy Egress Assembly		2020	Pacific Scientific / Hollister, CA	SS / FFP	NAVSUP	Mar 2020	Mar 2021	155	8,820.00	Y		
JN79 Canopy Egress Assembly		2021	Pacific Scientific / Hollister, CA	SS / FFP	NAVSUP	Mar 2021	Mar 2022	100	11,025.00	Y		
JN80 Canopy Egress Assembly		2019	Pacific Scientific / Hollister, CA	SS / FFP	NAVSUP	Jun 2019	Jun 2020	12	21,850.00	Y		
JN80 Canopy Egress Assembly		2020	Pacific Scientific / Hollister, CA	SS / FFP	NAVSUP	Mar 2020	Mar 2021	155	8,820.00	Y		
JN80 Canopy Egress Assembly		2021	Pacific Scientific / Hollister, CA	SS / FFP	NAVSUP	Mar 2021	Mar 2022	100	11,025.00	Y		
JN81 Canopy Egress Assembly		2019	Pacific Scientific / Hollister, CA	SS / FFP	NAVSUP	Jun 2019	Jun 2020	12	21,850.00	Y		
JN81 Canopy Egress Assembly		2021	Pacific Scientific / Hollister, CA	SS / FFP	NAVSUP	Mar 2021	Mar 2022	100	11,025.00	Y		
JN82 Canopy Egress Assembly		2019	Pacific Scientific / Hollister, CA	SS / FFP	NAVSUP	Jun 2019	Jun 2020	12	21,850.00	Y		
JN82 Canopy Egress Assembly		2021	Pacific Scientific / Hollister, CA	SS / FFP	NAVSUP	Mar 2021	Mar 2022	100	11,025.00	Y		
XW55 Delay Initiator		2019	Pacific Scientific / Hollister, CA	SS / IDIQ	NAVSUP	Jan 2020	Jan 2021	251	1,274.60	Y		
XW55 Delay Initiator		2020	Pacific Scientific / Hollister, CA	SS / IDIQ	NAVSUP	Jan 2020	Jan 2021	500	1,296.90	Y		
MJ21 Impulse Cartridge		2020	Pacific Scientific / Chandler, AZ	SS / FFP	NAVSUP	Mar 2020	Mar 2021	250	385.00	Y		
MS94 Window Cutting Assembly		2019	UTC Aerospace Systems / Fairfield, CA	C / FFP	NAVSUP	Jul 2019	Jul 2020	262	3,059.76	Y		
MS95 Window Cutting Assembly		2019	UTC Aerospace Systems / Fairfield, CA	C / FFP	NAVSUP	Jul 2019	Jul 2020	304	3,059.76	Y		
MS96 Window Cutting Assembly		2019	UTC Aerospace Systems / Fairfield, CA	C / FFP	NAVSUP	Jul 2019	Jul 2020	304	3,059.76	Y		
MS97 Window Cutting Assembly		2019	UTC Aerospace Systems / Fairfield, CA	C / FFP	NAVSUP	Jul 2019	Jul 2020	262	3,059.76	Y		
DWEA Initiator Cartridge		2019	Pacific Scientific / Chandler, AZ	SS / FFP	NAVSUP	Mar 2019	Mar 2020	400	798.00	Y		
MS92 Canopy Removal FCDC		2019	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	450	1,040.00	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2420E61000 / CAD/PAD, All Types	Item Number / Title [DODIC]: EA0003 / CAD/PAD, All Other
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
JM96 Chinook Impulse Cartridge		2019	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	178	500.00	Y		
TY60 Chinook Fire Bottle Cartridge		2019	AMETEK AMERON, LLC / Baldwin Park, CA	C / FFP	NAVSUP	May 2019	May 2020	225	600.00	Y		
SP02/03 UEES Det Cord Assembly		2019	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	163	988.61	Y		
SP02/03 UEES Det Cord Assembly		2020	TBD / TBD	C / FFP	NAVSUP	Mar 2020	Mar 2021	250	990.00	Y		
SP02 UEES 1		2021	TBD / TBD	C / FFP	NAVSUP	Mar 2021	Mar 2022	125	973.50	Y		
SP02 UEES 2		2021	TBD / TBD	C / FFP	NAVSUP	Mar 2021	Mar 2022	125	973.50	Y		
SP03 UEES 1		2021	TBD / TBD	C / FFP	NAVSUP	Mar 2021	Mar 2022	125	973.50	Y		
SP03 UEES 2		2021	TBD / TBD	C / FFP	NAVSUP	Mar 2021	Mar 2022	125	973.50	Y		

Remarks:

All procurement contracts are awarded by Naval Surface Warfare Center (NSWC) at Indian Head. This funding is required to support fleet requirements that take into account the aircraft inventory, maintenance cycle, shelf/install life, procurement lead-times, and expenditures. Due the variability of these factors, actual CAD/PAD end items procured may vary.

Notes:

1) JN79-82 UEES delay is due to capacity constraint of vendor. Mitigated delay by optimizing required procurements on XW55, SP02/03, MS92, and JM96.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	562.855	44.661	51.651	54.043	-	54.043	36.759	27.012	25.611	25.818	-	828.410
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	562.855	44.661	51.651	54.043	-	54.043	36.759	27.012	25.611	25.818	-	828.410
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	562.855	44.661	51.651	54.043	-	54.043	36.759	27.012	25.611	25.818	-	828.410

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

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

Description:

This budget line includes Demolition Munitions, All Types.

(E45404) The M17A1 Receiver, Radio Frequency Remote Activation Munition System (RF-RAMS) is a single use item, which is capable of functioning non electric blasting caps or detonation cord. The M17A1 provides the un-tethered capability to wirelessly function/initiate demolition charges or munitions up to and beyond 5 KM line-of-sight/non line-of-sight, once it receives the correct programmed coded signal from the RF-RAMS transmitter. The Receiver is programmed in the field by an RF-RAMS Transmitter and subsequently responds only to that transmitter. This item is Code A, approved for service use.

(E50601) Charge Demolition Block Comp C-4 1-1/4 LB M112 is the primary demolition explosive used by the U.S. Army. The M112 Demolition Block is used for general demolition and, in particular, for destruction of captured enemy ammunition. The block demolition charge consists of 1-1/4 pounds of composition C-4 plastic explosive packed in a mylar-film bag. Pressure sensitive adhesive tape is provided on one of the rectangular surfaces, allowing quick emplacement by the individual soldier on the object to be destroyed. The explosive may be cut and/or removed from its wrapper and hand molded into a desired shape suited to the target. Upon detonation, the shock wave destroys the target by cutting, breaching or cratering. This item is Code A, approved for service use.

(E50703) Bangalore Torpedo 2.5 FT M1A3 is used to clear paths through barbed wire entanglements and minefields. Bangalore torpedoes are also used for clearing heavy undergrowth of bamboo and may also be used as a cratering charge, especially in connection with shaped charges against reinforced concrete targets. This item is Code A, approved for service use.

(E50800) 1/4 LB TNT (Tri Nitro Toluene) Block Demolition Charge is one of three TNT charges. TNT demolition charges have a high detonating velocity and are particularly well suited to cutting or breaching hard surface materials. When a charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching, or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target. Unlike the 1 pound and 1/2 pound versions, which are rectangular, the 1/4 pound block is issued in a cylindrical, waterproof, olive-drab cardboard container or an alternative plastic cylindrical container. The cardboard container design have metal ends with a threaded cap well in one end. The plastic designs also have one end with a threaded cap well in one end. This item is Code A, approved for service use.

(E51300) 40LB Cratering Demolition Block Charge is a demolition charge designed to destroy roads, bridge abutments, runways, buildings, fortifications and other concrete structures. It uses a low velocity explosive which destroys by a lifting and heaving motion rather than the cutting action of high velocity charges. This item is Code A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E51400) M186 Demolition Charge is a 50 foot roll of flexible explosive. It is 3 inches wide and 1/4 inch thick. It can be easily cut and formed into various shapes and is primarily used as a cutting charge. This item is Code A, approved for service use.</p> <p>(E52000) The M4A1 Selectable Light Weight Attack Munition (SLAM) is a multipurpose munition designed to be readily portable and hand-emplaced against lightly armored vehicles, parked aircraft, wheeled or tracked support vehicles, and ammunition or fuel storage sites. The SLAM can be used either day or night during all weather conditions. Man-in-the-loop is required in all attack modes. The improved M4A1 SLAM has several producibility and safety enhancements; these include charges to the mode/time selector switch, housing base and cover assembly and passive sensor assembly. A battery bleed resistor was added for improved safety. This item is Code A, approved for service use.</p> <p>(E52500) Cap Blasting Electric M6 is used to initiate high explosives. It is initiated by an electrical charge from a blasting machine or other source of electric power. Blasting cap M6 consists of a base charge of Rapid Detonating Explosive (RDX), an intermediate charge of lead azide and an ignition charge of smokeless powder, potassium chlorate and lead salt of dinitro cresol in an aluminum alloy cup. Two 12-foot lead wires, connected by a bridge wire in the ignition charge, extend through a rubber plug assembly in the open end of the cup. This item is Code A, approved for service use.</p> <p>(E53200) Charge Demolition Shaped M3 40 pound is used to blast craters in paved and unpaved roads and to bore holes in metals, masonry or concrete. It contains a 15-inch stand-off, 29.5 pound Comp B main charge and a 0.11 pound Comp A3 booster. This item is Code A, approved for service use.</p> <p>(E54100) Detonating Cord is used to prime and detonate explosive charges. Unlike the time fuze, which burns slowly, detonating cord burns almost instantaneously. It is used to link a series of near simultaneous charges. The Type 1, Class E detonating cord consists of a core of high velocity explosive in a seamless textile tube. The tube is covered with a thin layer of asphalt and sheathed in an outer cover of plastic coated textile. The plastic outer cover is smooth and colored olive drab. This item is Code A, approved for service use.</p> <p>(E56500) Time Blasting Fuze M700 is used to initiate an M7 non-electric blasting cap, which in turn initiates a main charge. It is ignited with an M60 or M81 firing device. The fuze is olive drab with a single yellow band spaced every 18 inches, and a double yellow band spaced every 90 inches to enable the soldier to cut the desired length of fuze without additional measuring tools. The soldier attaches the fuze to the blasting cap with crimping pliers. This item is Code A, Approved for service use.</p> <p>(E59100) CTG, .50cal Blnk Elec Initiated, MK209 Series(EOD) This cartridge is electrical impulsed initiated and used in Explosive Ordnance Disposal (EOD) tools and equipment. This is a training standard item used in training and combat. It is an electrically initiated, gas producing device. It is initiated with an MK1-2 squib in place of the percussion primer. This item is Code A, approved for service use.</p> <p>(E60200) Cutter CTG Actuated 2 Sec Delay M21 is a cartridge actuated device that is used in aerial delivery systems for cargo. It severs a reefing line which allows a parachute to fully deploy. The cutter is installed in a mounting bracket which is attached to the parachute. Major components consist of a case, firing pin assembly, lanyard, knife assembly, delay assembly, and cotter pin. This item is Code A, approved for service use.</p> <p>(E76728) MK 788-0, Main Charge Disrupter (MCD) is a device used to render-safe unexploded ordnance (UXO). Upon initiation, the device attacks and neutralizes the main charge explosive by generating reactions up to and including low-order detonations. It is a non-developmental item (NDI) consisting of an energetic tool (ET), a demolition material interface adapter, and an emplacement stand. The MCD provides EOD with an improved neutralization capability in situations where the use of more traditional methods (attacking the fuzing mechanism or high-order detonation) is not possible or desired. This item is Code B, not approved for service use.</p> <p>(E81302) Cap Blasting Non-Elec, W/30 ft Shock Tube is part of the family of Modernized Demolition Initiators (MDI). It consists of a blasting cap which is factory sealed to a length of shock tube. The tube is activated using an M81 igniter. A shock wave travels the length of the tube, with a delay measured in milliseconds, and ignites the blasting cap which in turn initiates the main charge. The MDI is not susceptible to electrostatic discharge or Radio Frequency (RF) jamming. The 30 foot length is generally used as a linking charge for a series of demolitions. This item is Code A, approved for service use.</p> <p>(E81305) Non-Elec Delay Blast Cap M14 is part of the family of Modernized Demolition Initiators (MDI). This item is used as a branch line to a primed charge or as a transmission line to facilitate the blast wave. The M11 can be used to ignite the M11/M16, M12/M13, M151/M152 or detonating cord. It is a high strength cap (equal to or better than #12 commercial cap) factory crimped to a 30 foot length of shock tube.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>The opposite end has a factory sealed crimp to protect it from moisture. The M11 has two flags; a YELLOW flag (2 meters from the cap) and a RED flag (1 meter from the cap). The M11 also has a special plastic connector (called a "J" hook), which facilitates quick and easy attachment onto a detonating cord (e.g., a ring main). This item is Code A, approved for service use.</p> <p>(E81306) 70 FT Non-Elec Shock Tube Blast Cap M15 is part of the Modernized Demolition Initiators (MDI). The M15 is a non-electric 70 foot length of shock tube with slightly different size factory crimped detonators at each end containing different delay elements. The shorter detonator is a low strength, 25 milliseconds delay designed to initiate other pieces of shock tube in the priming system, while the longer detonator is a high strength, 200 millisecond delay designed to initiate explosives. Both detonators are also slightly larger in diameter than a standard blasting cap and do not fit into a standard cap well. The M15 has two flags; a YELLOW flag (2 meters from the high strength cap) and a RED flag (1 meter from the high strength cap). The M15 also has a special plastic holder attached to the shorter detonator to facilitate connection to other shock tubes. This item is Code A, approved for service use.</p> <p>(E81307) Igniter, Time Fuze and Shock Tube, M81 is part of the family of Modernized Demolition Initiators (MDI). The M81 is a device, hand held by the individual Soldier, with a small primer charge that will activate the M700 Time Fuze as well as a shock tube. It is the primary device for all non-electrical demolition initiation. This item is Code A, approved for service use.</p> <p>(E94100) Demolition Booster Charge M151 is part of the family of Modernized Demolition Initiators (MDI). The M151 booster is a no delay, non-electric insensitive initiation system with a length of 10 feet. It has a solid core, low strength/high velocity detonating cord and a booster, which contains only secondary explosives, with an initiation output equivalent to an M7 Blasting Cap. The M151 is well suited for situations requiring simultaneous initiation and detonation (i.e. beam cutting). Booster explosive sensitivity is comparable to detonating cord, which allows for usage involving burial and pre-priming of the explosive charge. The M151 is suitable as branch lines; however it cannot be used as a main line or ring main. The M151 booster contains a detonating clip and two pentagonal shaped tags on the detonating cord. This item is Code A, approved for service use.</p> <p>(E96200) Booster, Demo Charge M152 is part of the family of Modernized Demolition Initiators (MDI). This item physically represents the actual M152, except it is inert. It is used for training and is reusable. The color of the detonating cord is bronze. The ID tags legibly display "M152 Inert". The blasting cap has four holes drilled on the circumference using a #46-48 drill size to establish an unobstructed view through the cap. These holes are 90 degrees apart. The blasting caps are also labeled "inert" on two sides, opposite each other. This item is Code A, approved for service use.</p> <p>(E99903) Blast Cap, Non-Elec: 500Ft Minitube, M21 is part of the family of Modernized Demolition Initiators (MDI). It consists of an initiating component used to activate standard military explosives and demolition devices. The MDI is not susceptible to electrostatic discharge or Radio Frequency (RF) jamming. This item is Code A, approved for service use.</p> <p>(E99905) Blast Cap, Non-Elec, 1000Ft Minitube, M23 is part of the family of Modernized Demolition Initiators (MDI). It consists of an initiating component used to activate standard military explosives and demolition devices. The MDI is not susceptible to electrostatic discharge or Radio Frequency (RF) jamming. This item is Code A, approved for service use.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition **P-1 Line Item Number / Title:** 2790E55400 / Demolition Munitions, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E45404 / Receiver, Radio Firing-Remote Actv MunSys(RF-RAMS) [MP47]	P-5a	A		- / 13.206	- / 0.005	- / 5.688	- / 3.771	- / -	- / 3.771
P-5	E50601 / CHARGE, Demo Blk Comp C-4 1-1/4 lb, M112 [M023]		A		- / 233.652	- / 2.615	- / 2.439	- / 2.109	- / -	- / 2.109
P-5	E50703 / DEMO KIT, BANGALORE TORPEDO, M1A3 (2.5 foot) [MP03]		A		- / -	- / -	- / 1.429	- / 4.683	- / -	- / 4.683
P-5	E50800 / CHARGE, Demo Blk TNT 1/4 lb [M030]		A		- / 5.935	- / 0.406	- / 1.512	- / -	- / -	- / -
P-5	E51300 / CHARGE, Demo Cratering 40 lb [M039]	P-5a	A		- / 40.560	- / -	- / 0.410	- / 7.962	- / -	- / 7.962
P-5	E51400 / CHARGE, Demo, (50ft), Sheet Explosive, M186 [M060]		A		- / 10.462	- / 2.069	- / 2.421	- / 2.466	- / -	- / 2.466
P-5	E52000 / MUNITION, Selectable Lightweight Attack (SLAM), M4 [MP12]	P-5a, P-21	A		- / 39.892	- / 22.637	- / 14.639	- / 15.777	- / -	- / 15.777
P-5	E52500 / CAP, Blasting Elec, M6 [M130]		A		- / 17.859	- / 0.460	- / 1.703	- / -	- / -	- / -
P-5	E53200 / CHARGE, Demo Shaped 40 lb, M3		A		- / 28.336	- / -	- / -	- / 0.398	- / -	- / 0.398
P-5	E54100 / CORD, Detonating Type 1 [M456]		A		- / 33.842	- / -	- / 2.805	- / 2.524	- / -	- / 2.524
P-5	E56500 / FUZE, Blasting Time, M700 [M670]		A		- / 5.064	- / -	- / 0.600	- / -	- / -	- / -
P-5	E59100 / CTG, .50cal Blink Elec Initiated, MK209 Series(EOD) [SS01]	P-5a	A		- / 3.214	- / 6.001	- / 1.292	- / -	- / -	- / -
P-5	E60200 / CUTTER, Cartridge Actuated, M21, 2 Second Delay [M500]	P-5a	A		- / 38.144	- / -	- / 7.225	- / 4.689	- / -	- / 4.689
P-5	E76728 / Disrupter, Main Charge, MK 788-0 [DWDF]		B		- / 2.949	- / 2.289	- / -	- / -	- / -	- / -
P-5	E81302 / CAP, Blasting Non-Elec, w/30Ft Shock Tube [ML47]		A		- / 6.781	- / 1.658	- / -	- / 1.922	- / -	- / 1.922
P-5	E81305 / CAP BLASTING NON-ELEC, DELAY, M14 [MN06]		A		- / 14.630	- / 0.487	- / -	- / -	- / -	- / -
P-5	E81306 / CAP BLASTING NON-ELEC, DELAY, W/70 FT TUBE, M15 [MN07]		A		- / 3.943	- / 0.168	- / 1.178	- / 1.501	- / -	- / 1.501
P-5	E81307 / IGNITER, Time Fuze and Shock Tube, M81 [MN08]		A		- / 18.188	- / -	- / -	- / 0.340	- / -	- / 0.340
P-5	E94100 / BOOSTER, Demo Charge, M151 [MN68]		A		- / 7.060	- / 0.388	- / -	- / -	- / -	- / -
P-5	E96200 / BOOSTER, DEMO CHARGE M152 INERT [MN75]		A		- / -	- / 0.168	- / -	- / -	- / -	- / -
P-5	E99903 / CAP, Blasting Non-Elec, w/500Ft Minitube, M21 [MN88]	P-5a	A		- / 18.146	- / 2.695	- / 3.421	- / 2.035	- / -	- / 2.035
P-5	E99905 / CAP, Blast, Non-Elec, 1000Ft Minitube, M23 [MN90]		A		- / 20.992	- / 2.615	- / 4.889	- / 3.866	- / -	- / 3.866
P-40	Total Gross/Weapon System Cost				- / 562.855	- / 44.661	- / 51.651	- / 54.043	- / -	- / 54.043

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p> <p>The FY 2021 Total Base dollars in the amount of \$54.043 million supports the procurement of 14 variants of Demolitions.</p> <p>(E45404) M17A1 Receiver, Radio Frequency Remote Activation Munition System (RF-RAMS) This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$3.771 million supports the production of 1,061 M17A1 Receivers, Radio Frequency Remote Activation Munition Systems. TYPE CLASSIFICATION DATE: 2006</p> <p>(E50601) Charge Demo BLK Comp C-4 1-1/4 LB M112 This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$2.109 million supports the production of 41,919 Demolitions Blocks, C-4. TYPE CLASSIFICATION DATE: 1964</p> <p>(E50703) Bangalore Torpedo 2.5 FT M1A3 This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$4.683 million supports the production of 2,593 Bangalore Torpedoes. TYPE CLASSIFICATION DATE: 1958</p> <p>(E50800) 1/4 LB TNT Block Demolition Charge This is a training standard item used in both training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: June 1968</p> <p>(E51300) 40LB Cratering Demolition Block Charge This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$7.962 million supports the production of 5,359 Cratering Demolition Block Charges. TYPE CLASSIFICATION DATE: 1958</p> <p>(E51400) M186 Demolition Charge This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$2.466 million supports the production of 48,387 Demolition Charges. TYPE CLASSIFICATION DATE: 1968</p> <p>(E52000) Selectable Light Weight Attack Munition (SLAM) This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$15.777 million supports the production of 3,361 SLAMs. TYPE CLASSIFICATION DATE: 2011</p> <p>(E52500) Cap, Blasting Electric M6 This is a training standard item used in both training and combat. There is no FY 2021 funding request.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
TYPE CLASSIFICATION DATE: January 1960		
(E53200) Charge Demolition Shaped M3 This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.398 million supports the production of 191 Blasting Caps. This is New Start in FY 2021. TYPE CLASSIFICATION DATE: 1960		
(E54100) Detonating Cord, Type 1 This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$2.524 million supports the production of 5,784,353 Detonating Cords. TYPE CLASSIFICATION DATE: 1958		
(E56500) Time Blasting Fuze M700 This is a training standard item used in both training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: January 1958		
(E59100) CTG, .50cal Blnk Elec Initiated, MK209 Series (EOD) This is a training standard item used in both training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: EOD Item Navy Configured		
(E60200) Cutter CTG Actuated 2 Sec delay M21 This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$4.689 million supports the production of 6,853 Cutters. TYPE CLASSIFICATION DATE: 1980		
(E76728) MK 788-0, Main Charge Disrupter This is a training standard item used in training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: EOD Item Navy Configured		
(E81302) Cap Blasting Non-Electric, W/30 ft Shock Tube is part of the family of Modernized Demolition Initiators. This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$1.922 million supports procurement of 55,701 Blasting Caps. TYPE CLASSIFICATION DATE: April 1996		
(E81305) Non-Elec Delay Blast Cap M14 This is a training standard item used in training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: April 1996		
(E81306) 70 FT Non-Elec Shock Tube Blast Cap M15 This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$1.501 million supports procurement of 52,653 Blasting Caps. TYPE CLASSIFICATION DATE: April 1996		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E81307) Igniter, Time Fuze and Shock Tube, M81 This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.340 million supports procurement of 13,633 Igniters. This is a New Start in FY 2021. TYPE CLASSIFICATION DATE: April 1996</p> <p>(E94100) Demolition Booster Charge M151 This is a training standard item used in training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: April 2000</p> <p>(E96200) Booster, Demo Charge M152 This is a training standard item used in training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: April 2000</p> <p>(E99903) Blast Cap, Non-Elec: 500Ft Minitube, M21 is part of the family of Modern Demolition Initiators (MDI). This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$2.035 million supports production of 27,500 Blasting Caps. TYPE CLASSIFICATION DATE: April 1996</p> <p>(E99905) Blast Cap, Non-Elec, 1000Ft Minitube, M23 is part of the family of Modern Demolition Initiators (MDI). This is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$3.866 million supports production of 23,900 Blasting Caps. TYPE CLASSIFICATION DATE: April 1996</p>		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E45404 / Receiver, Radio Firing-Remote Actv MunSys(RF-RAMS) [MP47]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	13.206	0.005	5.688	3.771	-	3.771
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	13.206	0.005	5.688	3.771	-	3.771
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	13.206	0.005	5.688	3.771	-	3.771

(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																		
COMPLETE ROUND ^(†)	-	-	11.959	2,333.96	2	0.005	2,364.45	1,718	4.062	2,430.92	1,061	2.579	-	-	-	2,430.92	1,061	2.579
Subtotal: Recurring Cost	-	-	11.959	-	-	0.005	-	-	4.062	-	-	2.579	-	-	-	-	-	2.579
Subtotal: Hardware Cost	-	-	11.959	-	-	0.005	-	-	4.062	-	-	2.579	-	-	-	-	-	2.579
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	0.327	-	-	-	-	-	-	-	-	-
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	0.327	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.247	-	-	0.000	-	-	1.299	-	-	1.192	-	-	-	-	-	1.192
Subtotal: Support - Production Engineering Cost	-	-	1.247	-	-	-	-	-	1.299	-	-	1.192	-	-	-	-	-	1.192
Gross/Weapon System Cost	-	-	13.206	-	-	0.005	-	-	5.688	-	-	3.771	-	-	-	-	-	3.771

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types					Item Number / Title [DODIC]: E45404 / Receiver, Radio Firing-Remote Actv MunSys(RF-RAMS) [MP47]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND		2019	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Jun 2020	Dec 2021	2	2,333.96	Y		
COMPLETE ROUND		2020	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Jun 2020	Dec 2021	1,718	2,364.45	Y		
COMPLETE ROUND		2021	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2022	1,061	2,430.92	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47						P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types						Item Number / Title [DODIC]: E50601 / CHARGE, Demo Blk Comp C-4 1-1/4 lb, M112 [M023]						
ID Code (A=Service Ready, B=Not Service Ready) : A									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)				233.652		2.615			2.439			2.109			-		2.109	
Less PY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Net Procurement (P-1) (\$ in Millions)				233.652		2.615			2.439			2.109			-		2.109	
Plus CY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Total Obligation Authority (\$ in Millions)				233.652		2.615			2.439			2.109			-		2.109	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (\$ in Millions)				-		-			-			-			-		-	
Gross/Weapon System Unit Cost (\$ in 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																		
LOAD, ASSEMBLE, PACK (LAP)	-	-	13.282	8.43	54,917	0.463	8.59	52,375	0.450	8.76	41,919	0.367	-	-	-	8.76	41,919	0.367
COMP C-4 CLASS 3	-	-	213.491	19.84	72,490	1.438	20.23	69,134	1.399	20.64	55,332	1.142	-	-	-	20.64	55,332	1.142
<i>Subtotal: Recurring Cost</i>	-	-	226.773	-	-	1.901	-	-	1.848	-	-	1.509	-	-	-	-	-	1.509
<i>Subtotal: Hardware Cost</i>	-	-	226.773	-	-	1.901	-	-	1.848	-	-	1.509	-	-	-	-	-	1.509
Support - Production Engineering Cost																		
Production Engineering	-	-	6.871	-	-	0.711	-	-	0.589	-	-	0.594	-	-	-	-	-	0.594
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	6.871	-	-	0.711	-	-	0.589	-	-	0.594	-	-	-	-	-	0.594
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.008	-	-	0.003	-	-	0.002	-	-	0.005	-	-	-	-	-	0.005
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.008	-	-	0.003	-	-	0.002	-	-	0.005	-	-	-	-	-	0.005
Gross/Weapon System Cost	-	-	233.652	-	-	2.615	-	-	2.439	-	-	2.109	-	-	-	-	-	2.109

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47						P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types						Item Number / Title [DODIC]: E50703 / DEMO KIT, BANGALORE TORPEDO, M1A3 (2.5 foot) [MP03]						
ID Code (A=Service Ready, B=Not Service Ready) : A									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)				-		-			1.429			4.683			-		4.683	
Less PY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Net Procurement (P-1) (\$ in Millions)				-		-			1.429			4.683			-		4.683	
Plus CY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Total Obligation Authority (\$ in Millions)				-		-			1.429			4.683			-		4.683	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (\$ in Millions)				-		-			-			-			-		-	
Gross/Weapon System Unit Cost (\$ in 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																		
COMPLETE ROUND	-	-	-	-	-	-	1,561.68	754	1.178	1,592.92	2,593	4.130	-	-	-	1,592.92	2,593	4.130
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	1.178	-	-	4.130	-	-	-	-	-	4.130
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	1.178	-	-	4.130	-	-	-	-	-	4.130
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	0.200	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.200	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.051	-	-	0.541	-	-	-	-	-	0.541
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	0.051	-	-	0.541	-	-	-	-	-	0.541
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-	0.012
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-	0.012
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	1.429	-	-	4.683	-	-	-	-	-	4.683
Remarks: FY2021 production engineering increase due to increase in planned procurement quantities.																		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
		Item Number / Title [DODIC]: E50800 / CHARGE, Demo Blk TNT 1/4 lb [M030]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	5.935	0.406	1.512	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	5.935	0.406	1.512	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	5.935	0.406	1.512	-	-	-

(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																		
COMPLETE ROUND	-	-	5.935	7.84	2,070	0.016	7.99	128,392	1.026	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	5.935	-	-	0.016	-	-	1.026	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	5.935	-	-	0.016	-	-	1.026	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	0.075	-	-	-	-	-	-	-	-	-
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	0.075	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.390	-	-	0.406	-	-	-	-	-	-	-	-	-
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	0.390	-	-	0.406	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	-
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	5.935	-	-	0.406	-	-	1.512	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
		Item Number / Title [DODIC]: E51300 / CHARGE, Demo Cratering 40 lb [M039]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	40.560	-	0.410	7.962	-	7.962
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	40.560	-	0.410	7.962	-	7.962
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	40.560	-	0.410	7.962	-	7.962

(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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	13.100	-	-	-	548.07	304	0.167	564.54	5,359	3.025	-	-	-	564.54	5,359	3.025
COMP B TYPE I GRADE A ^(†)	-	-	17.632	-	-	-	13.52	11,072	0.150	13.79	195,174	2.691	-	-	-	13.79	195,174	2.691
ALUMINUM POWDER FLAKED ^(†)	-	-	1.241	-	-	-	3.27	3,213	0.011	3.57	56,644	0.202	-	-	-	3.57	56,644	0.202
COMP D-2 ^(†)	-	-	8.072	-	-	-	89.21	768	0.069	91.00	13,537	1.232	-	-	-	91.00	13,537	1.232
<i>Subtotal: Recurring Cost</i>	-	-	40.045	-	-	-	-	-	0.395	-	-	7.151	-	-	-	-	-	7.151
<i>Subtotal: Hardware Cost</i>	-	-	40.045	-	-	-	-	-	0.395	-	-	7.151	-	-	-	-	-	7.151
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	-	-	-	0.182	-	-	-	-	-	0.182
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.182	-	-	-	-	-	0.182
Support - Production Engineering Cost																		
Production Engineering	-	-	0.515	-	-	-	-	-	0.015	-	-	0.622	-	-	-	-	-	0.622
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.515	-	-	-	-	-	0.015	-	-	0.622	-	-	-	-	-	0.622
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.007	-	-	-	-	-	0.007

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E51300 / CHARGE, Demo Cratering 40 lb [M039]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.007	-	-	-	-	-	0.007
Gross/Weapon System Cost	-	-	40.560	-	-	-	-	-	0.410	-	-	7.962	-	-	-	-	-	7.962

Remarks:
FY2021 production engineering increase due to increase in planned procurement quantities.

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types					Item Number / Title [DODIC]: E51300 / CHARGE, Demo Cratering 40 lb [M039]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2020	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Sep 2021	304	548.07	Y		
LOAD, ASSEMBLE, PACK (LAP)		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Jun 2022	5,359	564.54	Y		
COMP B TYPE I GRADE A		2020	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPOUR, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	11,072	13.52	Y		
COMP B TYPE I GRADE A		2021	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPOUR, TN	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	195,174	13.79	Y		
ALUMINUM POWDER FLAKED		2020	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	3,213	3.27	Y		
ALUMINUM POWDER FLAKED		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	56,644	3.57	Y		
COMP D-2		2020	TO BE SELECTED / TBS01	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2020	Jun 2020	768	89.21	Y		
COMP D-2		2021	TO BE SELECTED / TBS01	Option / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2021	Jun 2021	13,537	91.00	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E51400 / CHARGE, Demo, (50ft), Sheet Explosive, M186 [M060]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	10.462	2.069	2.421	2.466	-	2.466
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	10.462	2.069	2.421	2.466	-	2.466
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	10.462	2.069	2.421	2.466	-	2.466

(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																		
Complete Round	201.92	47,055	9.501	27.46	58,108	1.596	28.27	73,018	2.064	43.15	48,387	2.088	-	-	-	43.15	48,387	2.088
<i>Subtotal: Recurring Cost</i>	-	-	9.501	-	-	1.596	-	-	2.064	-	-	2.088	-	-	-	-	-	2.088
<i>Subtotal: Hardware Cost</i>	-	-	9.501	-	-	1.596	-	-	2.064	-	-	2.088	-	-	-	-	-	2.088
Support - Acceptance Testing Cost																		
First Article Test	-	-	0.190	-	-	0.183	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.190	-	-	0.183	-	-	-	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Production Qualification Test	-	-	-	-	-	0.021	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	0.021	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.761	-	-	0.266	-	-	0.355	-	-	0.375	-	-	-	-	-	0.375
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.761	-	-	0.266	-	-	0.355	-	-	0.375	-	-	-	-	-	0.375
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.010	-	-	0.003	-	-	0.002	-	-	0.003	-	-	-	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.010	-	-	0.003	-	-	0.002	-	-	0.003	-	-	-	-	-	0.003

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E51400 / CHARGE, Demo, (50ft), Sheet Explosive, M186 [M060]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	10.462	-	-	2.069	-	-	2.421	-	-	2.466	-	-	-	-	-	2.466

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E52000 / MUNITION, Selectable Lightweight Attack (SLAM), M4 [MP12]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	39.892	22.637	14.639	15.777	-	15.777
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	39.892	22.637	14.639	15.777	-	15.777
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	39.892	22.637	14.639	15.777	-	15.777

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
Complete Round ^(†)	-	-	37.711	3,953.64	4,813	19.029	4,030.14	3,178	12.808	4,113.37	3,361	13.825	-	-	-	4,113.37	3,361	13.825
Subtotal: Recurring Cost	-	-	37.711	-	-	19.029	-	-	12.808	-	-	13.825	-	-	-	-	-	13.825
Subtotal: Hardware Cost	-	-	37.711	-	-	19.029	-	-	12.808	-	-	13.825	-	-	-	-	-	13.825
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	1.576	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	1.576	-	-	-	-	-	-	-	-	-	-	-	-
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	-	-	-	0.300	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Engineering Change Proposals Cost	-	-	-	-	-	0.300	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	2.181	-	-	1.732	-	-	1.831	-	-	1.952	-	-	-	-	-	1.952
Subtotal: Support - Production Engineering Cost	-	-	2.181	-	-	1.732	-	-	1.831	-	-	1.952	-	-	-	-	-	1.952
Gross/Weapon System Cost	-	-	39.892	-	-	22.637	-	-	14.639	-	-	15.777	-	-	-	-	-	15.777

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types				Item Number / Title [DODIC]: E52000 / MUNITION, Selectable Lightweight Attack (SLAM), M4 [MP12]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round ^(†)		2019	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Jun 2021	4,813	3,953.64	Y		
Complete Round ^(†)		2020	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Jun 2021	3,178	4,030.14	Y		
Complete Round ^(†)		2021	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2022	3,361	4,113.37	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
		Item Number / Title [DODIC]: E52000 / MUNITION, Selectable Lightweight Attack (SLAM), M4 [MP12]

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2020												Fiscal Year 2021												B A L A N C E																
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCE PT TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020												Calendar Year 2021																											
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P															
Complete Round																																														
1		2019	ARMY	4,813	0	4,813																							1,000	1,000	1,000	1,000	813													
1		2020	ARMY	3,178	0	3,178																							187	1,000	1,000	991	0													
1		2021	ARMY	3,361	0	3,361																							A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,361
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P																

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47										P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types										Item Number / Title [DODIC]: E52000 / MUNITION, Selectable Lightweight Attack (SLAM), M4 [MP12]									

Cost Elements <i>(Units in Each)</i>							Fiscal Year 2022										Fiscal Year 2023										BALANCE			
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 1	BAL D U E A S O F 1 O C T	Calendar Year 2022										Calendar Year 2023													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y		J U N	J U L	A U G
Complete Round																														
	1	2019	ARMY	4,813	4,000	813	813																							0
	1	2020	ARMY	3,178	3,178	0																								0
	1	2021	ARMY	3,361	0	3,361	-	-	-	-	-	1,000	1,000	1,000	361															0
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
		Item Number / Title [DODIC]: E52000 / MUNITION, Selectable Lightweight Attack (SLAM), M4 [MP12]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TO BE SELECTED - TBS01	500	1,000	2,000	8	8	15	23	6	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020							
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47						P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types						Item Number / Title [DODIC]: E52500 / CAP, Blasting Elec, M6 [M130]								
ID Code (A=Service Ready, B=Not Service Ready) : A									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)				17.859		0.460			1.703			-			-			-		
Less PY Advance Procurement (\$ in Millions)				-		-			-			-			-			-		
Net Procurement (P-1) (\$ in Millions)				17.859		0.460			1.703			-			-			-		
Plus CY Advance Procurement (\$ in Millions)				-		-			-			-			-			-		
Total Obligation Authority (\$ in Millions)				17.859		0.460			1.703			-			-			-		
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																				
Initial Spares (\$ in Millions)				-		-			-			-			-			-		
Gross/Weapon System Unit Cost (\$ in 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																				
Complete Round	27.66	616,048	17.040	-	-	-	32.27	45,396	1.465	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Recurring Cost</i>	-	-	17.040	-	-	-	-	-	1.465	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Hardware Cost</i>	-	-	17.040	-	-	-	-	-	1.465	-	-	-	-	-	-	-	-	-		
Support - Product Improvement Cost																				
Production Verification Test	-	-	0.202	-	-	0.326	-	-	-	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	0.202	-	-	0.326	-	-	-	-	-	-	-	-	-	-	-	-		
Support - Production Engineering Cost																				
Production Engineering	-	-	0.611	-	-	0.134	-	-	0.237	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.611	-	-	0.134	-	-	0.237	-	-	-	-	-	-	-	-	-		
Support - Quality Assurance Cost																				
Quality Assurance	-	-	0.006	-	-	-	-	-	0.001	-	-	-	-	-	-	-	-	-		
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.006	-	-	-	-	-	0.001	-	-	-	-	-	-	-	-	-		
Gross/Weapon System Cost	-	-	17.859	-	-	0.460	-	-	1.703	-	-	-	-	-	-	-	-	-		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
		Item Number / Title [DODIC]: E53200 / CHARGE, Demo Shaped 40 lb, M3

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	28.336	-	-	0.398	-	0.398
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	28.336	-	-	0.398	-	0.398
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	28.336	-	-	0.398	-	0.398

(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																		
LOAD, ASSEMBLE, PACK (LAP)	-	-	28.336	-	-	-	-	-	-	1,064.46	191	0.203	-	-	-	1,064.46	191	0.203
COMP B TYPE I GRADE A	-	-	-	-	-	-	-	-	-	13.79	6,112	0.084	-	-	-	13.79	6,112	0.084
*COMP A-3	-	-	-	-	-	-	-	-	-	2.57	22	*.*.*	-	-	-	2.57	22	*.*.*
<i>Subtotal: Recurring Cost</i>	-	-	28.336	-	-	-	-	-	-	-	-	0.288	-	-	-	-	-	0.288
<i>Subtotal: Hardware Cost</i>	-	-	28.336	-	-	-	-	-	-	-	-	0.288	-	-	-	-	-	0.288
Support - Government Furnished Materials Cost																		
Government Furnished Materials	-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	-	-	-	0.000
<i>Subtotal: Support - Government Furnished Materials Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	-	-	-	0.000
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.110	-	-	-	-	-	0.110
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.110	-	-	-	-	-	0.110
Gross/Weapon System Cost	-	-	28.336	-	-	-	-	-	-	-	-	0.398	-	-	-	-	-	0.398

..* represents funding below \$1,000.00

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47						P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types						Item Number / Title [DODIC]: E54100 / CORD, Detonating Type 1 [M456]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO		FY 2021 Total	
Procurement Quantity (<i>Units in Each</i>)				-		-			-			-			-		-	
Gross/Weapon System Cost (<i>\$ in Millions</i>)				33.842		-			2.805			2.524			-		2.524	
Less PY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Net Procurement (P-1) (<i>\$ in Millions</i>)				33.842		-			2.805			2.524			-		2.524	
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Total Obligation Authority (<i>\$ in Millions</i>)				33.842		-			2.805			2.524			-		2.524	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)				-		-			-			-			-		-	
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 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																		
Complete Round	0.33	98,337,383	32,451	-	-	-	0.36	6,817,701	2,454	0.37	5,784,353	2,140	-	-	-	0.37	5,784,353	2,140
<i>Subtotal: Recurring Cost</i>	-	-	32,451	-	-	-	-	-	2,454	-	-	2,140	-	-	-	-	-	2,140
<i>Subtotal: Hardware Cost</i>	-	-	32,451	-	-	-	-	-	2,454	-	-	2,140	-	-	-	-	-	2,140
Support - Production Engineering Cost																		
Production Engineering	-	-	1,382	-	-	-	-	-	0,348	-	-	0,382	-	-	-	-	-	0,382
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1,382	-	-	-	-	-	0,348	-	-	0,382	-	-	-	-	-	0,382
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0,008	-	-	-	-	-	0,003	-	-	0,002	-	-	-	-	-	0,002
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0,008	-	-	-	-	-	0,003	-	-	0,002	-	-	-	-	-	0,002
Gross/Weapon System Cost	-	-	33,842	-	-	-	-	-	2,805	-	-	2,524	-	-	-	-	-	2,524

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
		Item Number / Title [DODIC]: E56500 / FUZE, Blasting Time, M700 [M670]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	5.064	-	0.600	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	5.064	-	0.600	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	5.064	-	0.600	-	-	-

(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																		
Complete Round	17.22	269,829	4.646	-	-	-	0.59	544,690	0.321	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	4.646	-	-	-	-	-	0.321	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	4.646	-	-	-	-	-	0.321	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.411	-	-	-	-	-	0.276	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.411	-	-	-	-	-	0.276	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.007	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.007	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	5.064	-	-	-	-	-	0.600	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E59100 / CTG, .50cal Blnk Elec Initiated, MK209 Series(EOD) [SS01]

ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)		-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)		3.214	6.001	1.292	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)		-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)		3.214	6.001	1.292	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)		-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)		3.214	6.001	1.292	-	-	-
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (<i>\$ in Millions</i>)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)		-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 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																		
Complete Round ^(t)	170.77	17,271	2,949	116.70	48,063	5,609	118.22	10,013	1,184	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	2,949	-	-	5,609	-	-	1,184	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	2,949	-	-	5,609	-	-	1,184	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.264	-	-	0.392	-	-	0.108	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.264	-	-	0.392	-	-	0.108	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	3.214	-	-	6.001	-	-	1.292	-	-	-	-	-	-	-	-	-

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types					Item Number / Title [DODIC]: E59100 / CTG, .50cal Blnk Elec Initiated, MK209 Series(EOD) [SS01]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round		2019	NAVAL SURFACE WARFARE CENTER / CRANE, IN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2020	48,063	116.70	Y		
Complete Round		2020	NAVAL SURFACE WARFARE CENTER / CRANE, IN	Option / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2021	10,013	118.22	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E60200 / CUTTER, Cartridge Actuated, M21, 2 Second Delay [M500]

ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:					
Resource Summary				Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)				-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)				38.144	-	7.225	4.689	-	4.689
Less PY Advance Procurement (<i>\$ in Millions</i>)				-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)				38.144	-	7.225	4.689	-	4.689
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)				38.144	-	7.225	4.689	-	4.689
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>									
Initial Spares (<i>\$ in Millions</i>)				-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)				-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 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																		
Complete Round ^(t)	-	-	38.144	-	-	-	638.89	10,912	6.972	656.85	6,853	4.501	-	-	-	656.85	6,853	4.501
<i>Subtotal: Recurring Cost</i>	-	-	<i>38.144</i>	-	-	-	-	-	<i>6.972</i>	-	-	<i>4.501</i>	-	-	-	-	-	<i>4.501</i>
<i>Subtotal: Hardware Cost</i>	-	-	38.144	-	-	-	-	-	6.972	-	-	4.501	-	-	-	-	-	4.501
Support - Production Engineering Cost																		
Production Engineering	-	-	0.000	-	-	-	-	-	0.253	-	-	0.188	-	-	-	-	-	0.188
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.000</i>	-	-	-	-	-	<i>0.253</i>	-	-	<i>0.188</i>	-	-	-	-	-	<i>0.188</i>
Gross/Weapon System Cost	-	-	38.144	-	-	-	-	-	7.225	-	-	4.689	-	-	-	-	-	4.689

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types					Item Number / Title [DODIC]: E60200 / CUTTER, Cartridge Actuated, M21, 2 Second Delay [M500]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round		2020	NAVAL SURF WARFARE CNTR / LEONARDTOWN, MD	PO	ROCK ISLAND ARSENAL, IL	Mar 2020	Sep 2021	10,912	638.89	Y		
Complete Round		2021	NAVAL SURF WARFARE CNTR / LEONARDTOWN, MD	PO	ROCK ISLAND ARSENAL, IL	Mar 2021	Jun 2022	6,853	656.85	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E76728 / Disrupter, Main Charge, MK 788-0 [DWDF]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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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)	2.949	2.289	-	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	2.949	2.289	-	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	2.949	2.289	-	-	-	-

(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																		
COMPLETE ROUND	1,376.22	2,028	2.791	257.50	8,533	2.197	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	2.791	-	-	2.197	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	2.791	-	-	2.197	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.158	-	-	0.092	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.158	-	-	0.092	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	2.949	-	-	2.289	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
		Item Number / Title [DODIC]: E81302 / CAP, Blasting Non-Elec, w/30Ft Shock Tube [ML47]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	6.781	1.658	-	1.922	-	1.922
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	6.781	1.658	-	1.922	-	1.922
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	6.781	1.658	-	1.922	-	1.922

(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 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																		
Complete Round	23.41	283,254	6.631	28.22	56,268	1.588	-	-	-	29.38	55,701	1.636	-	-	-	29.38	55,701	1.636
<i>Subtotal: Recurring Cost</i>	-	-	6.631	-	-	1.588	-	-	-	-	-	1.636	-	-	-	-	-	1.636
Subtotal: Hardware Cost	-	-	6.631	-	-	1.588	-	-	-	-	-	1.636	-	-	-	-	-	1.636
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.047	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.047	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.150	-	-	0.023	-	-	-	-	-	0.285	-	-	-	-	-	0.285
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.150	-	-	0.023	-	-	-	-	-	0.285	-	-	-	-	-	0.285
Gross/Weapon System Cost	-	-	6.781	-	-	1.658	-	-	-	-	-	1.922	-	-	-	-	-	1.922

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Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47						P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types						Item Number / Title [DODIC]: E81305 / CAP BLASTING NON-ELEC, DELAY, M14 [MN06]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Procurement Quantity (<i>Units in Each</i>)				-		-		-		-		-		-				
Gross/Weapon System Cost (<i>\$ in Millions</i>)				14.630		0.487		-		-		-		-				
Less PY Advance Procurement (<i>\$ in Millions</i>)				-		-		-		-		-		-				
Net Procurement (P-1) (<i>\$ in Millions</i>)				14.630		0.487		-		-		-		-				
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-		-		-		-		-		-				
Total Obligation Authority (<i>\$ in Millions</i>)				14.630		0.487		-		-		-		-				
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (<i>\$ in Millions</i>)				-		-		-		-		-		-		-		
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)				-		-		-		-		-		-		-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 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																		
Complete Round	17.29	846,096	14.629	10.82	39,431	0.427	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	14.629	-	-	0.427	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	14.629	-	-	0.427	-	-	-	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.035	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.035	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.001	-	-	0.025	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.001	-	-	0.025	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	14.630	-	-	0.487	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E81306 / CAP BLASTING NON-ELEC, DELAY, W/70 FT TUBE, M15 [MN07]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	3.943	0.168	1.178	1.501	-	1.501
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	3.943	0.168	1.178	1.501	-	1.501
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	3.943	0.168	1.178	1.501	-	1.501

(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																		
Complete Round	-	-	3.943	23.33	6,113	0.143	23.74	40,160	0.953	24.27	52,653	1.278	-	-	-	24.27	52,653	1.278
<i>Subtotal: Recurring Cost</i>	-	-	3.943	-	-	0.143	-	-	0.953	-	-	1.278	-	-	-	-	-	1.278
Subtotal: Hardware Cost	-	-	3.943	-	-	0.143	-	-	0.953	-	-	1.278	-	-	-	-	-	1.278
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	0.050	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.050	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.025	-	-	0.174	-	-	0.223	-	-	-	-	-	0.223
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.025	-	-	0.174	-	-	0.223	-	-	-	-	-	0.223
Gross/Weapon System Cost	-	-	3.943	-	-	0.168	-	-	1.178	-	-	1.501	-	-	-	-	-	1.501

Remarks:

Production Engineering costs increased in FY 2021 due to a larger quantity buy. In addition, this item is part of the Modernized Demolitions Initiators family of items with engineering support costs calculated based on quantities and distributed among all items.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E81307 / IGNITER, Time Fuze and Shock Tube, M81 [MN08]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	18.188	-	-	0.340	-	0.340
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	18.188	-	-	0.340	-	0.340
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	18.188	-	-	0.340	-	0.340

(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																		
Complete Round	284.60	60,000	17.076	-	-	-	-	-	-	15.00	13,633	0.204	-	-	-	15.00	13,633	0.204
<i>Subtotal: Recurring Cost</i>	-	-	17.076	-	-	-	-	-	-	-	-	0.204	-	-	-	-	-	0.204
Subtotal: Hardware Cost	-	-	17.076	-	-	-	-	-	-	-	-	0.204	-	-	-	-	-	0.204
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	-	-	-	0.085	-	-	-	-	-	0.085
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.085	-	-	-	-	-	0.085
Support - Production Engineering Cost																		
Production Engineering	-	-	1.112	-	-	-	-	-	-	-	-	0.050	-	-	-	-	-	0.050
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.112	-	-	-	-	-	-	-	-	0.050	-	-	-	-	-	0.050
Gross/Weapon System Cost	-	-	18.188	-	-	-	-	-	-	-	-	0.340	-	-	-	-	-	0.340

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E94100 / BOOSTER, Demo Charge, M151 [MN68]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	7.060	0.388	-	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	7.060	0.388	-	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	7.060	0.388	-	-	-	-

(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																		
COMPLETE ROUND	-	-	7.060	6.68	49,077	0.328	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	7.060	-	-	0.328	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	7.060	-	-	0.328	-	-	-	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.035	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.035	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.025	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.025	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	7.060	-	-	0.388	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E96200 / BOOSTER, DEMO CHARGE M152 INERT [MN75]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	-	0.168	-	-	-	-
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	-	0.168	-	-	-	-
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	-	0.168	-	-	-	-

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

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

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

Cost Elements	Prior Years			FY 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																		
Complete Round	-	-	-	7.59	14,180	0.108	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	0.108	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	-	-	-	0.108	-	-	-	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.035	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.035	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.025	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.025	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-	-	0.168	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types
		Item Number / Title [DODIC]: E99903 / CAP, Blasting Non-Elec, w/500Ft Minitube, M21 [MN88]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	18.146	2.695	3.421	2.035	-	2.035
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	18.146	2.695	3.421	2.035	-	2.035
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	18.146	2.695	3.421	2.035	-	2.035

(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																		
Complete Round ^(†)	453.09	35,240	15.967	56.60	33,477	1.895	61.78	45,556	2.814	63.02	27,500	1.733	-	-	-	63.02	27,500	1.733
<i>Subtotal: Recurring Cost</i>	-	-	15.967	-	-	1.895	-	-	2.814	-	-	1.733	-	-	-	-	-	1.733
Subtotal: Hardware Cost	-	-	15.967	-	-	1.895	-	-	2.814	-	-	1.733	-	-	-	-	-	1.733
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	2.179	-	-	0.800	-	-	0.506	-	-	0.302	-	-	-	-	-	0.302
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	2.179	-	-	0.800	-	-	0.506	-	-	0.302	-	-	-	-	-	0.302
Gross/Weapon System Cost	-	-	18.146	-	-	2.695	-	-	3.421	-	-	2.035	-	-	-	-	-	2.035

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types					Item Number / Title [DODIC]: E99903 / CAP, Blasting Non-Elec, w/500Ft Minitube, M21 [MN88]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round		2019	ENSIGN-BICKFORD AEROSPACE & / SIMSBURY, CT	C / FFP	PICATINNY ARSENAL, NJ	Feb 2019	Feb 2020	33,477	56.60	Y		
Complete Round		2020	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Jun 2021	45,556	61.78	Y		
Complete Round		2021	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2021	Mar 2022	27,500	63.02	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E99905 / CAP, Blast, Non-Elec, 1000Ft Minitube, M23 [MN90]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	20.992	2.615	4.889	3.866	-	3.866
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	20.992	2.615	4.889	3.866	-	3.866
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	20.992	2.615	4.889	3.866	-	3.866

(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																		
Complete Round	731.86	26,080	19,087	83.33	22,830	1,902	135.04	30,105	4,065	137.75	23,900	3,292	-	-	-	137.75	23,900	3,292
<i>Subtotal: Recurring Cost</i>	-	-	19,087	-	-	1,902	-	-	4,065	-	-	3,292	-	-	-	-	-	3,292
Subtotal: Hardware Cost	-	-	19,087	-	-	1,902	-	-	4,065	-	-	3,292	-	-	-	-	-	3,292
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.905	-	-	0.713	-	-	0.723	-	-	0.574	-	-	-	-	-	0.574
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.905	-	-	0.713	-	-	0.723	-	-	0.574	-	-	-	-	-	0.574
Gross/Weapon System Cost	-	-	20.992	-	-	2.615	-	-	4.889	-	-	3.866	-	-	-	-	-	3.866

Remarks:
CAP Blast Non-Elec 1000FT M23 will be a new contract in FY2020.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,129.940	39.904	46.282	28.931	-	28.931	62.916	46.027	45.425	45.646	-	1,445.071
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,129.940	39.904	46.282	28.931	-	28.931	62.916	46.027	45.425	45.646	-	1,445.071
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,129.940	39.904	46.282	28.931	-	28.931	62.916	46.027	45.425	45.646	-	1,445.071

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

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

Description:

This budget line includes Grenades, All Types.

(E00500) GRENADE 66MM VEH LNCHD WHITE SMK SCREENING TNG M82

M82 Simulant Smoke Grenade (G978) is a 66mm projectile trainer fielded to train in the handling, usage and deployment of the M76 infra-red, M81 graphite and brass flake and L8 Red Phosphorus grenades. The M82 contains the same internal and external components of the tactical M76 grenade except for a new fill material (titanium dioxide in place of the brass flake powder) along with a reduction in the amount of black powder in the propellant. The grenade is electrically initiated and propellant-launched to disseminate a visual screen cloud at a distance of about 30m meters away from combat equipped vehicle. This item is code A, approved for service use.

(E31900) FUZE GRENADE HAND PRAC M228

Fuze Grenade Hand Practice M228 is a pyrotechnic delay-igniting fuze (delay time of 4 to 5.5 seconds) for use with the M69 practice grenade body. The assembled grenade is identical in size, shape and weight to the M67 fragmentation hand grenade, and is used to learn and practice grenade throwing skills. The fuze contains a primer and a pyrotechnic delay column. A striker, striker spring, safety lever, safety pin with pull ring, safety clip, and igniter assembly are assembled to the body. This item is Code A, approved for service use.

(E32000) GRENADE HAND FRAG DELAY M67

Grenade Hand Fragmentation Delay M67 consists of a 2.5-inch diameter steel sphere that is designed to burst into numerous fragments when detonated. The grenade body is filled with approximately 5.4 ounces of high explosive, Composition B. Each grenade is fitted with an M213 fuze that initiates the explosive charge 4 to 5.5 seconds after release of the safety lever. The M67 Hand Grenade provides the Warfighter with the capability to conduct pre-mobilization training, and close combat operations. This item is Code A, approved for service use.

(E32200) GRENADE HAND INCENDIARY M14

Grenade Hand Incendiary AN-M14 provides the Warfighter with the capability to destroy weapon caches, artillery pieces, and vehicles by means of a chemical reaction that produces intense heat, called a thermite reaction. In this reaction, powdered aluminum metal and iron oxide react to produce a stream of molten iron and aluminum oxide. This reaction produces a tremendous amount of heat, burning at 2,200 degrees Celsius (3,992 degrees Fahrenheit). Other advantages include its ability to function without an external oxygen source, allowing it to burn underwater. The AN-M14 uses the M201 fuze, which is a pyrotechnic delay fuze.. This item is Code A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E33010) GRENADE HAND OFFENSIVE XM111 XM111 Offensive Hand Grenade consists of 2.6 inch diameter plastic hexagonal body that is designed to provide blast overpressure effective against enemy troops in indoor and close combat environments where fragments are not desired to reduce collateral damage. The body is filled with 6.7oz of PAX-3. Each grenade is fitted with a M213 fuze that initiates the explosive charge 4 to 5.5 seconds after release of safety lever. The XM111 provides the warfighter with the capability to conduct pre-mobilization training and the capability to conduct close combat operations. This item will be Code A, approved for service use upon achieving Full Materiel Release, which is anticipated for 4QFY22.</p>		
<p>(E34001) GRENADE HAND SMOKE GREEN M18 The M18 is an enabler to Soldier Lethality as it provides the Warfighter with a multi-functional capability that provides both effective marking and screening allowing the Unit to be more efficient and effective in combat operations. Grenade Hand Smoke Green M18 is used by the Warfighter for ground-to-air or ground-to-ground signaling while conducting training and combat operations. Each grenade will emit smoke for 50 to 90 seconds. The grenade body is made of thin sheet metal, filled with starter patches and a green smoke composition. The Hand Grenade Fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mix, pyrotechnic delay column, and ignition mixture. Assembled to the body are a striker, striker spring, safety lever, and safety pin with pull ring. This item is Code A, approved for service use.</p>		
<p>(E34002) GRENADE HAND SMOKE YELLOW M18 The M18 is an enabler to Soldier Lethality as it provides the Warfighter with a multi-functional capability that provides both effective marking and screening allowing the Unit to be more efficient and effective in combat operations. Grenade Hand Smoke Yellow M18 is used by the Warfighter for ground-to-air or ground-to-ground signaling while conducting training and combat operations. Each grenade will emit smoke for 50 to 90 seconds. The grenade body is made of thin sheet metal, filled with starter patches and a yellow smoke composition. The Hand Grenade Fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mix, pyrotechnic delay column, and ignition mixture. Assembled to the body are a striker, striker spring, safety lever, and safety pin with pull ring. This item is Code A, approved for service use.</p>		
<p>(E34003) GRENADE HAND SMOKE RED M18 The M18 is an enabler to Soldier Lethality as it provides the Warfighter with a multi-functional capability that provides both effective marking and screening allowing the Unit to be more efficient and effective in combat operations. Grenade Hand Smoke Red M18 is used by the Warfighter for ground-to-air or ground-to-ground signaling while conducting training and combat operations. Each grenade will emit smoke for 50 to 90 seconds. The grenade body is made of thin sheet metal, filled with starter patches and a red smoke composition. The Hand Grenade Fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mix, pyrotechnic delay column, and ignition mixture. Assembled to the body are a striker, striker spring, safety lever, and safety pin with pull ring. This item is Code A, approved for service use.</p>		
<p>(E34004) GRENADE HAND SMOKE VIOLET M18 The M18 is an enabler to Soldier Lethality as it provides the Warfighter with a multi-functional capability that provides both effective marking and screening allowing the Unit to be more efficient and effective in combat operations. Grenade Hand Smoke Violet M18 is used by the Warfighter for ground-to-air or ground-to-ground signaling while conducting training and combat operations. Each grenade will emit smoke for 50 to 90 seconds. The grenade body is made of thin sheet metal, filled with starter patches and a violet smoke composition. The Hand Grenade Fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mix, pyrotechnic delay column and ignition mixture. Assembled to the body are a striker, striker spring, safety lever, and safety pin with pull ring. This item is Code A, approved for service use.</p>		
<p>(E34005) HAND SMOKE VISUAL RESTRICTED TERRAIN M106 The M106 is an enabler to Soldier Lethality as it provides the Warfighter with an instant screening capability which will increase self-protection and maneuver during crucial times allowing the Warfighter to be more efficient and effective in combat operations. Grenade Hand Smoke Visual Restricted M106 rapidly produces a short duration obscurant cloud that provides the Warfighter the capability to obscure the light visible spectrum within restrictive terrain, such as caves and urban structures. It is non-toxic and designed to be safer than current smoke grenades. The fill is non-combustible Titanium Dioxide. This item is code B, not approved for service use.</p>		
<p>(E35800) BODY GRENADE HAND PRAC M69</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>Body, Grenade Hand Practice M69 is a reusable metal fuze body used with the M228 practice hand grenade fuze, which provides a pyrotechnic delay smoke and bang effect to simulate the M67 fragmentation grenade. The assembled grenade (body and fuze) is identical in size, shape and weight to the M67 fragmentation hand grenade and is used to learn and practice grenade throwing skills. This item is Code A, approved for service use.</p> <p>(E35801) BODY GRENADE HAND PRAC XM112 Body, Grenade Hand Practice XM112 is a reusable metal body used with the M228 practice hand grenade fuze, which provides a pyrotechnic delay, smoke and bang effect to simulate the XM111 Offensive Hand Grenade. The assembled grenade (body and fuze) is identical in size, shape and weight to the XM111 Offensive Hand Grenade and is used to learn and practice grenade throwing skills. This item will be Code A, approved for service use upon achieving Full Materiel Release, which is anticipated for 4QFY22.</p> <p>(E69300) GRENADE HAND SMOKE WHITE M83 Grenade Hand Smoke (White) M83 is an enabler to Soldier Lethality as it provides the Warfighter with an effective means to generate white smoke for screening activities while conducting small unit operations enhancing soldier survivability during combat operations. Grenade Hand Smoke (White) M83 provides the Warfighter the capability to generate white smoke for screening activities while conducting small unit operations. It is also used for ground-to-air signaling. This grenade is the tactical replacement for the M8 HC Smoke Grenade, which was found to be carcinogenic. The duration of smoke screen or signal is 25 to 70 seconds, average burn time. The grenade body is a cylinder of thin sheet metal. It is filled with non-toxic smoke mixture topped with a starter patch. The Hand Grenade Fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mix, pyrotechnic delay column, and ignition mixture. Assembled to the body are a striker, striker spring, safety lever, and safety pin with pull ring. This item is Code A, approved for service use.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition

P-1 Line Item Number / Title:
4582E34000 / Grenades, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E00500 / GRENADE 66MM VEH LNCHD WHITE SMK SCREENING TNG M82 [G978]		A		- / 21.077	- / -	- / 8.084	- / 4.081	- / -	- / 4.081
P-5	E31900 / FUZE, Grenade, Hand, Practice, M228 [G878]		A		- / 268.327	- / 4.780	- / 4.900	- / 4.895	- / -	- / 4.895
P-5	E32000 / GRENADE, Hand, Frag, Delay, M67 [G881]		A		- / 338.144	- / 3.689	- / 5.058	- / 3.536	- / -	- / 3.536
P-5	E32200 / GRENADE HAND INCENDIARY M14 [G900]	P-5a	A		- / 13.207	- / -	- / 5.329	- / 6.593	- / -	- / 6.593
P-5	E33010 / GRENADE, Hand, Offensive, XM111		A		- / -	- / 0.939	- / -	- / 5.694	- / -	- / 5.694
P-5	E34001 / GRENADE, Hand, Smoke, Green, M18 [G940]		A		- / 168.968	- / 4.758	- / 2.480	- / -	- / -	- / -
P-5	E34002 / GRENADE, Hand, Smoke, Yellow, M18 [G945]		A		- / 92.227	- / 9.395	- / 2.145	- / -	- / -	- / -
P-5	E34003 / GRENADE, Hand, Smoke, Red, M18	P-5a	A		- / 44.102	- / 7.500	- / -	- / -	- / -	- / -
P-5	E34004 / GRENADE, Hand, Smoke, Violet, M18 [G955]		A		- / 54.382	- / 3.237	- / 0.973	- / 0.988	- / -	- / 0.988
P-5	E34005 / GRENADE, Hand Smoke Visual Restricted Terrain M106 [GG25]	P-5a	B		- / 13.822	- / -	- / 11.289	- / -	- / -	- / -
P-5	E35800 / BODY GRENADE HAND PRAC M69 [G811]		A		- / 2.230	- / 2.483	- / 3.290	- / 1.826	- / -	- / 1.826
P-40a	E35801 / GRENADE, Hand, Body, Practice, Offensive, XM112 [GG38]		A		- / -	- / 0.533	- / 2.734	- / 1.318	- / -	- / 1.318
P-5	E69300 / GRENADE, Hand, Smoke, White, M83 [G982]		A		- / 113.454	- / 2.590	- / -	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / 1,129.940	- / 39.904	- / 46.282	- / 28.931	- / -	- / 28.931

*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 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense (DoD) Instruction 3000.04 (Munitions Requirements Process) and Army Regulation (AR) 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Base procurement dollars in the amount of \$28.931 million supports procurement of eight variants of Grenades.

(E00500) GRENADE 66M VEH LNCHD WHITE SMK SCREENING TNG M82
This is a training unique item not used in combat. FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Total Base dollars in the amount of \$4.081 million supports the procurement of 11,569 grenades.
TYPE CLASSIFICATION DATE: Jul 1992.

(E31900) FUZE GRENADE HAND PRAC M228

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>This is a training unique item not used in combat. FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Total Base dollars in the amount of \$4.895 million supports recapitalization of 945,090 fuzes and the procurement of 176,885 new fuzes. TYPE CLASSIFICATION DATE: March 1971</p> <p>(E32000) GRENADE HAND FRAG DELAY M67 This is a training standard item used in both training and combat. FY 2021 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Total Base dollars in the amount of \$3.536 million supports the procurement of 55,222 grenades. TYPE CLASSIFICATION DATE: March 1970</p> <p>(E32200) GRENADE HAND INCENDIARY M14 This is a training standard item used in both training and combat. FY 2021 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Total Base dollars in the amount of \$6.593 million supports the procurement of 35,120 grenades. TYPE CLASSIFICATION DATE: 1942</p> <p>(E33010) GRENADE HAND OFFENSIVE XM111 This is a training standard item used in both training and combat. FY 2021 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Total Base dollars in the amount of \$5.694 million supports the procurement of 14,661 grenades. Type Classification Standard is projected for 2QFY20. Full Materiel Release is projected for 4QFY22.</p> <p>(E34001) GRENADE HAND SMOKE GREEN M18 This is a training standard item used in both training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: September 1943</p> <p>(E34002) GRENADE HAND SMOKE YELLOW M18 This is a training standard item used in both training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: September 1943</p> <p>(E34003) GRENADE HAND SMOKE RED M18 This is a training standard item used in both training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: September 1943</p> <p>(E34004) GRENADE HAND SMOKE VIOLET M18 This is a training standard item used in both training and in combat. FY 2021 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2021 Total Base dollars in the amount of \$0.988 million supports the procurement of 5,914 grenades. TYPE CLASSIFICATION DATE: September 1943</p> <p>(E34005) HAND SMOKE VISUAL RESTRICTED TERRAIN M106 This is a training standard item used in both training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: April 2008</p> <p>(E35800) BODY GRENADE HAND PRAC M69 This is a training unique item not used in combat. FY 2021 procurement supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Total Base dollars in the amount of \$1.826 million supports the procurement of 117,767 grenades.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
TYPE CLASSIFICATION DATE: March 1971		
(E35801) GRENADE HAND BODY PRACTICE OFFENSIVE XM112 This is a training unique item not used in combat. FY 2021 procurement supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Total Base dollars in the amount of \$1.318 million supports the procurement of 62,534 grenades. Type Classification Standard is projected for 2QFY20. Full Materiel Release for this item is projected for 4QFY22.		
(E69300) GRENADE HAND SMOKE WHITE M83 This is a training standard item used in both training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: July 1994		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E00500 / GRENADE 66MM VEH LNCHD WHITE SMK SCREENING TNG M82 [G978]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	21.077	-	8.084	4.081	-	4.081
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	21.077	-	8.084	4.081	-	4.081
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	21.077	-	8.084	4.081	-	4.081

(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																		
COMPLETE ROUND	-	-	-	-	-	-	248.12	32,005	7.941	253.08	11,569	2.928	-	-	-	253.08	11,569	2.928
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	7.941	-	-	2.928	-	-	-	-	-	2.928
Subtotal: Hardware Cost	-	-	-	-	-	-	-	-	7.941	-	-	2.928	-	-	-	-	-	2.928
Support - Production Engineering Cost																		
Production Engineering	-	-	21.077	-	-	-	-	-	0.143	-	-	1.149	-	-	-	-	-	1.149
Subtotal: Support - Production Engineering Cost	-	-	21.077	-	-	-	-	-	0.143	-	-	1.149	-	-	-	-	-	1.149
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	21.077	-	-	-	-	-	8.084	-	-	4.081	-	-	-	-	-	4.081

Remarks:

Production Engineering increased due to change in planned procurement and reflects the pro-rated share for the family of Grenades support.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E31900 / FUZE, Grenade, Hand, Practice, M228 [G878]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	268.327	4.780	4.900	4.895	-	4.895
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	268.327	4.780	4.900	4.895	-	4.895
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	268.327	4.780	4.900	4.895	-	4.895

(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																		
COMPLETE ROUND	7.20	36,977,487	266.238	9.38	189,290	1.776	10.73	196,580	2.109	10.94	176,885	1.935	-	-	-	10.94	176,885	1.935
Subtotal: Recurring Cost	-	-	266.238	-	-	1.776	-	-	2.109	-	-	1.935	-	-	-	-	-	1.935
Subtotal: Hardware Cost	-	-	266.238	-	-	1.776	-	-	2.109	-	-	1.935	-	-	-	-	-	1.935
Support - Production Engineering Cost																		
Production Engineering	-	-	2.056	-	-	0.655	-	-	0.668	-	-	0.798	-	-	-	-	-	0.798
Subtotal: Support - Production Engineering Cost	-	-	2.056	-	-	0.655	-	-	0.668	-	-	0.798	-	-	-	-	-	0.798
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.034	-	-	0.005	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	0.034	-	-	0.005	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004
Support - Recapitalization Cost																		
Recapitalization	-	-	-	-	-	2.246	-	-	1.982	-	-	2.158	-	-	-	-	-	2.158
Subtotal: Support - Recapitalization Cost	-	-	-	-	-	2.246	-	-	1.982	-	-	2.158	-	-	-	-	-	2.158
Support - Staging and Transportation Cost																		
Staging and Transportation	-	-	-	-	-	0.099	-	-	0.134	-	-	-	-	-	-	-	-	-
Subtotal: Support - Staging and Transportation Cost	-	-	-	-	-	0.099	-	-	0.134	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

Item Number / Title [DODIC]:
E31900 / FUZE, Grenade, Hand,
Practice, M228 [G878]

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	-	-	268.327	-	-	4.780	-	-	4.900	-	-	4.895	-	-	-	-	-	4.895

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E32000 / GRENADE, Hand, Frag, Delay, M67 [G881]

ID Code (A=Service Ready, B=Not Service Ready) : A				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)		338.144	3.689	5.058	3.536	-	3.536
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		338.144	3.689	5.058	3.536	-	3.536
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		338.144	3.689	5.058	3.536	-	3.536
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
COMPLETE GRENADE	31.84	10,360,693	329.884	43.16	47,480	2.049	42.51	90,060	3.828	44.90	55,222	2.479	-	-	-	44.90	55,222	2.479
Subtotal: Recurring Cost	-	-	329.884	-	-	2.049	-	-	3.828	-	-	2.479	-	-	-	-	-	2.479
Subtotal: Hardware Cost	-	-	329.884	-	-	2.049	-	-	3.828	-	-	2.479	-	-	-	-	-	2.479
Support - Production Engineering Cost																		
Production Engineering	-	-	8.201	-	-	1.616	-	-	1.225	-	-	1.051	-	-	-	-	-	1.051
Subtotal: Support - Production Engineering Cost	-	-	8.201	-	-	1.616	-	-	1.225	-	-	1.051	-	-	-	-	-	1.051
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.058	-	-	0.019	-	-	0.004	-	-	0.005	-	-	-	-	-	0.005
Subtotal: Support - Quality Assurance Cost	-	-	0.058	-	-	0.019	-	-	0.004	-	-	0.005	-	-	-	-	-	0.005
Support - Staging and Transportation Cost																		
Staging and Transportation	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Staging and Transportation Cost	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	338.144	-	-	3.689	-	-	5.058	-	-	3.536	-	-	-	-	-	3.536

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E32200 / GRENADE HAND INCENDIARY M14 [G900]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	13.207	-	5.329	6.593	-	6.593
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	13.207	-	5.329	6.593	-	6.593
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	13.207	-	5.329	6.593	-	6.593

(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																		
Load, Assemble, Pack (Lap) ^(†)	0.08	56,000	0.004	-	-	-	132.60	36,460	4.835	135.25	35,120	4.750	-	-	-	135.25	35,120	4.750
FUZE,HAND GRENADE M201 ^(†)	-	-	-	-	-	-	9.64	37,918	0.366	10.04	36,524	0.367	-	-	-	10.04	36,524	0.367
TOP, GREN ^(†)	-	-	-	-	-	-	-	-	-	1.22	37,929	0.046	-	-	-	1.22	37,929	0.046
Grenade, Metal Parts Set ^(†)	0.01	65,000	0.001	-	-	-	2.09	39,377	0.082	-	-	-	-	-	-	-	-	-
BODY, GREN ^(†)	-	-	-	-	-	-	-	-	-	1.22	37,929	0.046	-	-	-	1.22	37,929	0.046
<i>Subtotal: Recurring Cost</i>	-	-	0.005	-	-	-	-	-	5.282	-	-	5.209	-	-	-	-	-	5.209
<i>Subtotal: Hardware Cost</i>	-	-	0.005	-	-	-	-	-	5.282	-	-	5.209	-	-	-	-	-	5.209
Support - Production Engineering Cost																		
Production Engineering	-	-	13.202	-	-	-	-	-	0.047	-	-	1.383	-	-	-	-	-	1.383
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	13.202	-	-	-	-	-	0.047	-	-	1.383	-	-	-	-	-	1.383
Gross/Weapon System Cost	-	-	13.207	-	-	-	-	-	5.329	-	-	6.593	-	-	-	-	-	6.593

Remarks:

Production Engineering increased due to change in planned procurement and reflects the pro-rated share for the family of Grenades support.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E32200 / GRENADE HAND INCENDIARY M14 [G900]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E32200 / GRENADE HAND INCENDIARY M14 [G900]
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Load, Assemble, Pack (Lap)		2020	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	36,460	132.60	Y		
Load, Assemble, Pack (Lap)		2021	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	35,120	135.25	Y		
FUZE,HAND GRENADE M201		2020	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	37,918	9.64	Y		
FUZE,HAND GRENADE M201		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	36,524	10.04	Y		
TOP, GREN		2021	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Nov 2021	37,929	1.22	Y		
Grenade, Metal Parts Set		2020	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	39,377	2.09	Y		
BODY, GREN		2021	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Nov 2021	37,929	1.22	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E33010 / GRENADE, Hand, Offensive, XM111

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	0.939	-	5.694	-	5.694
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	0.939	-	5.694	-	5.694
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	0.939	-	5.694	-	5.694

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

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

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

Cost Elements	Prior Years			FY 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																		
Complete Round	-	-	-	93.64	7,437	0.696	-	-	-	299.39	14,661	4.389	-	-	-	299.39	14,661	4.389
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	0.696	-	-	-	-	-	4.389	-	-	-	-	-	4.389
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	0.696	-	-	-	-	-	4.389	-	-	-	-	-	4.389
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.243	-	-	-	-	-	1.305	-	-	-	-	-	1.305
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.243	-	-	-	-	-	1.305	-	-	-	-	-	1.305
Gross/Weapon System Cost	-	-	-	-	-	0.939	-	-	-	-	-	5.694	-	-	-	-	-	5.694

Remarks:

Hardware costs have increased due to the inclusion of energetic composition of the grenade.

Production Engineering increased due to change in planned procurement and reflects the pro-rated share for the family of Grenades support.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types
		Item Number / Title [DODIC]: E34001 / GRENADE, Hand, Smoke, Green, M18 [G940]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	168.968	4.758	2.480	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	168.968	4.758	2.480	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	168.968	4.758	2.480	-	-	-

(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																		
Load, Assemble, Pack (Lap)	41.99	3,956,627	166.139	46.15	76,626	3.536	57.43	25,363	1.457	-	-	-	-	-	-	-	-	-
FUZE,HAND GRENADE M201	8.33	132,598	1.105	8.57	79,727	0.683	9.63	26,377	0.254	-	-	-	-	-	-	-	-	-
Grenade, Metal Parts Set	1.91	134,698	0.257	1.90	82,793	0.157	2.08	27,392	0.057	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>167.501</i>	-	-	<i>4.377</i>	-	-	<i>1.768</i>	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	<i>167.501</i>	-	-	<i>4.377</i>	-	-	<i>1.768</i>	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.455	-	-	0.375	-	-	0.706	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>1.455</i>	-	-	<i>0.375</i>	-	-	<i>0.706</i>	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.012	-	-	0.006	-	-	0.007	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.012</i>	-	-	<i>0.006</i>	-	-	<i>0.007</i>	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	168.968	-	-	4.758	-	-	2.480	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types
		Item Number / Title [DODIC]: E34002 / GRENADE, Hand, Smoke, Yellow, M18 [G945]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	92.227	9.395	2.145	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	92.227	9.395	2.145	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	92.227	9.395	2.145	-	-	-

(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																		
Load, Assemble, Pack (Lap)	43.09	2,079,372	89.600	47.15	146,728	6.918	58.82	21,654	1.274	-	-	-	-	-	-	-	-	-
FUZE,HAND GRENADE M201	8.37	110,310	0.923	8.57	152,597	1.308	9.63	22,520	0.217	-	-	-	-	-	-	-	-	-
Grenade, Metal Parts Set	1.92	112,552	0.216	1.90	158,466	0.301	2.08	23,386	0.049	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>90.740</i>	-	-	<i>8.527</i>	-	-	<i>1.539</i>	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	<i>90.740</i>	-	-	<i>8.527</i>	-	-	<i>1.539</i>	-	-	-	-	-	-	-	-	-
Support - Non-Recurring Support Cost																		
Value Engineering	-	-	0.090	-	-	0.228	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Non-Recurring Support Cost</i>	-	-	<i>0.090</i>	-	-	<i>0.228</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.379	-	-	0.636	-	-	0.603	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>1.379</i>	-	-	<i>0.636</i>	-	-	<i>0.603</i>	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.018	-	-	0.004	-	-	0.002	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.018</i>	-	-	<i>0.004</i>	-	-	<i>0.002</i>	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E34002 / GRENADE, Hand, Smoke, Yellow, M18 [G945]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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	-	-	92.227	-	-	9.395	-	-	2.145	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types
		Item Number / Title [DODIC]: E34003 / GRENADE, Hand, Smoke, Red, M18

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	44.102	7.500	-	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	44.102	7.500	-	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	44.102	7.500	-	-	-	-

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	44.102	61.01	96,930	5.914	-	-	-	-	-	-	-	-	-	-	-	-
FUZE,HAND GRENADE M201 ^(†)	-	-	-	8.57	100,807	0.864	-	-	-	-	-	-	-	-	-	-	-	-
GRENADE, METAL PARTS SET ^(†)	-	-	-	1.90	104,684	0.199	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>44.102</i>	-	-	<i>6.977</i>	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	<i>44.102</i>	-	-	<i>6.977</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.520	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	<i>0.520</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	<i>0.003</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	44.102	-	-	7.500	-	-	-	-	-	-	-	-	-	-	-	-

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types					Item Number / Title [DODIC]: E34003 / GRENADE, Hand, Smoke, Red, M18				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2019	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	ROCK ISLAND ARSENAL, IL	Dec 2019	Mar 2021	96,930	61.01	Y		
FUZE,HAND GRENADE M201		2019	CHEMRING ORDNANCE, INC. / PERRY, FL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	100,807	8.57	Y		
GRENADE, METAL PARTS SET		2019	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	104,684	1.90	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types
		Item Number / Title [DODIC]: E34004 / GRENADE, Hand, Smoke, Violet, M18 [G955]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	54.382	3.237	0.973	0.988	-	0.988
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	54.382	3.237	0.973	0.988	-	0.988
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	54.382	3.237	0.973	0.988	-	0.988

(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																		
Load, Assemble, Pack (Lap)	44.67	1,190,364	53.170	54.32	46,091	2.504	66.95	9,038	0.605	81.48	5,914	0.482	-	-	-	81.48	5,914	0.482
FUZE,HAND GRENADE M201	8.21	40,766	0.335	8.57	47,935	0.411	9.63	9,399	0.091	10.04	6,150	0.062	-	-	-	10.04	6,150	0.062
TOP, GREN	-	-	-	-	-	-	-	-	-	1.21	6,387	0.008	-	-	-	1.21	6,387	0.008
Grenade, Metal Parts Set	1.91	42,333	0.081	1.90	49,778	0.095	2.08	9,761	0.020	-	-	-	-	-	-	-	-	-
BODY, GREN	-	-	-	-	-	-	-	-	-	1.22	6,387	0.008	-	-	-	1.22	6,387	0.008
<i>Subtotal: Recurring Cost</i>	-	-	53.585	-	-	3.009	-	-	0.716	-	-	0.559	-	-	-	-	-	0.559
<i>Subtotal: Hardware Cost</i>	-	-	53.585	-	-	3.009	-	-	0.716	-	-	0.559	-	-	-	-	-	0.559
Support - Production Engineering Cost																		
Production Engineering	-	-	0.780	-	-	0.226	-	-	0.255	-	-	0.426	-	-	-	-	-	0.426
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.780	-	-	0.226	-	-	0.255	-	-	0.426	-	-	-	-	-	0.426
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.017	-	-	0.001	-	-	0.002	-	-	0.003	-	-	-	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.017	-	-	0.001	-	-	0.002	-	-	0.003	-	-	-	-	-	0.003
Gross/Weapon System Cost	-	-	54.382	-	-	3.237	-	-	0.973	-	-	0.988	-	-	-	-	-	0.988

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E34004 / GRENADE, Hand, Smoke, Violet, M18 [G955]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Remarks: Unit cost for Load, Assemble, Pack (LAP) has increased due to a decreased quantity being procured in FY 2021. Production Engineering increased due to change in planned procurement and reflects the pro-rated share for the family of Grenades support.		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E34005 / GRENADE, Hand Smoke Visual Restricted Terrain M106 [GG25]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	13.822	-	11.289	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	13.822	-	11.289	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	13.822	-	11.289	-	-	-

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

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

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

Cost Elements	Prior Years			FY 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																		
Complete Round ^(t)	-	-	9.696	-	-	-	157.15	69,321	10.894	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	9.696	-	-	-	-	-	10.894	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	9.696	-	-	-	-	-	10.894	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	4.126	-	-	-	-	-	0.395	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	4.126	-	-	-	-	-	0.395	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	13.822	-	-	-	-	-	11.289	-	-	-	-	-	-	-	-	-

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types				Item Number / Title [DODIC]: E34005 / GRENADE, Hand Smoke Visual Restricted Terrain M106 [GG25]					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round		2020	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Mar 2020	Jun 2021	69,321	157.15	Y		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E35800 / BODY GRENADE HAND PRAC M69 [G811]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	2.230	2.483	3.290	1.826	-	1.826
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	2.230	2.483	3.290	1.826	-	1.826
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	2.230	2.483	3.290	1.826	-	1.826

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	-	-	1.730	12.46	183,550	2.287	15.54	179,632	2.791	12.43	117,767	1.464	-	-	-	12.43	117,767	1.464
<i>Subtotal: Recurring Cost</i>	-	-	<i>1.730</i>	-	-	<i>2.287</i>	-	-	<i>2.791</i>	-	-	<i>1.464</i>	-	-	-	-	-	<i>1.464</i>
Subtotal: Hardware Cost	-	-	1.730	-	-	2.287	-	-	2.791	-	-	1.464	-	-	-	-	-	1.464
Support - Production Engineering Cost																		
Production Engineering	-	-	0.493	-	-	0.189	-	-	0.490	-	-	0.358	-	-	-	-	-	0.358
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.493</i>	-	-	<i>0.189</i>	-	-	<i>0.490</i>	-	-	<i>0.358</i>	-	-	-	-	-	<i>0.358</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.007	-	-	0.007	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.007</i>	-	-	<i>0.007</i>	-	-	<i>0.007</i>	-	-	<i>0.004</i>	-	-	-	-	-	<i>0.004</i>
Gross/Weapon System Cost	-	-	2.230	-	-	2.483	-	-	3.290	-	-	1.826	-	-	-	-	-	1.826

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Army														Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47							P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types							Aggregated Items Title: E35801 / GRENADE, Hand, Body, Practice, Offensive, XM112					

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)
GRENADE, Hand, Body, Practice, Offensive, XM112																				
E35801 / GRENADE, Hand, Body, Practice, Offensive, XM112 [GG38]	A		-	-	-	-	-	0.533	-	-	2.734	-	-	1.318	-	-	-	-	-	1.318
Subtotal: GRENADE, Hand, Body, Practice, Offensive, XM112			-	-	-	-	-	0.533	-	-	2.734	-	-	1.318	-	-	-	-	-	1.318
Total			-	-	-	-	-	0.533	-	-	2.734	-	-	1.318	-	-	-	-	-	1.318

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

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E69300 / GRENADE, Hand, Smoke, White, M83 [G982]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	113.454	2.590	-	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	113.454	2.590	-	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	113.454	2.590	-	-	-	-

(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																		
LOAD, ASSEMBLE, PACK (LAP)	272.10	411,430	111.950	33.34	43,777	1.460	-	-	-	-	-	-	-	-	-	-	-	-
FUZE,HAND GRENADE M201	8.56	97,781	0.837	8.57	45,528	0.390	-	-	-	-	-	-	-	-	-	-	-	-
GRENADE, METAL PARTS SET	1.91	211,590	0.404	1.90	47,279	0.090	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>113.191</i>	-	-	<i>1.940</i>	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	<i>113.191</i>	-	-	<i>1.940</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.238	-	-	0.644	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.238</i>	-	-	<i>0.644</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.025	-	-	0.007	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.025</i>	-	-	<i>0.007</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	113.454	-	-	2.590	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	327.350	8.121	18.609	27.036	-	27.036	26.853	13.040	4.193	4.617	-	429.819
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	327.350	8.121	18.609	27.036	-	27.036	26.853	13.040	4.193	4.617	-	429.819
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	327.350	8.121	18.609	27.036	-	27.036	26.853	13.040	4.193	4.617	-	429.819

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

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

Description:

This budget line includes Signals, All Types.

(E42010) Flares And Markers, Watercraft

The marker is launched from high-speed aircraft or helicopters in either day or night to mark the course of enemy submarines in anti-submarine warfare operations. They can be used for any type of air to sea surface marking that are referenced by smoke and flame. This item is Code A, approved for service use.

(E62900) SMOKE POT PRACTICE M8

The M8 Smoke Pot is a five-gallon metal pail containing about 25 pounds of environmentally acceptable smoke mixture. It is initiated by a pyrotechnic delay igniting fuze. After ignition and about a 25-second delay, a dense smoke cloud is produced for screening purposes to conceal troop, vehicle, or other march movements. It is deployed in a similar manner as the service smoke pots, M4 series and M5. It is used by the individual Soldier in squad, company and battalion units. This item is Code A, approved for service use.

(E44600) Signal Kit Personnel Distress Red FP AP/25S-5

The Personnel Distress Signal Kit (Red) is primarily used by downed airmen or others exposed to emergency escape and evasion situations. There are seven (7) red signals in a Kit, one (1) hand fired launcher, and one (1) bandoleer assembly. The signals are propelled by a rocket motor with a time delay and are capable of penetrating foliage. This item is Code A, approved for service use.

(E46500) Signal, Hand Held White Star Cluster M159

The Family of Hand Held Signals are individually launched pyrotechnics used for signaling and illumination. The payload is launched by a small, fin stabilized rocket and reaches a height of 725 feet. The M159 is a white star cluster used primarily for signaling. The payload is a cluster of five flares that burn for approximately 10 seconds. This item is Code A, approved for service use.

(E46700) Signal, Hand Held Red Parachute Flare M126A1

The Family of Hand Held Signals are individually launched pyrotechnics used for signaling and illumination. The payload is launched by a small, fin stabilized rocket and reaches a height of 725 feet. The M126A1 is a red parachute flare used primarily as a distress signal. The flare burns for approximately 30 seconds. This item is Code A, approved for service use.

(E46800) Signal, Hand Held White Parachute Flare M127

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 6038E46900 / Signals, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>The Family of Hand Held Signals are individually launched pyrotechnics used for signaling and illumination. The payload is launched by a small, fin stabilized rocket and reaches a height of 725 feet. The M127A1 is a white parachute flare used primarily for illumination. The flare burns for approximately 30 seconds. This item is Code A, approved for service use.</p> <p>(E47000) Signal, Hand Held Green Star Cluster M125A1 The Family of Hand Held Signals which are individually launched pyrotechnics used for signaling and illumination. The payload is launched by a small, fin stabilized rocket and reaches a height of 725 feet. M125A1 is a green star cluster signal used for signaling and illuminating missions. The payload is a cluster of five flares that burn for approximately 10 seconds. This item is Code A, approved for service use.</p> <p>(E49105) CTG, Impulse, Countermeasure, BBU-35/B The BBU-35/B Impulse Cartridge is used to ignite and/or eject aircraft countermeasure flares, decoys and chaff (M206, M212, M211 and M1/M839/RR170 Series) designed to protect Army helicopters and fixed wing aircraft against Man-portable Air Defense Systems (MANPADS). The BBU-35/B replaces the M796 impulse cartridge used by the Army. The impulse cartridge functions after receiving an electrical signal from the Common Missile Warning System (CMWS). The impulse cartridge produces hot gases that ignites/pushes the flare/decoy payload out of the host aircraft. This item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition

P-1 Line Item Number / Title:
6038E46900 / Signals, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E42010 / Flares and Markers, Watercraft [L580]		A		- / 2.076	- / -	- / 0.744	- / -	- / -	- / -
P-5	E44600 / SIGNAL KIT, Personnel Distress, A/P25S-5 Series [L119]	P-5a, P-21	A		- / 19.184	- / 2.091	- / -	- / 7.734	- / -	- / 7.734
P-5	E46500 / Signal, Hand Held White Star Cluster M159 [L307]		A		- / 31.504	- / 2.403	- / -	- / -	- / -	- / -
P-5	E46700 / Signal, Hand Held Red Parachute Flare M126A1 [LA80]		A		- / 22.789	- / -	- / -	- / 4.235	- / -	- / 4.235
P-5	E46800 / Signal, Hand Held White Parachute Flare M127A1 [L312]	P-5a	A		- / 140.901	- / 1.031	- / 7.549	- / 0.300	- / -	- / 0.300
P-5	E47000 / Signal, Hand Held Green Star Cluster M125A1 [L314]	P-5a	A		- / 52.063	- / 0.724	- / 5.150	- / 5.051	- / -	- / 5.051
P-5	E49105 / CTG, Impulse, Countermeasure, BBU-35/B		A		- / 6.043	- / -	- / -	- / 1.257	- / -	- / 1.257
P-5	E62900 / SMOKE POT, Practice, M8 [K511]	P-5a	A		- / 52.790	- / 1.872	- / 5.166	- / 8.459	- / -	- / 8.459
P-40	Total Gross/Weapon System Cost				- / 327.350	- / 8.121	- / 18.609	- / 27.036	- / -	- / 27.036

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 total Base dollars in the amount of \$27.036 million supports the procurement of six variants of signals.

(E42010) Flares and Markers, Watercraft

This is a training standard item used in both training and combat. The request supports annual training and builds a war reserve inventory in accordance with the Army procurement goals. TYPE CLASSIFICATION DATE: 2011

(E62900) Smoke Pot Practice M8

This is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Requirements procurement dollars in the amount of \$8.459 million supports the procurement of 5,897 smoke pots. TYPE CLASSIFICATION DATE: 1994

(E44600) Signal Kit Personnel Distress Red FP

This is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Requirements procurement dollars in the amount of \$7.734 million supports the procurement of 44,509 Signals. TYPE CLASSIFICATION DATE: 1972

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 6038E46900 / Signals, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E46500) Signal, Hand Held White Star Cluster M159 This is a training standard item used in both training and in combat. The request supports annual training and builds a war reserve inventory in accordance with the Army procurement goals. TYPE CLASSIFICATION DATE: 1983</p> <p>(E46700) Signal, Hand Held Red Parachute Flare M126A1 This is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Requirements procurement dollars in the amount of \$4.235 million supports the procurement of 55,924 Signals. E46700 is a New Start in FY 2021. TYPE CLASSIFICATION DATE: 1983</p> <p>(E46800) Signal, Hand Held White Parachute Flare M127A1 This is a training standard item used both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Requirements procurement dollars in the amount of \$0.300 million supports the procurement of 3,318 Signals. TYPE CLASSIFICATION DATE: 1983</p> <p>(E47000) Signal, Hand Held Green Star Cluster M125A1 This is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Requirements procurement dollars in the amount of \$5.051 million supports the procurement of 72,983 Signals. TYPE CLASSIFICATION DATE: 1983</p> <p>(E49105) CARTRIDGE, IMPULSE, BBU-35/B This is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base Requirements procurement dollars in the amount of \$1.257 million supports the procurement of 411,078 cartridges. E49105 is a New Start in FY 2021. TYPE CLASSIFICATION DATE: May 2008</p>		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E42010 / Flares and Markers, Watercraft [L580]

ID Code (A=Service Ready, B=Not Service Ready) : A				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)		2.076	-	0.744	-	-	-
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		2.076	-	0.744	-	-	-
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		2.076	-	0.744	-	-	-
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
COMPLETE ROUND	-	-	1.594	-	-	-	252.79	1,612	0.407	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	1.594	-	-	-	-	-	0.407	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	1.594	-	-	-	-	-	0.407	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.189	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.189	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.482	-	-	-	-	-	0.142	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.482	-	-	-	-	-	0.142	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	2.076	-	-	-	-	-	0.744	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 6038E46900 / Signals, All Types
		Item Number / Title [DODIC]: E44600 / SIGNAL KIT, Personnel Distress, A/P25S-5 Series [L119]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	19.184	2.091	-	7.734	-	7.734
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	19.184	2.091	-	7.734	-	7.734
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	19.184	2.091	-	7.734	-	7.734

(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																		
COMPLETE ROUND ^(†)	-	-	19.008	160.07	12,362	1.979	-	-	-	166.71	44,509	7.420	-	-	-	166.71	44,509	7.420
Subtotal: Recurring Cost	-	-	19.008	-	-	1.979	-	-	-	-	-	7.420	-	-	-	-	-	7.420
Subtotal: Hardware Cost	-	-	19.008	-	-	1.979	-	-	-	-	-	7.420	-	-	-	-	-	7.420
Support - Production Engineering Cost																		
Production Engineering	-	-	0.174	-	-	0.105	-	-	-	-	-	0.309	-	-	-	-	-	0.309
Subtotal: Support - Production Engineering Cost	-	-	0.174	-	-	0.105	-	-	-	-	-	0.309	-	-	-	-	-	0.309
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.002	-	-	0.008	-	-	-	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	0.002	-	-	0.008	-	-	-	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	19.184	-	-	2.091	-	-	-	-	-	7.734	-	-	-	-	-	7.734

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army								Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 6038E46900 / Signals, All Types					Item Number / Title [DODIC]: E44600 / SIGNAL KIT, Personnel Distress, A/P25S-5 Series [L119]				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Apr 2020	Oct 2021	12,362	160.07	Y		
COMPLETE ROUND ^(†)		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Jun 2022	44,509	166.71	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47										P-1 Line Item Number / Title: 6038E46900 / Signals, All Types										Item Number / Title [DODIC]: E44600 / SIGNAL KIT, Personnel Distress, A/P25S-5 Series [L119]									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2020													Fiscal Year 2021													B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020													Calendar Year 2021													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
COMPLETE ROUND																																	
	1	2019	ARMY	12.362	.000	12.362																								12.362			
	1	2021	ARMY	44.509	.000	44.509																								44.509			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2021 Army															Date: February 2020														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47										P-1 Line Item Number / Title: 6038E46900 / Signals, All Types										Item Number / Title [DODIC]: E44600 / SIGNAL KIT, Personnel Distress, A/P25S-5 Series [L119]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2022												Fiscal Year 2023												B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022												Calendar Year 2023												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L		A U G	S E P
COMPLETE ROUND																															
	1	2019	ARMY	12.362	.000	12.362	3.500	3.500	3.500	1.862																			.000		
	1	2021	ARMY	44.509	.000	44.509	-	-	-	-	-	-	-	3.719	3.708	3.708	3.710	3.708	3.708	3.708	3.708	3.708	3.708	3.708	3.708	3.708	3.708		.000		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 6038E46900 / Signals, All Types
		Item Number / Title [DODIC]: E44600 / SIGNAL KIT, Personnel Distress, A/P25S-5 Series [L119]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2021	1-8-5 For 2021	MAX For 2021	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TO BE SELECTED - TBS01	1,500	3,500	6,000	8	8	18	26	6	6	15	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).

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 6038E46900 / Signals, All Types
		Item Number / Title [DODIC]: E46500 / Signal, Hand Held White Star Cluster M159 [L307]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	31.504	2.403	-	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	31.504	2.403	-	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	31.504	2.403	-	-	-	-

(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																		
Load, Assemble, Pack (Lap)	-	-	31.358	50.62	39,008	1.975	-	-	-	-	-	-	-	-	-	-	-	-
Box Metal M548	-	-	0.042	48.69	1,642	0.080	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	31.400	-	-	2.055	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	31.400	-	-	2.055	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.101	-	-	0.345	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.101	-	-	0.345	-	-	-	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.003	-	-	0.004	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.003	-	-	0.004	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	31.504	-	-	2.403	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E46700 / Signal, Hand Held Red Parachute Flare M126A1 [LA80]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	22.789	-	-	4.235	-	4.235
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	22.789	-	-	4.235	-	4.235
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	22.789	-	-	4.235	-	4.235

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

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

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

Cost Elements	Prior Years			FY 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																		
Load, Assemble, Pack (Lap)	-	-	22.251	-	-	-	-	-	-	65.27	55,924	3.650	-	-	-	65.27	55,924	3.650
Box Metal M548	-	-	0.227	-	-	-	-	-	-	66.61	2,354	0.157	-	-	-	66.61	2,354	0.157
<i>Subtotal: Recurring Cost</i>	-	-	<i>22.478</i>	-	-	-	-	-	-	-	-	<i>3.807</i>	-	-	-	-	-	<i>3.807</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>22.478</i>	-	-	-	-	-	-	-	-	<i>3.807</i>	-	-	-	-	-	<i>3.807</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	0.311	-	-	-	-	-	-	-	-	0.428	-	-	-	-	-	0.428
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.311</i>	-	-	-	-	-	-	-	-	<i>0.428</i>	-	-	-	-	-	<i>0.428</i>
Gross/Weapon System Cost	-	-	22.789	-	-	-	-	-	-	-	-	4.235	-	-	-	-	-	4.235

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47		P-1 Line Item Number / Title: 6038E46900 / Signals, All Types
		Item Number / Title [DODIC]: E46800 / Signal, Hand Held White Parachute Flare M127A1 [L312]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	140.901	1.031	7.549	0.300	-	0.300
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	140.901	1.031	7.549	0.300	-	0.300
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	140.901	1.031	7.549	0.300	-	0.300

(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																		
Load, Assemble, Pack (Lap) ^(t)	-	-	140.178	50.46	15,264	0.770	58.68	114,845	6.739	78.24	3,318	0.260	-	-	-	78.24	3,318	0.260
Box Metal M548 ^(t)	-	-	0.165	48.69	643	0.031	47.15	4,835	0.228	66.61	139	0.009	-	-	-	66.61	139	0.009
Subtotal: Recurring Cost	-	-	140.343	-	-	0.802	-	-	6.967	-	-	0.269	-	-	-	-	-	0.269
Subtotal: Hardware Cost	-	-	140.343	-	-	0.802	-	-	6.967	-	-	0.269	-	-	-	-	-	0.269
Support - Production Engineering Cost																		
Production Engineering	-	-	0.549	-	-	0.226	-	-	0.578	-	-	0.027	-	-	-	-	-	0.027
Subtotal: Support - Production Engineering Cost	-	-	0.549	-	-	0.226	-	-	0.578	-	-	0.027	-	-	-	-	-	0.027
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.009	-	-	0.004	-	-	0.004	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	0.009	-	-	0.004	-	-	0.004	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	140.901	-	-	1.031	-	-	7.549	-	-	0.300	-	-	-	-	-	0.300

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

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 6038E46900 / Signals, All Types				Item Number / Title [DODIC]: E46800 / Signal, Hand Held White Parachute Flare M127A1 [L312]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Load, Assemble, Pack (Lap)		2019	SECURITY SIGNALS INC / CORDOVA, TN	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2019	Dec 2020	15,264	50.46	Y		
Load, Assemble, Pack (Lap)		2020	SECURITY SIGNALS INC / CORDOVA, TN	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Jun 2021	114,845	58.68	Y		
Load, Assemble, Pack (Lap)		2021	SECURITY SIGNALS INC / CORDOVA, TN	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Jun 2022	3,318	78.24	Y		
Box Metal M548		2019	CONCO INC. / LOUISVILLE, KY	Option / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Jan 2020	643	48.69	Y		
Box Metal M548		2020	CONCO INC. / LOUISVILLE, KY	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Nov 2020	4,835	47.15	Y		
Box Metal M548		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Nov 2021	139	66.61	Y		

Remarks:
FY 2019 - FY 2021 are delivery orders to an existing contract.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E47000 / Signal, Hand Held Green Star Cluster M125A1 [L314]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	52.063	0.724	5.150	5.051	-	5.051
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	52.063	0.724	5.150	5.051	-	5.051
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	52.063	0.724	5.150	5.051	-	5.051

(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																		
Load, Assemble, Pack (Lap) ^(†)	-	-	51.003	50.62	12,060	0.610	56.35	81,323	4.583	58.96	72,983	4.303	-	-	-	58.96	72,983	4.303
Box Metal M548 ^(†)	-	-	0.042	48.09	508	0.024	47.16	3,424	0.161	66.61	3,072	0.205	-	-	-	66.61	3,072	0.205
Subtotal: Recurring Cost	-	-	51.045	-	-	0.635	-	-	4.744	-	-	4.508	-	-	-	-	-	4.508
Subtotal: Hardware Cost	-	-	51.045	-	-	0.635	-	-	4.744	-	-	4.508	-	-	-	-	-	4.508
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.017	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.017	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.003	-	-	0.069	-	-	0.402	-	-	0.539	-	-	-	-	-	0.539
Subtotal: Support - Production Engineering Cost	-	-	1.003	-	-	0.069	-	-	0.402	-	-	0.539	-	-	-	-	-	0.539
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.015	-	-	0.004	-	-	0.004	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	0.015	-	-	0.004	-	-	0.004	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	52.063	-	-	0.724	-	-	5.150	-	-	5.051	-	-	-	-	-	5.051

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E47000 / Signal, Hand Held Green Star Cluster M125A1 [L314]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

Remarks:
Production Engineering increased due to significant change in planned procurement of signals and reflects the pro-rated share for the family of Hand Held Signal support.

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 6038E46900 / Signals, All Types				Item Number / Title [DODIC]: E47000 / Signal, Hand Held Green Star Cluster M125A1 [L314]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Load, Assemble, Pack (Lap)		2019	SECURITY SIGNALS INC / CORDOVA, TN	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2019	Dec 2020	12,060	50.62	Y		
Load, Assemble, Pack (Lap)		2020	SECURITY SIGNALS INC / CORDOVA, TN	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Jun 2021	81,323	56.35	Y		
Load, Assemble, Pack (Lap)		2021	SECURITY SIGNALS INC / CORDOVA, TN	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Jun 2022	72,983	58.96	Y		
Box Metal M548		2019	CONCO INC. / LOUISVILLE, KY	Option / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Jan 2020	508	48.09	Y		
Box Metal M548		2020	CONCO INC. / LOUISVILLE, KY	Option / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Nov 2020	3,424	47.16	Y		
Box Metal M548		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Nov 2021	3,072	66.61	Y		

Remarks:
FY 2019 - FY 2021 are delivery orders to an existing contract.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E49105 / CTG, Impulse, Countermeasure, BBU-35/B

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	6.043	-	-	1.257	-	1.257
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	6.043	-	-	1.257	-	1.257
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	6.043	-	-	1.257	-	1.257

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	-	-	6.043	-	-	-	-	-	-	2.93	411,078	1.204	-	-	-	2.93	411,078	1.204
<i>Subtotal: Recurring Cost</i>	-	-	6.043	-	-	-	-	-	-	-	-	1.204	-	-	-	-	-	1.204
<i>Subtotal: Hardware Cost</i>	-	-	6.043	-	-	-	-	-	-	-	-	1.204	-	-	-	-	-	1.204
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.052	-	-	-	-	-	0.052
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.052	-	-	-	-	-	0.052
Gross/Weapon System Cost	-	-	6.043	-	-	-	-	-	-	-	-	1.257	-	-	-	-	-	1.257

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E62900 / SMOKE POT, Practice, M8 [K511]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	52.790	1.872	5.166	8.459	-	8.459
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	52.790	1.872	5.166	8.459	-	8.459
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	52.790	1.872	5.166	8.459	-	8.459

(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 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																		
LOAD, ASSEMBLE, PACK (LAP) ^(†)	-	-	44.802	504.41	1,099	0.554	669.86	3,721	2.493	731.76	5,897	4.315	-	-	-	731.76	5,897	4.315
FUZE, SMOKE POT, FLOATING M208 ^(†)	-	-	0.293	157.62	1,144	0.180	104.48	3,869	0.404	106.56	6,132	0.653	-	-	-	106.56	6,132	0.653
INNER COVER ASSEMBLY ^(†)	-	-	0.174	64.40	1,264	0.081	65.48	4,279	0.280	99.50	6,781	0.675	-	-	-	99.50	6,781	0.675
OUTER COVER ASSEMBLY ^(†)	-	-	0.219	80.92	1,264	0.102	82.27	4,279	0.352	85.08	6,781	0.577	-	-	-	85.08	6,781	0.577
CONTAINER, USED ON SMOKE POT M8 ^(†)	-	-	0.204	74.86	1,264	0.095	76.37	4,279	0.327	94.42	6,781	0.640	-	-	-	94.42	6,781	0.640
<i>Subtotal: Recurring Cost</i>	-	-	<i>45.692</i>	-	-	<i>1.013</i>	-	-	<i>3.856</i>	-	-	<i>6.861</i>	-	-	-	-	-	<i>6.861</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>45.692</i>	-	-	<i>1.013</i>	-	-	<i>3.856</i>	-	-	<i>6.861</i>	-	-	-	-	-	<i>6.861</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	7.068	-	-	0.847	-	-	1.298	-	-	1.594	-	-	-	-	-	1.594
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>7.068</i>	-	-	<i>0.847</i>	-	-	<i>1.298</i>	-	-	<i>1.594</i>	-	-	-	-	-	<i>1.594</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.030	-	-	0.012	-	-	0.012	-	-	0.004	-	-	-	-	-	0.004

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E62900 / SMOKE POT, Practice, M8 [K511]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.030	-	-	0.012	-	-	0.012	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	52.790	-	-	1.872	-	-	5.166	-	-	8.459	-	-	-	-	-	8.459

Remarks:

Production Engineering increased due to change in planned procurement and reflects the pro-rated share of support.

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E62900 / SMOKE POT, Practice, M8 [K511]
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2019	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	ROCK ISLAND ARSENAL, IL	Aug 2019	Jan 2021	1,099	504.41	Y		
LOAD, ASSEMBLE, PACK (LAP)		2020	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	ROCK ISLAND ARSENAL, IL	Mar 2020	Aug 2021	3,721	669.86	Y		
LOAD, ASSEMBLE, PACK (LAP)		2021	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	ROCK ISLAND ARSENAL, IL	Mar 2021	Aug 2022	5,897	731.76	Y		
FUZE, SMOKE POT, FLOATING M208		2019	CHEMRING ORDNANCE, INC. / PERRY, FL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Jan 2020	1,144	157.62	Y		
FUZE, SMOKE POT, FLOATING M208		2020	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	3,869	104.48	Y		
FUZE, SMOKE POT, FLOATING M208		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Mar 2022	6,132	106.56	Y		
INNER COVER ASSEMBLY		2019	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Dec 2019	1,264	64.40	Y		
INNER COVER ASSEMBLY		2020	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	4,279	65.48	Y		
INNER COVER ASSEMBLY		2021	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Dec 2021	6,781	99.50	Y		
OUTER COVER ASSEMBLY		2019	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Dec 2019	1,264	80.92	Y		
OUTER COVER ASSEMBLY		2020	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	4,279	82.27	Y		
OUTER COVER ASSEMBLY		2021	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Dec 2021	6,781	85.08	Y		
CONTAINER, USED ON SMOKE POT M8		2019	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Dec 2019	1,264	74.86	Y		
CONTAINER, USED ON SMOKE POT M8		2020	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	4,279	76.37	Y		
CONTAINER, USED ON SMOKE POT M8		2021	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Dec 2021	6,781	94.42	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition	P-1 Line Item Number / Title: 8278E51200 / Simulators, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	275.981	11.464	16.054	10.253	-	10.253	11.415	8.158	8.267	8.331	-	349.923
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	275.981	11.464	16.054	10.253	-	10.253	11.415	8.158	8.267	8.331	-	349.923
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	275.981	11.464	16.054	10.253	-	10.253	11.415	8.158	8.267	8.331	-	349.923

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

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

Description:

This budget line includes Simulators, All Types.

(E49700) M115A2 Artillery Ground Burst Simulator is a hand thrown device that is used in training to simulate battlefield noise and effects (shell in flight and ground explosion) during troop maneuvers. The simulator has a 6-10 second delay followed by a 2-4 second whistle ending with a flash and loud report; the surface danger zone is 35 meters. This item is Code A, approved for service use.

(E50200) M116A1 Hand Grenade Simulator is a hand-thrown device and is used in training to simulate battlefield noise and effects during troop maneuvers. It has a 5 to 10 second delay and a 15 meter surface danger zone. This item is Code A, approved for service use.

(E70600) M22 Anti-Tank Weapon Effect Signature Simulator (ATWESS) Guided Missile (GM) Rocket Simulator is used to simulate the TOW, DRAGON or VIPER, including report, flash and smoke through use of an adapter. It is compatible with the Multiple Integrated Laser Engagement System (MILES). This item is Code A, approved for service use.

(E88404) Simulators, Non-standard, Special Effects for CTCs Black smoke cartridge to simulate target kill. This item is launched with Omega 60 Force on target. This item is in development which is part of the Special Use Ammo Family. This item is Code B, not approved for service use.

(E88119) M34 Hostile Fire Simulator has replaced the M21 and is used for Force on Target training to simulate large caliber gunfire. The simulator emits an orange flash and white smoke visible at 1800 meters. The simulator is fired from the Omega 60B2 and the Omega 36. This item is Code A, approved for service use.

(E88125) XM35 Target Hit (White Star) Simulator has replaced the M25 and is used for Force on Target training to simulate a strike or target hit signal. The Simulator emits 8-12 white burning stars visible at 1800 meters. The simulator is fired from the Omega 60B2 and the Omega 36. This item is Code A, approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition

P-1 Line Item Number / Title:
8278E51200 / Simulators, All Types

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E49700 / SIMULATOR, Projectile Ground Burst, M115A2 [L594]	P-5a	A		- / 122.095	- / 4.358	- / 8.045	- / 2.968	- / -	- / 2.968
P-5	E50200 / SIMULATOR, Hand Grenade, M116A1 [L601]		A		- / 95.954	- / 4.077	- / 3.275	- / 2.950	- / -	- / 2.950
P-5	E70600 / SIMULATOR, Rocket, Antitank GM Lnchd, M22 (ATWESS) [LA77]		A		- / 49.590	- / 3.029	- / 3.035	- / 0.799	- / -	- / 0.799
P-5	E88119 / SIMULATOR, Hostile Fire, M34		A		- / 3.895	- / -	- / -	- / 0.894	- / -	- / 0.894
P-5	E88125 / SIMULATOR, Target Hit, M35 (White Star)		A		- / 4.447	- / -	- / -	- / 0.894	- / -	- / 0.894
P-5	E88404 / SIMULATORS, Non-Standard, Special Effects, f/CTCS [LZ04]		B		- / -	- / -	- / 1.699	- / 1.748	- / -	- / 1.748
P-40	Total Gross/Weapon System Cost				- / 275.981	- / 11.464	- / 16.054	- / 10.253	- / -	- / 10.253

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base dollars in the amount of \$10.253 million supports the procurement of six simulators

E88404 - SIMULATORS, NON STANDARD, SPECIAL EFFECTS FOR CTCS
This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$1.748 million supports production of 108,650 Non Standard Simulators.
TYPE CLASSIFICATION DATE: TBD

E49700 - SIMULATOR PROJ GND BURST M115A2
This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$2.968 million supports production of 90,303 Ground Burst Simulators.
TYPE CLASSIFICATION DATE: 1962

E50200 - SIMULATOR HAND GRENADE M116A1
This is a training unique item not used in combat. The FY 2020 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$2.950 million supports production of 93,206 hand grenade simulators.
TYPE CLASSIFICATION DATE: 1960

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 47: Other Ammunition		P-1 Line Item Number / Title: 8278E51200 / Simulators, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>E70600 - SIMULATOR ANTITANK GM RKT M22 (ATWESS) This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$.799 million supports production of 45,031 Anti-Tank simulators. TYPE CLASSIFICATION DATE: 1984</p> <p>E88119 - M34 HOSTILE FIRE SIMULATOR M34 This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.894 million supports production of 171,648 simulators. E88119 is a New Start in FY 2021. TYPE CLASSIFICATION DATE: October 2006</p> <p>E88125 - TARGET HIT (White Star) SIMULATOR M35 This is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with Army's procurement goals.. FY 2021 Base procurement dollars in the amount of \$0.894 million supports production of 21,048 simulators. E88125 is a New Start in FY 2021. TYPE CLASSIFICATION DATE: October 2006</p>		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 8278E51200 / Simulators, All Types	Item Number / Title [DODIC]: E49700 / SIMULATOR, Projectile Ground Burst, M115A2 [L594]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	122.095	4.358	8.045	2.968	-	2.968
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	122.095	4.358	8.045	2.968	-	2.968
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	122.095	4.358	8.045	2.968	-	2.968

(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																		
COMPLETE ROUND ^(†)	-	-	120.436	30.55	124,424	3.801	18.66	390,510	7.287	26.04	90,303	2.351	-	-	-	26.04	90,303	2.351
<i>Subtotal: Recurring Cost</i>	-	-	120.436	-	-	3.801	-	-	7.287	-	-	2.351	-	-	-	-	-	2.351
<i>Subtotal: Hardware Cost</i>	-	-	120.436	-	-	3.801	-	-	7.287	-	-	2.351	-	-	-	-	-	2.351
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	-	-	-	0.151	-	-	-	-	-	0.151
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.151	-	-	-	-	-	0.151
Support - Production Engineering Cost																		
Production Engineering	-	-	1.650	-	-	0.554	-	-	0.755	-	-	0.462	-	-	-	-	-	0.462
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.650	-	-	0.554	-	-	0.755	-	-	0.462	-	-	-	-	-	0.462
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.009	-	-	0.003	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.009	-	-	0.003	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003
Gross/Weapon System Cost	-	-	122.095	-	-	4.358	-	-	8.045	-	-	2.968	-	-	-	-	-	2.968

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2021 Army							Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47			P-1 Line Item Number / Title: 8278E51200 / Simulators, All Types				Item Number / Title [DODIC]: E49700 / SIMULATOR, Projectile Ground Burst, M115A2 [L594]					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND		2019	PYROTECHNIQUE BY GRUCCI INC / RADFORD, VA	C / FFP	ROCK ISLAND ARSENAL, IL	Oct 2019	Oct 2020	124,424	30.55	Y		
COMPLETE ROUND		2020	PYROTECHNIQUE BY GRUCCI INC / RADFORD, VA	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2020	Mar 2021	390,510	18.66	Y		
COMPLETE ROUND		2021	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2021	Sep 2022	90,303	26.04	Y		

Remarks:
FY 2019 and FY 2020 are delivery orders to an existing contract.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 8278E51200 / Simulators, All Types	Item Number / Title [DODIC]: E50200 / SIMULATOR, Hand Grenade, M116A1 [L601]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	95.954	4.077	3.275	2.950	-	2.950
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	95.954	4.077	3.275	2.950	-	2.950
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	95.954	4.077	3.275	2.950	-	2.950

(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																		
COMPLETE ROUND	-	-	92.290	23.97	151,126	3.622	23.88	125,690	3.001	25.09	93,206	2.339	-	-	-	25.09	93,206	2.339
Subtotal: Recurring Cost	-	-	92.290	-	-	3.622	-	-	3.001	-	-	2.339	-	-	-	-	-	2.339
Subtotal: Hardware Cost	-	-	92.290	-	-	3.622	-	-	3.001	-	-	2.339	-	-	-	-	-	2.339
Support - Acceptance Testing Cost																		
First Article Test	-	-	0.246	-	-	-	-	-	-	-	-	0.136	-	-	-	-	-	0.136
Subtotal: Support - Acceptance Testing Cost	-	-	0.246	-	-	-	-	-	-	-	-	0.136	-	-	-	-	-	0.136
Support - Production Engineering Cost																		
Production Engineering	-	-	3.406	-	-	0.452	-	-	0.271	-	-	0.473	-	-	-	-	-	0.473
Subtotal: Support - Production Engineering Cost	-	-	3.406	-	-	0.452	-	-	0.271	-	-	0.473	-	-	-	-	-	0.473
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.012	-	-	0.003	-	-	0.002	-	-	0.003	-	-	-	-	-	0.003
Subtotal: Support - Quality Assurance Cost	-	-	0.012	-	-	0.003	-	-	0.002	-	-	0.003	-	-	-	-	-	0.003
Gross/Weapon System Cost	-	-	95.954	-	-	4.077	-	-	3.275	-	-	2.950	-	-	-	-	-	2.950

Remarks:
Production Engineering increased due to change in planned procurement of simulators and reflects the pro-rated share for the family of Simulator support.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 8278E51200 / Simulators, All Types	Item Number / Title [DODIC]: E70600 / SIMULATOR, Rocket, Antitank GM Lnchd, M22 (ATWESS) [LA77]

ID Code (A=Service Ready, B=Not Service Ready) : A				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)		49.590	3.029	3.035	0.799	-	0.799
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		49.590	3.029	3.035	0.799	-	0.799
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		49.590	3.029	3.035	0.799	-	0.799
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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																		
Complete Round	171.75	275,401	47.299	12.87	121,323	1.561	13.64	130,407	1.779	16.88	45,031	0.760	-	-	-	16.88	45,031	0.760
<i>Subtotal: Recurring Cost</i>	-	-	47.299	-	-	1.561	-	-	1.779	-	-	0.760	-	-	-	-	-	0.760
Subtotal: Hardware Cost	-	-	47.299	-	-	1.561	-	-	1.779	-	-	0.760	-	-	-	-	-	0.760
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.183	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.183	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	2.279	-	-	1.281	-	-	1.253	-	-	0.032	-	-	-	-	-	0.032
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	2.279	-	-	1.281	-	-	1.253	-	-	0.032	-	-	-	-	-	0.032
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.012	-	-	0.003	-	-	0.003	-	-	0.007	-	-	-	-	-	0.007
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.012	-	-	0.003	-	-	0.003	-	-	0.007	-	-	-	-	-	0.007
Gross/Weapon System Cost	-	-	49.590	-	-	3.029	-	-	3.035	-	-	0.799	-	-	-	-	-	0.799

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 8278E51200 / Simulators, All Types	Item Number / Title [DODIC]: E88119 / SIMULATOR, Hostile Fire, M34

ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)		-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)		3.895	-	-	0.894	-	0.894
Less PY Advance Procurement (<i>\$ in Millions</i>)		-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)		3.895	-	-	0.894	-	0.894
Plus CY Advance Procurement (<i>\$ in Millions</i>)		-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)		3.895	-	-	0.894	-	0.894
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (<i>\$ in Millions</i>)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)		-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	-	-	3.895	-	-	-	-	-	-	5.00	171,648	0.858	-	-	-	5.00	171,648	0.858
<i>Subtotal: Recurring Cost</i>	-	-	3.895	-	-	-	-	-	-	-	-	0.858	-	-	-	-	-	0.858
<i>Subtotal: Hardware Cost</i>	-	-	3.895	-	-	-	-	-	-	-	-	0.858	-	-	-	-	-	0.858
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.036	-	-	-	-	-	0.036
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.036	-	-	-	-	-	0.036
Gross/Weapon System Cost	-	-	3.895	-	-	-	-	-	-	-	-	0.894	-	-	-	-	-	0.894

Remarks:
E88119 is a New Start in FY 2021.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 8278E51200 / Simulators, All Types	Item Number / Title [DODIC]: E88125 / SIMULATOR, Target Hit, M35 (White Star)

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	4.447	-	-	0.894	-	0.894
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	4.447	-	-	0.894	-	0.894
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	4.447	-	-	0.894	-	0.894

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	-	-	4.447	-	-	-	-	-	-	40.77	21,048	0.858	-	-	-	40.77	21,048	0.858
<i>Subtotal: Recurring Cost</i>	-	-	4.447	-	-	-	-	-	-	-	-	0.858	-	-	-	-	-	0.858
<i>Subtotal: Hardware Cost</i>	-	-	4.447	-	-	-	-	-	-	-	-	0.858	-	-	-	-	-	0.858
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.036	-	-	-	-	-	0.036
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.036	-	-	-	-	-	0.036
Gross/Weapon System Cost	-	-	4.447	-	-	-	-	-	-	-	-	0.894	-	-	-	-	-	0.894

Remarks:
E88125 is a New Start in FY 2021.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 8278E51200 / Simulators, All Types	Item Number / Title [DODIC]: E88404 / SIMULATORS, Non-Standard, Special Effects, f/CTCs [LZ04]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	1.699	1.748	-	1.748
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	1.699	1.748	-	1.748
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	1.699	1.748	-	1.748

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	-	-	-	-	-	-	15.13	108,347	1.639	15.44	108,650	1.678	-	-	-	15.44	108,650	1.678
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	1.639	-	-	1.678	-	-	-	-	-	1.678
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	1.639	-	-	1.678	-	-	-	-	-	1.678
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.059	-	-	0.070	-	-	-	-	-	0.070
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	0.059	-	-	0.070	-	-	-	-	-	0.070
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	1.699	-	-	1.748	-	-	-	-	-	1.748

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous	P-1 Line Item Number / Title: 0684EB0016 / Ammo Components, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	725.153	4.179	2.661	3.476	-	3.476	3.604	3.735	3.877	3.976	-	750.661
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	725.153	4.179	2.661	3.476	-	3.476	3.604	3.735	3.877	3.976	-	750.661
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	725.153	4.179	2.661	3.476	-	3.476	3.604	3.735	3.877	3.976	-	750.661

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

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

Description:

This budget line includes Ammunition Components All Types - Component and Renovation of Field Stock and Weapon Component in support of Proof Acceptance Testing efforts:

Component and Renovation (C&R) of Field Stock funds support the renovation of unserviceable training and combat ammunition to bring them back to a serviceable condition at a cost that is less than new procurement. Additionally, funds support Army Test and Evaluation Command (ATEC) Special Tests, First Article Tests, Renovation of Field Stocks and Proof of Acceptance Tests used in both training and combat ammunition.

Justification:

FY 2021 Base procurement dollars in the amount of \$1,998 million support the Components and Renovation of Field Stock (C&R) effort. C&R supports the renovation of unserviceable training and combat ammunition, returning unserviceable items to issuable, serviceable condition at a substantial cost savings to the Army when compared to costs to demilitarize and procure new, replacement stock. Proposed C&R efforts undergo cost analysis to compare proposed renovation costs or rework efforts to the cost associated with demilitarization and new procurement to ensure efforts conducted under C&R result in a cost savings to the Army. The efforts are primarily focused on condition codes E and F within Army inventory.

FY 2021 Base procurement dollars in the amount of \$1.478 million supports several initiatives at Aberdeen Test Center (ATC) and Yuma Test Center (YTC).

At ATC, continue a replacement and procurement program for weapons and weapon components that are worn during testing of production ammunition items. Typical purchases include: rifle/carbine/machine gun barrels, receivers, and parts; large caliber barrels; small and medium caliber Mann-type test barrels, mortar barrels and bipod/baseplates.

At YTC, acquires weapon components required for continued support of the Production Acceptance Test (PAT) as part of the indirect fire test mission. Purchases include components such as breeches and tubes for medium to large caliber mortars and cannons.

At YTC, procures replacement parts for both large and small caliber direct fire weapon systems for production based support. The primary items to be purchased are recoils, breeches, cradles, and gun tubes for both 120mm M256 and 105mm M68 cannons. In addition, spares will be obtained for 25mm and small arms weapon systems, along with other supporting equipment such as solenoids and bore-sighting equipment.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous	P-1 Line Item Number / Title: 1430E91901 / Non-Lethal Ammunition, All Types
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	7.620	2.810	-	-	-	-	-	-	-	-	-	10.430
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	7.620	2.810	-	-	-	-	-	-	-	-	-	10.430
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	7.620	2.810	-	-	-	-	-	-	-	-	-	10.430

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

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

Description:

This budget line item procures Non-Lethal Ammunition, All Types.

(E91505) CTG NL FIRING DEVICE: TASER, XP25

The Cartridge, NL Firing Device is a 25-foot single shot fired from the Launched Electrode Stun Device (LESD), which is a hand held device used for Electro-Muscular Incapacitation (EMI). LESD increases soldier survivability by allowing Soldiers to quickly incapacitate hostile personnel. LESD enables Force Protection (FP) and enhances the security of personnel and materiel by allowing alternatives to lethal force. This cartridge is a conducted energy weapon that delivers an incapacitating electrical shock capable of arcing through 2 inches of clothing. Maximum effective range is 15 feet. This item is Code A, approved for service use.

(E86401) CTG 12 GA NL, EXT RG, MARK M1116

The M1116 is a 12 gauge non-lethal cartridge that provides target marking capability at an extended range of 30-50m. It utilizes a drag stabilized tear-shaped bag with fluorescent green marking powder to deliver its marking capability. It can be fired from Army standard shotguns, and provides blunt force trauma to stop, confuse, disorient, or deter a potential threat. The M1116 increases soldier survivability by allowing Soldiers to quickly mark and deter hostile personnel. M1116 enables Force Protection (FP) and enhances the security of personnel and materiel by allowing alternatives to lethal force. This item is Code A, approved for service use.

Justification:

FY 2021 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD)-approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

(E91505) Ctg, NL Firing Device: Taser XP25 f/X26E Taser

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous		P-1 Line Item Number / Title: 1430E91901 / Non-Lethal Ammunition, All Types
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
This is a training standard item used in both training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: August 2011		
(E86401) Ctg, 12G, Non-Lethal, Ext RG, Marking M1116 Series This is a training standard item used in both training and combat. There is no FY 2021 funding request. TYPE CLASSIFICATION DATE: October 2015		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous	P-1 Line Item Number / Title: 2624EA0055 / Items Less Than \$5 Million (AMMO)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	198.912	12.706	9.224	10.569	0.011	10.580	10.742	16.753	16.356	24.771	-	300.044
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	198.912	12.706	9.224	10.569	0.011	10.580	10.742	16.753	16.356	24.771	-	300.044
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	198.912	12.706	9.224	10.569	0.011	10.580	10.742	16.753	16.356	24.771	-	300.044

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

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

Description:

This budget line includes Miscellaneous Ammunition Items Under \$5 million.

(E00300) CTG 12 GAUGE SHOTGUN 7 1/2 CHILLED SHOT is a 12 gauge 2 3/4 inch round with #7 1/2 pellets (approximately 2.39mm (0.094") diameter and weighs about 1.25 grains each) and can be fired out of the M26, M1014, Mossberg Model 500/590, and Remington 870/MCS shotguns. This item is Code A, approved for service use.

(E01700) CTG CAL .22 LR MATCH F/PISTOL is used in .22 caliber Remington Model 40X-H1 rifles for military marksmanship training. This item is Code A, approved for service use.

(E03001) CTG, CAL .30 BLANK is used for salute ceremonies by Veteran Organizations in the M1 Garand rifles without being equipped with a firing adapter. It can be identified by the absence of a bullet and a rosette crimped casemouth. This item is Code A, approved for service use.

(E03701) CTG, .300 Winchester Magnum (WinMag) MK248 procurement supports the M2010 Enhanced Sniper Rifle (ESR). It consists of an Open Tip Match (OTM) bullet, brass case cartridge, large rifle leadstyphnate primer, and smokeless small arms propellant. This item is Code A, approved for service use.

(E92100) CTG 12 GAUGE BREACHING ROUND, M1030 provides the capability to Soldiers to effectively and safely breach doors with the Mossberg 500/590 and Remington 870/MCS shotguns. The 12-gauge door-breaching cartridge is intended to destroy locks and fixtures on doors and automobiles with little or no collateral damage to the interior. This item is Code A, approved for service use.

(E99101) SPECIAL TRAINING AMMO includes procurement of nonstandard and commercially-available specialty munitions and energetic materiel in support of United States Army troop training requirements defined by the Standards in Training Commission (STRAC) and set forth in Unit Programs of Instruction (POIs). Requirements and authorizations issued by Army G-3 are in accordance with Army Regulation (AR) 350-38 and are vetted through the Army Munitions Requirements Working Group and Council of Colonels. Unit requirements funded by this program include the US Army Military District of Washington, National Guard Bureau and Army Reserve, National and Joint Readiness Training Centers, and US Army Parachute Team.

(E99105) Soldier Enhancement Program Ammo. The Soldier Enhancement Program (SEP) was established by the Fiscal Year 1990 National Defense Authorization Act. The purpose of the SEP is to provide an impetus for increasing the combat effectiveness of our Army Infantryman/Soldiers through the procurement of Commercial Off the Shelf (COTS), Government Off the Shelf (GOTS) or Non-Developmental Item

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous		P-1 Line Item Number / Title: 2624EA0055 / Items Less Than \$5 Million (AMMO)
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(NDI) of lighter, more lethal weapons and improved equipment, including lighter, more comfortable loadbearing equipment, field gear, survivability items, communications equipment, navigational aids and training capabilities for Soldier evaluation. SEP AMMO provides a means of procuring COTS, GOTS and NDI ammunition to be evaluated by Soldiers for potential Army use or used in the evaluation of SEP weapons.</p> <p>(E99222) Foreign Weapons Training Ammunition. Foreign weapons ammunition procures munitions that have not been Type Classified, Materiel Released or Fielded for standard use by United States Army or other DoD services. It is not stocked/procured in standard DoD supply system. Funds will be used to purchase foreign (Non NATO) standard munitions, training devices and materials, conduct safety and quality assessments, and ship the munitions to their required destination.</p> <p>(EA0600) AMMUNITION PROGRAM SUPPORT enhances the management and distribution of ammunition. This funding is used to enhance all aspects of the ammunition life cycle through analysis, applied improvements, and demand requirements in support of warfighter requirements. Support funded by this line ensures critical efficient and effective ammunition management.</p> <p>(EA0960) USAMTU FT BENNING (United States Army Marksmanship Training Unit). This budget line funds procurement of nonstandard and commercially-available specialty munitions and energetic materiel in support of US Army Marksmanship Unit training requirements defined by the Standards in Training Commission (STRAC) and set forth in Unit Programs of Instruction (POIs). Requirements and authorizations issued by Army G-3 are in accordance with Army Regulation (AR) 350-38 and are vetted through the Army Munitions Requirements Working Group and Council of Colonels.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous

P-1 Line Item Number / Title:
2624EA0055 / Items Less Than \$5 Million (AMMO)

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	E00300 / CARTRIDGE 12 GAUGE SHOTGUN 7 1/2 CHILLED SHOT [A014]		A		- / 0.152	- / 0.066	- / 0.011	- / -	- / 0.011	- / 0.011
P-5	E01700 / CTG, .22cal Ball Long Rifle Match, f/Rifle [A091]		A		- / 7.391	- / 0.154	- / -	- / -	- / -	- / -
P-5	E03001 / CTG, .30cal Blank, M1909, Single [A222]		A		- / 29.495	- / 0.673	- / -	- / 1.478	- / -	- / 1.478
P-5	E03701 / CTG, .300cal Win Mag, MK248 w/Mods (7.62x67mm) [A191]		A		- / 13.361	- / 1.922	- / 1.000	- / 0.969	- / -	- / 0.969
P-5	E92100 / CTG, 12 Gauge Breaching Round, M1030 [AA54]		A		- / 7.931	- / 2.311	- / -	- / 0.822	- / -	- / 0.822
P-40a	E99101 / Special Training Ammo:				- / 33.489	- / 1.071	- / 1.091	- / 0.619	- / -	- / 0.619
P-40a	E99105 / Soldier Enhancement Program Ammo				- / 0.589	- / 0.253	- / -	- / -	- / -	- / -
P-40a	E99222 / Foreign Weapons Training Ammunition				- / 1.135	- / 0.496	- / 0.497	- / 0.499	- / -	- / 0.499
P-40a	EA0600 / AMMUNITION PROGRAM SUPPORT				- / 66.375	- / 4.207	- / 4.869	- / 4.895	- / -	- / 4.895
P-40a	EA0960 / USAMTU FT BENNING				- / 38.994	- / 1.553	- / 1.756	- / 1.287	- / -	- / 1.287
P-40	Total Gross/Weapon System Cost				- / 198.912	- / 12.706	- / 9.224	- / 10.569	- / 0.011	- / 10.580

*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 Budget supports critical Army Title 10 war reserve/operational, training, and test requirements in accordance with Department of Defense Instruction 3000.04 (Munitions Requirements Process) and Army Regulation 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support Office of the Secretary of Defense (OSD) approved Combatant Commander Operational Plans, Homeland Defense, and other OSD-directed missions. Training requirements support individual and collective training of Active and Reserve Component forces at Army schools, home station, and the combined training centers. Test requirements support the development, fielding, safety, and quality assurance of Army munitions and equipment throughout their life-cycle.

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

FY 2021 Total Base procurement dollars in the amount of \$10.569 million supports the procurement of 3.503 million cartridges in support of the National Defense Strategy and Combatant Command (COCOM) requirements. The Army intends to convert any price advantage created through contract negotiations, other service procurement, and/or Foreign Military Sales (FMS) to increase procurement of Miscellaneous Ammunition Items Under \$5 million when possible.

FY 2021 Overseas Contingency Operations (OCO) in the amount of \$0.011 million support the enduring COCOM requirement for procurement of 0.038 million CTG 12 GAUGE SHOTGUN 7.5 CHILLED SHOT to deter potential adversaries and support the European Deterrence Initiative.

(E00300) CTG 12 GAUGE SHOTGUN 7.5 CHILLED SHOT is a war reserve item used in combat. The request builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Overseas Contingency Operations (OCO) procurement dollars in the amount of \$0.011 million support the enduring COCOM requirement for procurement of 0.038 million 12 Gauge Shotgun 7.5 Chilled cartridges to deter potential adversaries and support the European Deterrence Initiative.
Type Classification date: November 1975.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous		P-1 Line Item Number / Title: 2624EA0055 / Items Less Than \$5 Million (AMMO)
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(E01700) CTG CAL .22 LR MATCH F/PISTOL is a training standard item used in training and combat. The request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. There is no FY 2021 funding request.</p> <p>(E03001) CTG, CAL .30 BLANK, M1909 is a training unique item not used in combat. The FY 2021 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$1.478 million supports the procurement of 2.256 million .30 Caliber Blank M11909 cartridges. Type classification date: 1917</p> <p>(E03701) CTG .300 Winchester Magnum (WinMag) MK248 is a training standard item used in both training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. The FY 2021 Base procurement dollars in the amount of \$0.969 million supports the procurement of 0.931 million MK248 cartridges. Type classification date: October 2012</p> <p>(E92100) CTG 12 GAUGE BREACHING ROUND M1030 is a training standard item used in training and combat. The FY 2021 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2021 Base procurement dollars in the amount of \$0.822 million supports the procurement of 0.278 million M1030 12 Gauge Breaching Rounds. Type classification date: October 2007</p> <p>(E99101) Special Training Ammunition. The FY 2021 funds will procure nonstandard and commercially-available specialty munitions and energetic materiel in support of FY 2021 US Army troop training requirements in accordance with DA G3 authorizations. The FY 2021 Base Requirement procurement dollars in the amount of \$0.619 million support Unit training requirements across various Army Units. Authorizations issued under this program vary annually and are reviewed/updated during semi-annual Army Munitions Requirements Working Groups and Councils of Colonels.</p> <p>(E99105) Soldier Enhancement Program (SEP) Ammunition. Soldier Enhancement Program (SEP) Ammunition. The funding supports Commercial-Off-The-Shelf (COTS), Government-Off-The-Shelf (GOTS) and Non-Developmental Item (NDI) ammunition that will be evaluated by Soldiers for potential use by the Army or used in the evaluation of SEP weapons. There is no FY 2021 request.</p> <p>(E99222) Foreign Weapons Training Ammunition. FY 2021 funds will be used to procure Non DOD Standard Ammunition (NSA), related Non DOD Standard Weapons Systems (NSWS), as well as related training aids for Army units supporting the Regionally Aligned Forces (RAF) mission. Army units will conduct preparation training with Non-standard weapons and munitions before deployment in order to be trained to support requirements, including operational missions, bilateral and multilateral military exercises and security cooperation activities. The FY 2021 Base procurement dollars in the amount of \$0.499 million supports Non Standard Ammunition initiatives.</p> <p>(EA0600) Ammunition Program Support. The FY 2021 Requirements request in the amount of \$4,895 million provides critical support to efficiently and effectively manage ammunition.</p> <p>(EA0960) USAMTU Ft. BENNING. The FY 2021 funds will procure nonstandard and commercially-available specialty munitions and energetic materiel in support of FY 2021 US Army Marksmanship Unit training requirements in accordance with DA G3 authorizations. The FY 2021 Base Requirement procurement dollars in the amount of \$1.287 million support Army Marksmanship Unit FY 2021 training requirements. Authorizations issued under this program vary annually and are reviewed/updated during semi-annual Army Munitions Requirements Working Groups and Councils of Colonels.</p>		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 50	P-1 Line Item Number / Title: 2624EA0055 / Items Less Than \$5 Million (AMMO)	Item Number / Title [DODIC]: E00300 / CARTRIDGE 12 GAUGE SHOTGUN 7 1/2 CHILLED SHOT [A014]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.152	0.066	0.011	-	0.011	0.011
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.152	0.066	0.011	-	0.011	0.011
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.152	0.066	0.011	-	0.011	0.011

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	0.34	339,000	0.115	0.29	227,586	0.066	0.29	31,570	0.009	-	-	-	0.29	37,931	0.011	0.29	37,931	0.011
<i>Subtotal: Recurring Cost</i>	-	-	0.115	-	-	0.066	-	-	0.009	-	-	-	-	-	0.011	-	-	0.011
<i>Subtotal: Hardware Cost</i>	-	-	0.115	-	-	0.066	-	-	0.009	-	-	-	-	-	0.011	-	-	0.011
Support - Production Engineering Cost																		
Production Engineering	-	-	0.037	-	-	0.000	-	-	0.002	-	-	-	-	-	0.000	-	-	0.000
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.037	-	-	-	-	-	0.002	-	-	-	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	0.152	-	-	0.066	-	-	0.011	-	-	-	-	-	0.011	-	-	0.011

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2021 Army													Date: February 2020					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 50						P-1 Line Item Number / Title: 2624EA0055 / Items Less Than \$5 Million (AMMO)						Item Number / Title [DODIC]: E01700 / CTG, .22cal Ball Long Rifle Match, f/Rifle [A091]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Procurement Quantity (<i>Units in Each</i>)				-		-		-		-		-		-				
Gross/Weapon System Cost (<i>\$ in Millions</i>)				7.391		0.154		-		-		-		-				
Less PY Advance Procurement (<i>\$ in Millions</i>)				-		-		-		-		-		-				
Net Procurement (P-1) (<i>\$ in Millions</i>)				7.391		0.154		-		-		-		-				
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-		-		-		-		-		-				
Total Obligation Authority (<i>\$ in Millions</i>)				7.391		0.154		-		-		-		-				
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (<i>\$ in Millions</i>)				-		-		-		-		-		-		-		
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)				-		-		-		-		-		-		-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	0.30	20,849,747	6.255	0.13	694,670	0.090	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	6.255	-	-	0.090	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	6.255	-	-	0.090	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.126	-	-	0.059	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.126	-	-	0.059	-	-	-	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.010	-	-	0.004	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.010	-	-	0.004	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	7.391	-	-	0.154	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 50	P-1 Line Item Number / Title: 2624EA0055 / Items Less Than \$5 Million (AMMO)	Item Number / Title [DODIC]: E03001 / CTG, .30cal Blank, M1909, Single [A222]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	29.495	0.673	-	1.478	-	1.478
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	29.495	0.673	-	1.478	-	1.478
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	29.495	0.673	-	1.478	-	1.478

(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																		
COMPLETE ROUND	-	-	28.580	0.28	578,748	0.162	-	-	-	0.53	2,256,222	1.196	-	-	-	0.53	2,256,222	1.196
BOX METAL M2A2	16.70	9,209	0.154	14.07	933	0.013	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	28.733	-	-	0.175	-	-	-	-	-	1.196	-	-	-	-	-	1.196
<i>Subtotal: Hardware Cost</i>	-	-	28.733	-	-	0.175	-	-	-	-	-	1.196	-	-	-	-	-	1.196
Support - Non-Recurring Support Cost																		
Value Engineering	-	-	-	-	-	0.084	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Non-Recurring Support Cost</i>	-	-	-	-	-	0.084	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.762	-	-	0.410	-	-	-	-	-	0.282	-	-	-	-	-	0.282
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.762	-	-	0.410	-	-	-	-	-	0.282	-	-	-	-	-	0.282
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.004	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	0.004	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	29.495	-	-	0.673	-	-	-	-	-	1.478	-	-	-	-	-	1.478

Remarks:

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 50	P-1 Line Item Number / Title: 2624EA0055 / Items Less Than \$5 Million (AMMO)	Item Number / Title [DODIC]: E03001 / CTG, .30cal Blank, M1909, Single [A222]
ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:	
Unit price increase from FY 2019 to FY 2021 due to transition from providing the M2A2 metal boxes via a Government Furnished Material (GFM) contract, to a Complete Round contract which includes the metal boxes in the unit price.		

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 50	P-1 Line Item Number / Title: 2624EA0055 / Items Less Than \$5 Million (AMMO)	Item Number / Title [DODIC]: E03701 / CTG, .300cal Win Mag, MK248 w/Mods (7.62x67mm) [A191]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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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)	13.361	1.922	1.000	0.969	-	0.969
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	13.361	1.922	1.000	0.969	-	0.969
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	13.361	1.922	1.000	0.969	-	0.969

(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																		
COMPLETE ROUND	1.19	8,619,333	10.257	0.91	2,044,738	1.861	1.00	970,500	0.971	1.00	930,585	0.931	-	-	-	1.00	930,585	0.931
<i>Subtotal: Recurring Cost</i>	-	-	10.257	-	-	1.861	-	-	0.971	-	-	0.931	-	-	-	-	-	0.931
Subtotal: Hardware Cost	-	-	10.257	-	-	1.861	-	-	0.971	-	-	0.931	-	-	-	-	-	0.931
Support - Production Engineering Cost																		
Production Engineering	-	-	3.098	-	-	0.058	-	-	0.025	-	-	0.034	-	-	-	-	-	0.034
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	3.098	-	-	0.058	-	-	0.025	-	-	0.034	-	-	-	-	-	0.034
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.003	-	-	0.004	-	-	0.005	-	-	0.005	-	-	-	-	-	0.005
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.003	-	-	0.004	-	-	0.005	-	-	0.005	-	-	-	-	-	0.005
Gross/Weapon System Cost	-	-	13.361	-	-	1.922	-	-	1.000	-	-	0.969	-	-	-	-	-	0.969

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 50	P-1 Line Item Number / Title: 2624EA0055 / Items Less Than \$5 Million (AMMO)	Item Number / Title [DODIC]: E92100 / CTG, 12 Gauge Breaching Round, M1030 [AA54]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	7.931	2.311	-	0.822	-	0.822
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	7.931	2.311	-	0.822	-	0.822
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	7.931	2.311	-	0.822	-	0.822

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

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

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

Cost Elements	Prior Years			FY 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																		
COMPLETE ROUND	-	-	7.931	2.70	795,355	2.147	-	-	-	2.75	278,065	0.765	-	-	-	2.75	278,065	0.765
<i>Subtotal: Recurring Cost</i>	-	-	<i>7.931</i>	-	-	<i>2.147</i>	-	-	-	-	-	<i>0.765</i>	-	-	-	-	-	<i>0.765</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>7.931</i>	-	-	<i>2.147</i>	-	-	-	-	-	<i>0.765</i>	-	-	-	-	-	<i>0.765</i>
Support - Non-Recurring Support Cost																		
Value Engineering	-	-	-	-	-	0.070	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Non-Recurring Support Cost</i>	-	-	-	-	-	<i>0.070</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.094	-	-	-	-	-	0.057	-	-	-	-	-	0.057
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	<i>0.094</i>	-	-	-	-	-	<i>0.057</i>	-	-	-	-	-	<i>0.057</i>
Gross/Weapon System Cost	-	-	7.931	-	-	2.311	-	-	-	-	-	0.822	-	-	-	-	-	0.822

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 50 **P-1 Line Item Number / Title:** 2624EA0055 / Items Less Than \$5 Million (AMMO) **Aggregated Items Title:** Various

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)
Various Items																				
E99101 / Special Training Ammo:			-	-	33.489	-	-	1.071	-	-	1.091	-	-	0.619	-	-	-	-	-	0.619
E99105 / Soldier Enhancement Program Ammo			-	-	0.589	-	-	0.253	-	-	-	-	-	-	-	-	-	-	-	-
E99222 / Foreign Weapons Training Ammunition			-	-	1.135	-	-	0.496	-	-	0.497	-	-	0.499	-	-	-	-	-	0.499
EA0600 / AMMUNITION PROGRAM SUPPORT			-	-	66.375	-	-	4.207	-	-	4.869	-	-	4.895	-	-	-	-	-	4.895
EA0960 / USAMTU FT BENNING			-	-	38.994	-	-	1.553	-	-	1.756	-	-	1.287	-	-	-	-	-	1.287
Subtotal: Various Items			-	-	140.582	-	-	7.580	-	-	8.213	-	-	7.300	-	-	-	-	-	7.300
Total			-	-	140.582	-	-	7.580	-	-	8.213	-	-	7.300	-	-	-	-	-	7.300

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

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous	P-1 Line Item Number / Title: 4370EA0575 / Ammunition Peculiar Equipment
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	357.090	10.500	10.044	12.338	-	12.338	12.738	12.939	13.036	13.187	-	441.872
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	357.090	10.500	10.044	12.338	-	12.338	12.738	12.939	13.036	13.187	-	441.872
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	357.090	10.500	10.044	12.338	-	12.338	12.738	12.939	13.036	13.187	-	441.872

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

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

Description:

The Ammunition Peculiar Equipment (APE) program provides support for ammunition operations including surveillance, demilitarization (demil), maintenance, renovation, modification, packaging, and preservation per Army Regulation 700-20, Ammunition Peculiar Equipment. APE is developed, acquired, and supervised through the Single Manager for Conventional Ammunition per Department of Defense Instruction 5160.68. APE provides equipment items specifically designed, fabricated, procured, tested, and adopted for use in worldwide United States (US) military ammunition depot operations on conventional ammunition. APE maintains a central source of standard, modern, safe, efficient, reliable, and environmentally acceptable equipment for ammunition operations. This equipment is different from production line plant equipment as it disassembles ammunition items into components, sorts and removes hazardous materials to reduce human interaction and improves personnel safety. Maintenance APE is also designed to perform cleaning and renovation functions on ammunition subjected to deterioration effects (rust, corrosion, weathering, etc) during its storage life. APE supporting surveillance is key to stockpile sampling and functional testing of the items to assure readiness for combat or training. Demilitarization APE is similar to maintenance APE, but must go further in disassembly to destroy hazardous components, sort and reclaim salvageable parts or metals.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous	P-1 Line Item Number / Title: 4370EA0575 / Ammunition Peculiar Equipment
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

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	EA0575 / Ammunition Peculiar Equipment				- / 357.090	- / 10.500	- / 10.044	- / 12.338	- / -	- / 12.338
P-40	Total Gross/Weapon System Cost				- / 357.090	- / 10.500	- / 10.044	- / 12.338	- / -	- / 12.338

*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 Base procurement dollars in the amount of \$12.338 million will be used to procure and repair Ammunition Peculiar Equipment to assist in the maintenance, surveillance and demilitarization missions at depots around the world. APE is required to support the Ammunition Stockpile Reliability Program, Surveillance Program, equipment for worldwide maintenance and demilitarization, prepositioned ships, and Government-Owned, Contractor-Operated plants as Government Furnished Equipment. The APE assets maintain and verify the quality of the ammunition stockpile; thereby saving the cost of purchasing new replacement ammunition. APE proficiently executes the ammunition demilitarization mission to safely perform disassembly, destruction, or removal processes with an emphasis on recycling, re-utilization and preserving demilitarization assets in a manner that supports ammunition sustainment, safety and environmental compliance.

The program provides global support to the US Military Services for ammunition sustainment and demilitarization operations, including deployment, operations and support of the Ammunition Supply Point (ASP) suites. The ASP suites include APE, which will increase the efficiency of the receipt, inspection and issuance of ammunition to the warfighter. Deployment of APE to support ASP suites will increase efficiencies for ammunition sustainment operations by reducing logistics burdens and related risks. This allows for better primary mission readiness, enhanced hazardous operations safety and more efficient operating conditions requiring less ammunition retrograde/demilitarization by providing capability to preserve ammunition assets.

The APE program supports multiple demilitarization processes across the Army's organic base; one of the most widely utilized capabilities is the APE 1236 incinerator and support equipment. The program performed a downtime and efficiency study of this equipment and began implementing initial equipment upgrades and modifications in accordance with a priority roadmap. These modifications will continue throughout and beyond FY 2021. FY 2021 dollars will be used to procure, install, integrate and test upgrades at tier 1 and 2 organic facilities. The program will also provide updated specific facility documentations including: technical drawing packages, standard operating procedures, hazard analyses and equipment maintenance responsibilities and procedures.

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 50	P-1 Line Item Number / Title: 4370EA0575 / Ammunition Peculiar Equipment	Item Number / Title [DODIC]: EA0575 / Ammunition Peculiar Equipment

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	357.090	10.500	10.044	12.338	-	12.338
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	357.090	10.500	10.044	12.338	-	12.338
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	357.090	10.500	10.044	12.338	-	12.338

(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 - Contractor Logistics Support (CLS) Cost																		
Oversight	-	-	6.479	-	-	-	-	-	0.500	-	-	0.500	-	-	-	-	-	0.500
<i>Subtotal: Support - Contractor Logistics Support (CLS) Cost</i>	-	-	6.479	-	-	-	-	-	0.500	-	-	0.500	-	-	-	-	-	0.500
Support - Fielding Cost																		
Fielding	-	-	18.332	-	-	0.200	-	-	0.200	-	-	0.276	-	-	-	-	-	0.276
<i>Subtotal: Support - Fielding Cost</i>	-	-	18.332	-	-	0.200	-	-	0.200	-	-	0.276	-	-	-	-	-	0.276
Support - Initial Spares and Repair Parts Cost																		
Initial Spares and Repair Parts	-	-	45.830	-	-	3.000	-	-	3.000	-	-	1.750	-	-	-	-	-	1.750
<i>Subtotal: Support - Initial Spares and Repair Parts Cost</i>	-	-	45.830	-	-	3.000	-	-	3.000	-	-	1.750	-	-	-	-	-	1.750
Support - Peculiar Support Equipment Cost																		
Test and Measurement Equipment	-	-	36.666	-	-	3.500	-	-	3.500	-	-	4.737	-	-	-	-	-	4.737
<i>Subtotal: Support - Peculiar Support Equipment Cost</i>	-	-	36.666	-	-	3.500	-	-	3.500	-	-	4.737	-	-	-	-	-	4.737
Support - Product Improvement Cost																		
Safety	-	-	1.451	-	-	1.600	-	-	0.644	-	-	2.550	-	-	-	-	-	2.550
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	1.451	-	-	1.600	-	-	0.644	-	-	2.550	-	-	-	-	-	2.550

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 50		P-1 Line Item Number / Title: 4370EA0575 / Ammunition Peculiar Equipment
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Item Number / Title [DODIC]: EA0575 / Ammunition Peculiar Equipment		

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 - Recapitalization Cost																		
Recapitalization	-	-	223.889	-	-	2.000	-	-	2.000	-	-	2.250	-	-	-	-	-	2.250
<i>Subtotal: Support - Recapitalization Cost</i>	-	-	223.889	-	-	2.000	-	-	2.000	-	-	2.250	-	-	-	-	-	2.250
Support - Staging and Transportation Cost																		
Staging and Transportation	-	-	24.443	-	-	0.200	-	-	0.200	-	-	0.275	-	-	-	-	-	0.275
<i>Subtotal: Support - Staging and Transportation Cost</i>	-	-	24.443	-	-	0.200	-	-	0.200	-	-	0.275	-	-	-	-	-	0.275
Gross/Weapon System Cost	-	-	357.090	-	-	10.500	-	-	10.044	-	-	12.338	-	-	-	-	-	12.338

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous	P-1 Line Item Number / Title: 4758EA0550 / First Destination Transportation (AMMO)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	973.917	18.456	18.492	15.908	-	15.908	16.369	17.126	17.615	18.182	-	1,096.065
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	973.917	18.456	18.492	15.908	-	15.908	16.369	17.126	17.615	18.182	-	1,096.065
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	973.917	18.456	18.492	15.908	-	15.908	16.369	17.126	17.615	18.182	-	1,096.065

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

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

Description:

Transportation funds are required to support the distribution of Army ammunition end items and components (Interim Transportation). Distribution originates from and to Continental United States (CONUS) and Outside Continental United States (OCONUS) manufacturing plants/contractors, and/or assembly points, e.g., Army Ammunition Plants (AAPs), Arsenals; Defense Contract Management Centers to include Off Shore Procurement Contractors shipping under Free On Board shipping origin terms. Requirements are either destined for CONUS depots for acceptance into the Army Supply System, to CONUS Customers, to CONUS Arsenals, and to ports of embarkation in support of the Call Forward Program, i.e., Training, War Reserves or the Overseas Contingency Operations (OCO).

Justification:

FY 2021 funds in the amount of \$15.908 million are required to support Army ammunition end item and component distribution from the point of manufacture to the point of initial receipt into the Army's supply system in accordance with the requirements outlined in DoD FMR 7000.14-R.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 50: Miscellaneous	P-1 Line Item Number / Title: 9615EA8500 / Closeout Liabilities
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.517	0.080	-	0.099	-	0.099	0.099	0.099	0.099	0.099	-	1.092
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.517	0.080	-	0.099	-	0.099	0.099	0.099	0.099	0.099	-	1.092
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.517	0.080	-	0.099	-	0.099	0.099	0.099	0.099	0.099	-	1.092

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

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

Description:

Funding will pay contract termination cost and operational losses/claims at ammunition plants. This funding ensures unanticipated future contract liabilities can be satisfied in accordance with Army Contract Review Board (ACRB) approved actions.

Justification:

FY 2021 procurement dollars are required to pay contingent liabilities such as contract termination cost, e.g., unfunded pension liabilities, severance pay, and other claims approved by the ACRB.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 02: Ammunition Production Base Support / BSA 10: Production Base Support	P-1 Line Item Number / Title: 0572EP1000 / Industrial Facilities
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	8,428.106	459.792	474.511	592.224	-	592.224	540.960	488.175	491.712	496.621	-	11,972.101
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	8,428.106	459.792	474.511	592.224	-	592.224	540.960	488.175	491.712	496.621	-	11,972.101
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	8,428.106	459.792	474.511	592.224	-	592.224	540.960	488.175	491.712	496.621	-	11,972.101

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

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

Description:

This budget line provides funding for modernization, construction and rehabilitation efforts at Government-Owned, Contractor-Operated Army Ammunition Plants (AAPs) and commercial facilities as well as preservation of inactive production lines at the AAPs. The AAPs were constructed during World War II; the facilities have served and supported numerous theater operations, providing the warfighter with expansive ammunition requirements. Due to their age, the facilities and infrastructure experience frequent failures, and the production lines operate with outdated technology processes and equipment. The Industrial Facilities (IF) budget line consists of three separate programs, Provision of Industrial Facilities (PIF), Layaway of Industrial Facilities (LIF) and Maintenance of Inactive Facilities (MIF). Its mission includes replacement of obsolete or worn production equipment, correction of deficiencies and upgrades to infrastructures. This line represents an enduring, exhaustive mission to modernize and equip the Army's Ammunition Plants and provide decisive advantage of the warfighter's conventional ammunition, explosives and propellant requirements, without delay and at optimal cost. Project Director (PD) Joint Services, under Joint Program Executive Office Armaments and Ammunition, manages the Industrial Facilities budget line.

The Provision of Industrial Facilities program (PIF), SSN EP1200, establishes, augments and improves ammunition production capabilities through strategic modernization efforts, expands production capacity, maintains environmental compliance, and improves quality of work environment and safety at ammunition plants. It also addresses emergency modernization and associated construction to mitigate production disruptions at various sites.

This budget line provides funding for preservation, storage and movement of real property facilities and equipment required for anticipated future requirements at active and inactive Army ammunition installations including the Quad City Cartridge Case Facility (QCCCF) and Government-Owned, Government-Operated AAPs, also known as Layaway of Industrial Facilities (LIF) activities, SSN EP2000. Funding will also support consolidation of layaway production equipment and redistribution of production equipment that cannot be stored on-site. Layaway efforts also include retaining critical operational and technical knowledge of production equipment, such as engineering designs, process data and control manufacturing practices. Layaway program also includes safety-related decontamination, disposal and demolition of production equipment and facilities, and environmental site assessments.

Procurement funds also support the Maintenance of Inactive Facilities (MIF), SSN EP1500, to include utilities, buildings, plant equipment, special tooling, and special test equipment being retained to support future production requirements at GOCO and GOGO AAPs and QCCCF. Additional efforts include support of associated MIF costs such as grounds maintenance, fire protection, equipment security, and administrative support.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 02: Ammunition Production Base Support / BSA 10: Production Base Support

P-1 Line Item Number / Title:
0572EP1000 / Industrial Facilities

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

Line Item MDAP/MAIS Code: N/A

Project Schedule		Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Project	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)
(Uncategorized)		-	459.792	474.511	592.224	-	592.224
	Holston Army Ammunition Plant	-	215.443	197.000	290.400	-	290.400
P-25	5201000 - Plant Operations, Major Maintenance	-	-	13.500	-	-	-
P-25	5XX3214 - Treatment Technology Alternatives to Open Burning	-	10.030	-	36.000	-	36.000
P-25	5203579 - Landfill Expansion	-	-	16.400	-	-	-
P-25	5193752 - Install Additional Media Filters, Industrial Wastewater Treatment Facility (IWWTF)	-	0.435	-	-	-	-
P-25	5193964 - A2B Modernization Improvements, Facilities and Maintenance	-	7.034	-	-	-	-
P-25	5XX5055 - Modernized Melt-Cast Facility, Construct	-	1.020	15.000	-	-	-
P-25	5195096 - Ansol Treatment	-	11.007	-	-	-	-
P-25	5195097 - Combined Wash/Filter Facility, Construct	-	78.546	-	-	-	-
P-25	5205098 - RDX Wastewater Point Source Treatment	-	-	16.800	-	-	-
P-25	5195099 - Natural Gas Fired Stream Plant	-	5.648	-	-	-	-
P-25	5205100 - WAARP Facility Train II, Construct	-	-	65.000	-	-	-
P-25	5205101 - WAARP Tank Farms, B-3, Construct	-	-	30.000	-	-	-
P-25	5205102 - SNA Mod Improvements	-	-	8.800	-	-	-
P-25	5195104 - Activate Building G-3 for RDX/NQ Recrystallization Construction	-	74.756	-	-	-	-
P-25	5205106 - Ansol Filtration	-	-	20.000	-	-	-
P-25	5XX5110 - Area B Third Acid Train, Design/Construct	-	16.801	-	70.000	-	70.000
P-25	5215116 - New Kettle Drying Facility	-	-	-	40.000	-	40.000
P-25	5XX5151 - Nitration Facility, Design/Construct	-	5.561	-	92.000	-	92.000
P-25	5205154 - Critical Spares	-	-	7.000	-	-	-
P-25	5XX5168 - ANSol Tank Farms, (B-5, B-11), Construct	-	4.605	-	30.000	-	30.000
P-25	5XX5176 - Building N-8, Repair/Upgrades	-	-	4.500	16.900	-	16.900
P-25	5215177 - Barricade Modernization Upgrades	-	-	-	3.500	-	3.500
P-25	5215178 - TATB Production Facility, Mod Upgrades	-	-	-	2.000	-	2.000
	Iowa Army Ammunition Plant	-	21.528	42.361	142.760	-	142.760
P-25	5203410 - Replace Main Sewage	-	-	8.790	-	-	-
P-25	5193536 - Critical Bridge Repair	-	0.225	-	-	-	-
P-25	5193692 - Central Fire Alarm Reporting System, Phase 2	-	0.279	-	-	-	-
P-25	5203745 - Roadway Mod Improvements (Roads A & C)	-	-	6.300	-	-	-
P-25	5193788 - Security Automation	-	0.072	-	-	-	-
P-25	5193794 - Rail System Upgrades	-	8.777	-	-	-	-
P-25	5XX5030 - IAAAP Footprint Reduction - Long Range Precision Artillery Production Facility	-	11.219	-	135.600	-	135.600
P-25	5205033 - Distributed Gas Boiler Systems	-	-	9.500	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
 2034A: Procurement of Ammunition, Army / BA 02: Ammunition Production Base Support / BSA 10: Production Base Support

P-1 Line Item Number / Title:
 0572EP1000 / Industrial Facilities

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

Line Item MDAP/MAIS Code: N/A

Project Schedule		Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Project	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)
P-25	5205034 - Storage Yard Magazines Mod Upgrades	-	-	3.186	-	-	-
P-25	5XX5042 - Plant Wide Telecommunication Systems Upgrade	-	0.248	4.000	-	-	-
P-25	5XX5119 - Centralized Solid Waste Processing	-	0.265	4.075	-	-	-
P-25	5215121 - 40MM High Velocity Grenade Defuze & Refuze	-	-	-	1.760	-	1.760
P-25	5205122 - Automate M112 Bagging Operations	-	-	1.710	-	-	-
P-25	5195123 - Power Factor Capacitors	-	0.097	-	-	-	-
P-25	5215125 - Design & Construct New Metrology Lab	-	-	-	5.400	-	5.400
P-25	5195215 - HVAC Upgrades, Line 1	-	0.346	-	-	-	-
P-25	5205304 - Improve 40mm Grenade & Spitback Pressing	-	-	4.800	-	-	-
	Lake City Army Ammunition Plant	-	40.841	40.000	78.140	-	78.140
P-25	5XX3356 - Small Caliber Modernization, Next Generation Squad Weapon Ammunition facility	-	26.508	40.000	40.000	-	40.000
P-25	5193432 - Bldg 45 Fire Sprinkler Lines	-	0.411	-	-	-	-
P-25	5213459 - Primer Assembly Wing, Building 35, HVAC (Construct)	-	-	-	1.100	-	1.100
P-25	5193619 - Covered Walkways in Explosives Area	-	4.104	-	-	-	-
P-25	5213652 - HVAC Modifications, Loading And Exhaust (Construct)	-	-	-	22.340	-	22.340
P-25	5193718 - Conceptual Design, Building 15 Boiler Plant	-	0.525	-	-	-	-
P-25	5213792 - IWTP Lagoon Liners & Filter Press	-	-	-	14.000	-	14.000
P-25	5193796 - Bldg 8 Indoor Firing Range, HVAC I&C (Design)	-	1.681	-	-	-	-
P-25	5193937 - Electrical Poles Mod Upgrades	-	2.488	-	-	-	-
P-25	5195007 - Bldgs 7, 12B, 93 Roof Replacement	-	2.258	-	-	-	-
P-25	5215025 - Utility Systems Protection	-	-	-	0.700	-	0.700
P-25	5195138 - B50 Fire Pump Replacement	-	2.866	-	-	-	-
	Radford Army Ammunition Plant	-	149.121	55.154	-	-	-
P-25	5192736 - Construct New Nitrocellulose (NC) Facility	-	2.184	-	-	-	-
P-25	5193449 - Modernize Nitroglycerin (NG-2) Facility	-	8.553	-	-	-	-
P-25	5203559 - Upgrade Water System, Fire Protection	-	-	9.472	-	-	-
P-25	5203567 - Barricade Replacement, Ph 1	-	-	9.400	-	-	-
P-25	5193613 - Upgrade Facility Change Houses	-	5.014	-	-	-	-
P-25	5203672 - Lightning Protection, Production Areas, Ph 3	-	-	2.899	-	-	-
P-25	5193723 - Combined EWI-CWP Facility, Construction	-	114.240	-	-	-	-
P-25	5193741 - Water Intake Pump Upgrade (Building 407)	-	17.789	-	-	-	-
P-25	5203753 - Workplace Safety Upgrades, Ph 1	-	-	18.990	-	-	-
P-25	5195088 - Structural Repairs	-	1.341	-	-	-	-
P-25	5205140 - NC Solvent Slurry Transfer Line	-	-	5.000	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
2034A: Procurement of Ammunition, Army / BA 02: Ammunition Production Base Support / BSA 10: Production Base Support

P-1 Line Item Number / Title:
0572EP1000 / Industrial Facilities

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

Line Item MDAP/MAIS Code: N/A

Project Schedule		Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Project	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)
P-25	5205141 - Solventless/Rocket Area, Prod Operations	-	-	4.459	-	-	-
P-25	5205145 - Solvent Propellant Facility Sustainment, Ph 1	-	-	4.934	-	-	-
	Scranton Army Ammunition Plant	-	-	8.100	-	-	-
P-25	5205179 - 155MM XM Flexline Mod	-	-	8.100	-	-	-
	Various Army Ammunition Plants	-	11.619	113.911	65.624	-	65.624
P-25	5XX0000 - Planning & Design in Support of Provision of Industrial Facilities	-	10.433	105.097	65.624	-	65.624
P-25	5XX5169 - Cyber Critical Infrastructure Risk Management (CIRM) Resiliency	-	1.186	8.814	-	-	-
	Yuma Proving Ground / Aberdeen Test Center	-	1.458	-	-	-	-
P-25	5195060 - Replace Test Instrumentation in Production Acceptance Testing (Ammunition)	-	1.458	-	-	-	-
	Maintenance of Inactive Facilities	-	1.780	6.461	5.195	-	5.195
P-25	5XX4073 - Maintenance of Inactive Facilities	-	1.780	6.461	5.195	-	5.195
	Layaway Of Industrial Facilities	-	18.002	11.524	10.105	-	10.105
P-25	5XX8000 - Layaway Of Industrial Facilities	-	18.002	11.524	10.105	-	10.105
Total Gross/Weapon System Cost		-	459.792	474.511	592.224	-	592.224

*For the P-17 and P-25, the Project column displays a three-level indentation: Project Category (e.g., Environmental), followed by the Facility, followed by the Project Name. Exhibits with no Project Category are included under the "Uncategorized" category. For the P-26, the Project column displays a two-level indentation: Project Type (e.g., Inactive Plants, Inactive Lines at Contractor Plants and Inactive Lines at Active Plants), followed by the Facility. Note also that although all P-17, P-25 and P-26 projects are shown in the project schedule, not all projects will have a corresponding exhibit. A P-17 or P-25 exhibit is only included if data beyond the Project Number, Project Title and Cost are included (for example: for the P-17, Description, Manufacturer, etc.; for the P-25, Narrative Explanation, Cost Elements, Principle Milestones, etc.). A P-26 exhibit is only included if data beyond Project Type and Total Cost are included (for example, Description, Contractor, Maintenance/Recurring/Environmental/Other costs, etc.).

Justification:
 FY 2021 procurement dollars in the amount of \$592.224 million will support modernization projects to include modernization upgrades to the small caliber, Next Generation Squad Weapon ammunition production facility at Lake City Army Ammunition Plant (AAP) and construction of a new long range precision artillery production facility at Iowa AAP. Funds also support modernization projects to expand the annual production capacity of Research Development Explosive (RDX) at Holston AAP from approximately eight million pounds to fifteen million. Efforts include construction of the third Area B Acid Train and construction of a nitration facility. Funds also support infrastructure upgrades at Holston, Iowa, Lake City, Radford, and Scranton AAPs, and work environment projects, improvements for personnel safety and health, and efforts to maintain environmental compliance at the ammunition plants. Funds will provide engineering support of industrial facilities, pre-design efforts for future-year modernization projects.

FY 2021 funding also supports the protection and preservation of industrial facilities at active and inactive Army ammunition installations and equipment that is no longer required for current production but must be retained for future production needs. Funds support the decontamination and demolition of excess production equipment and facilities buildings at Radford and Milan Army Ammunition Plant and Pine Bluff Arsenal.

FY 2021 funding supports the care and maintenance of layaway equipment and facilities at active and inactive ammunition installations.

The P-25s are under review.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Plant Operations, Major Maintenance **Project Number:** 5201000 **Project Category:**

End Item Supported Model: Research Develop Expl(RDX),High Melt Expl(HMX),Insensitive Mun Expl(IMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	-	13.500	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2020 Construction Complete: Apr 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects						
B. Equipment Cost	-	-	-	-	-		Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	-	13.500	-	-	-								

Narrative Explanation:
 Procurement dollars in the amount of \$13.500 million support major maintenance repairs and upgrades at Holston Army Ammunition Plant (AAP). These repairs will ensure continuity of explosives manufacturing at Holston AAP.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Treatment Technology Alternatives to Open Burning **Project Number:** 5XX3214 **Project Category:**

End Item Supported Model: Research Develop Expl(RDX),High Melt Expl(HMX),Insensitive Mun Expl(IMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	36.000	-	36.000	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Aug 2022 Initial/Final Project Award: Feb 2020 / May 2021 Construction Complete: May 2023 Equipment Installation Complete: Prove Out Begins: May 2023 Prove Out Complete: Nov 2023						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	0.600	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	9.430	-	-	-	-							
Total Project Cost	10.030	-	36.000	-	36.000	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$36.000 million supports construction of a thermal treatment, flashing furnace facility at Holston Army Ammunition Plant (AAP). Contaminated materials including contaminated plastics, rubber and other materials are generated during the explosives manufacturing process. These materials are currently open burned at the installation. Holston AAP is required to reduce or eliminate open burning of Material Potentially Presenting an Explosive Hazard (MPPEH) in compliance with DoD Explosives Safety Board (DDESB) and Tennessee Department of Environment and Conservation (TDEC) requirements. This effort supports the modernization initiative to expand annual production capacity of RDX at Holston AAP from eight million pounds to fifteen million pounds.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Landfill Expansion **Project Number:** 5203579 **Project Category:**

End Item Supported Model: Research Develop Expl(RDX),High Melt Expl(HMX),Insensitive Mun Expl(IMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant						
						Facility Location: Kingsport, Tennessee						
A. Construction Cost	-	16.400	-	-	-	Facility Type (GOGO, GOCO, COCO): GOCO						
B. Equipment Cost	-	-	-	-	-	Principal Milestones Month & Year						
C. Equipment Installation Cost	-	-	-	-	-	Concept Design Complete:						
D. Contractor Support Cost	-	-	-	-	-	Final Design Complete:						
E. Corps of Engineers Support Cost	-	-	-	-	-	Initial/Final Project Award: Sep 2020						
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete: Sep 2022						
G. Total Facility Project Cost	-	-	-	-	-	Equipment Installation Complete:						
H. Other Costs	-	-	-	-	-	Prove Out Begins: Sep 2022						
Total Project Cost	-	16.400	-	-	-	Prove Out Complete: Mar 2023						
Related Projects												
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date					

Narrative Explanation:
Procurement dollars in the amount of \$16.400 million supports this facilities and maintenance effort to expand existing Holston Army Ammunition Plant (AAP) landfill. The existing Class II landfill will reach capacity in 2022. This effort will create more waste disposal capacity at Holston AAP and support future production operations. The project will include an associated leachate management system. The design phase was initiated in 2017 and funded in FY 2017 and will complete October 2020.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Install Additional Media Filters, Industrial Wastewater Treatment Facility (IWWTF) **Project Number:** 5193752 **Project Category:**

End Item Supported Model: Research Develop Expl(RDX),High Melt Expl(HMX),Insensitive Mun Expl(IMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	0.435	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2019 Construction Complete: Jan 2020 Equipment Installation Complete: Prove Out Begins: Jan 2020 Prove Out Complete: Mar 2020						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	0.435	-	-	-	-							
Related Projects						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$0.435 million supports installation of additional media filter sets at Holston Army Ammunition Plant. The filters will enhance removal of turbidity, microorganisms, and suspended solids from treated aqueous waste stream. These funds supported differing site conditions change request which required replacement of four valves and twenty actuators. This will allow for uninterrupted manufacturing of Insensitive Munition Explosives (IMX), Research Development Explosives (RDX), and High Melt Explosives (HMX) production, improve treatment of nitrates loading into the IWWTF, and comply with the National Pollutant Discharge Elimination System permit.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: A2B Modernization Improvements, Facilities and Maintenance **Project Number:** 5193964 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	7.034	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Apr 2019 Construction Complete: Jun 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	7.034	-	-	-	-								
Related Projects							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$7.034 million supports effort to modernize and improve the Acid Area Consolidation effort (A2B) at Holston Army Ammunition Plant (AAP). The A2B initiative relocated acid production operations in Area A and consolidated them in Area B at Holston AAP. These funds support repair of the current A2B acetyl refining process to ensure minimum production of 160,000 pounds per day of glacial acetic acid per column.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10		P-1 Line Item Number / Title: 0572EP1000 / Industrial Facilities
Project Title: Modernized Melt-Cast Facility, Construct		Project Number: 5XX5055
End Item Supported Model: Insensitive Munitions (IM) Explosives, TNT, Research Development Explosives (RDX)		Project Category:
		Annual Capacity Before / After (1-8-5): /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant						
A. Construction Cost	-	15.000	-	-	-	Facility Location: Kingsport, Tennessee						
B. Equipment Cost	-	-	-	-	-	Facility Type (GOGO, GOCO, COCO): GOCO						
C. Equipment Installation Cost	-	-	-	-	-	Principal Milestones			Month & Year			
D. Contractor Support Cost	-	-	-	-	-	Concept Design Complete:			Feb 2020			
E. Corps of Engineers Support Cost	-	-	-	-	-	Final Design Complete:			Jul 2019 / Sep 2020			
F. Other In-House Support Cost	-	-	-	-	-	Initial/Final Project Award:			Dec 2022			
G. Total Facility Project Cost	-	-	-	-	-	Construction Complete:			Dec 2022			
H. Other Costs	1.020	-	-	-	-	Equipment Installation Complete:			Dec 2022			
Total Project Cost	1.020	15.000	-	-	-	Prove Out Begins:			Dec 2022			
						Prove Out Complete:			Jul 2023			
Related Projects												
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:

Procurement dollars in the amount of \$15.000 million supports construction of a melt-cast facility at Holston Army Ammunition Plant (AAP). Holston AAP is currently implementing an Insensitive Munitions Explosives (IMX) modernization strategy to achieve an annual IMX capacity of eight million pounds. The expanded production capacity will require additional, modernized casting capacity. The existing facility, Building M-3, cannot meet the future production requirements; additionally it lacks precise temperature control and uniform agitation necessary to attain insensitive properties and consistent quality that IMX class of products require. Holston AAP is the only qualified source of IMX melt-cast explosives in the National Technology and Industrial Base.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Ansol Treatment **Project Number:** 5195096 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO														
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Dec 2022 Initial/Final Project Award: Mar 2020 / Sep 2020 Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:														
B. Equipment Cost	-	-	-	-	-															
C. Equipment Installation Cost	-	-	-	-	-															
D. Contractor Support Cost	-	-	-	-	-															
E. Corps of Engineers Support Cost	0.990	-	-	-	-															
F. Other In-House Support Cost	-	-	-	-	-															
G. Total Facility Project Cost	-	-	-	-	-															
H. Other Costs	10.017	-	-	-	-															
Total Project Cost	11.007	-	-	-	-															
							Related Projects													
						<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Project Number</th> <th style="width: 40%;">Title</th> <th style="width: 10%;">FY & Appn</th> <th style="width: 10%;">Value (\$ M)</th> <th style="width: 10%;">Facing</th> <th style="width: 10%;">Start Date</th> <th style="width: 10%;">Compl Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date							
Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date														

Narrative Explanation:
 Procurement dollars in the amount of \$11.007 million supports design of an Ammonium Nitrate Solution (ANSOL) treatment facility at Holston Army Ammunition Plant (AAP). In the past, ANSOL has been transferred as a low-cost feed stock into the ammonium nitrate/fuel oil (ANFO) explosives industry (mining, quarry, civil usages). Existing users of Ammonium Nitrate/Fuel Oil (AN/FO) are not utilizing this material at this time due to composition fluctuations and odor issues. Failure to treat ANSOL will result shutdown of explosives production operations at Holston AAP. This effort supports the modernization initiative to expand annual production capacity of RDX at Holston AAP from eight million pounds to fifteen million pounds.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Combined Wash/Filter Facility, Construct **Project Number:** 5195097 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO				
A. Construction Cost	71.000	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Feb 2020 Construction Complete: Mar 2023 Equipment Installation Complete: Dec 2022 Prove Out Begins: Jan 2023 Prove Out Complete: Aug 2023				
B. Equipment Cost	-	-	-	-	-					
C. Equipment Installation Cost	-	-	-	-	-					
D. Contractor Support Cost	-	-	-	-	-					
E. Corps of Engineers Support Cost	-	-	-	-	-					
F. Other In-House Support Cost	-	-	-	-	-					
G. Total Facility Project Cost	-	-	-	-	-					
H. Other Costs	7.546	-	-	-	-					
Total Project Cost	78.546	-	-	-	-					
Related Projects										
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date			

Narrative Explanation:
 Procurement dollars in the amount of \$78.546 million supports construction of a combined Wash and Filtration facility at Holston Army Ammunition Plant. This effort supports the modernization initiative to expand annual production capacity of RDX at Holston AAP from eight million pounds to fifteen million pounds. The existing Wash/Filtration capabilities at building E-6 and E-3 cannot support future RDX production requirements. The new facility will be designed to support a minimum annual production of nine million pounds of washed crude RDX or 2.3 million pounds of High Melt Explosives (HMX). Effort also supports risk mitigation effort to develop a conceptual design for an integrated nitration, filter and wash, recrystallization, and dewatering facility; this conceptual design supports flexibility assessment to produce future energetics in the same production facilities.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: RDX Wastewater Point Source Treatment **Project Number:** 5205098 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant						
						Facility Location: Kingsport, Tennessee						
A. Construction Cost	-	16.800	-	-	-	Facility Type (GOGO, GOCO, COCO): GOCO						
B. Equipment Cost	-	-	-	-	-	Principal Milestones Month & Year						
C. Equipment Installation Cost	-	-	-	-	-	Concept Design Complete:						
D. Contractor Support Cost	-	-	-	-	-	Final Design Complete:						
E. Corps of Engineers Support Cost	-	-	-	-	-	Initial/Final Project Award: Jul 2020						
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete: Aug 2022						
G. Total Facility Project Cost	-	-	-	-	-	Equipment Installation Complete:						
H. Other Costs	-	-	-	-	-	Prove Out Begins: Aug 2022						
Total Project Cost	-	16.800	-	-	-	Prove Out Complete: Dec 2022						
Related Projects												
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date					

Narrative Explanation:
 Procurement dollars in the amount of \$16.800 million supports expansion and modernization of the Research Development Explosives (RDX) Wastewater Point Source Treatment facility at Holston Army Ammunition Plant. The Industrial Waste Water Treatment Facility (IWWTF) treats process wastewater from the production of nitramine-based explosive compounds, acetic acid and acetic anhydride, nitric acid production, and insensitive munitions production. Effort includes reactivation and modernization of clarifiers one and two, neutralization basin, and all associated infrastructure improvements. Additional treatment capacities are required to support the modernization initiative to expand annual RDX production capacity from eight million pounds to fifteen million pounds.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Natural Gas Fired Stream Plant **Project Number:** 5195099 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant						
						Facility Location: Kingsport, Tennessee						
A. Construction Cost	5.648	-	-	-	-	Facility Type (GOGO, GOCO, COCO): GOCO						
B. Equipment Cost	-	-	-	-	-	Principal Milestones Month & Year						
C. Equipment Installation Cost	-	-	-	-	-	Concept Design Complete:						
D. Contractor Support Cost	-	-	-	-	-	Final Design Complete:						
E. Corps of Engineers Support Cost	-	-	-	-	-	Initial/Final Project Award: Sep 2019 / Jan 2020						
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete: Mar 2021						
G. Total Facility Project Cost	-	-	-	-	-	Equipment Installation Complete:						
H. Other Costs	-	-	-	-	-	Prove Out Begins:						
Total Project Cost	5.648	-	-	-	-	Prove Out Complete:						
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$5.648 million supports expansion of the Natural Gas Fired Steam Plant at Holston Army Ammunition Plant (AAP). Additional capacities are required to support the modernization initiative to expand annual RDX production capacity from eight million pounds to fifteen million pounds. These funds support two tasks to recoat and wrap two natural gas pipelines that were experiencing corrosion. Additionally, a new metering station will be installed to yield an increased flow of natural gas and maintain production continuity of the steam plant. This project will allow Holston AAP to maintain compliance with federal and state regulatory requirements, including the Prevention of Significant Deterioration (PSD) mandate and utilize Best Available Control Technologies (BACT).

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: WAARP Facility Train II, Construct **Project Number:** 5205100 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO	
A. Construction Cost	-	55.000	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2020 Construction Complete: Sep 2022 Equipment Installation Complete: Sep 2022 Prove Out Begins: Oct 2022 Prove Out Complete: Jan 2023	
B. Equipment Cost	-	10.000	-	-	-		
C. Equipment Installation Cost	-	-	-	-	-		
D. Contractor Support Cost	-	-	-	-	-		
E. Corps of Engineers Support Cost	-	-	-	-	-		
F. Other In-House Support Cost	-	-	-	-	-		
G. Total Facility Project Cost	-	-	-	-	-		
H. Other Costs	-	-	-	-	-		
Total Project Cost	-	65.000	-	-	-		
Related Projects							
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$65.000 million supports the construction of a second modernized facility to recover weak acetic acid for RDX/HMX production at Holston Army Ammunition Plant. The existing weak acetic acid recovery (WAARP) facility, Building B-4, cannot meet RDX production requirements. Additional capacities are required to support the modernization initiative to expand annual RDX production capacity from eight million pounds to fifteen million pounds. The new right-sized facility addresses the increase in volume of dilute acetic acid, a byproduct of manufacturing explosives, as well as the requirement for denitrification and solids separation concentration, the byproduct of acetic anhydride manufacturing.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: WAARP Tank Farms, B-3, Construct **Project Number:** 5205101 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO														
A. Construction Cost	-	25.000	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2020 Construction Complete: Sep 2022 Equipment Installation Complete: Sep 2022 Prove Out Begins: Oct 2022 Prove Out Complete: Jan 2023														
B. Equipment Cost	-	5.000	-	-	-															
C. Equipment Installation Cost	-	-	-	-	-															
D. Contractor Support Cost	-	-	-	-	-															
E. Corps of Engineers Support Cost	-	-	-	-	-															
F. Other In-House Support Cost	-	-	-	-	-															
G. Total Facility Project Cost	-	-	-	-	-															
H. Other Costs	-	-	-	-	-															
Total Project Cost	-	30.000	-	-	-															
							Related Projects													
						<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Project Number</th> <th style="width: 40%;">Title</th> <th style="width: 10%;">FY & Appn</th> <th style="width: 10%;">Value (\$ M)</th> <th style="width: 10%;">Facing</th> <th style="width: 10%;">Start Date</th> <th style="width: 10%;">Compl Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date							
Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date														

Narrative Explanation:
 Procurement dollars in the amount of \$30.000 million supports construction of the modernized Weak Acid Area Recovery Process (WAARP) Tank Farm at Holston Army Ammunition Plant. The current tank farm was installed in the 1970's. Tank contents include nitric acid and Ammonium Nitrate Solution (ANSol) and waste acid from explosives manufacturing. The storage capability is critical to maintaining explosives operations. This project will expand and replace the aging chemical storage tanks, transfer equipment and containment dike at the B-3 tank farm. Additional capacities are required to support the modernization initiative to expand annual RDX production capacity from eight million pounds to fifteen million pounds.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: SNA Mod Improvements **Project Number:** 5205102 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	8.800	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jul 2020 Construction Complete: Jan 2023 Equipment Installation Complete: Prove Out Begins: Jan 2023 Prove Out Complete: May 2023						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	8.800	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$8.800 million supports the modernization the strong nitric acid (SNA) tank farm at Holston Army Ammunition Plant (AAP). Holston AAP will require an increase in rail traffic associated with receipt of SNA 503. The Acids area currently has two SNA tanks in service at the 320 tank farm. The lack of properly engineered and installed dry air system to eliminate atmospheric air entering the head space of these SNA tanks has caused corrosion problems on the SNA tanks. If a tank failed, it could cause a shortage of SNA. The SNA tanks also lack adequate storage capacity. The design effort will include installation of two additional tanks, provide nitrogen blankets to reduce corrosion, dry air system for unloading, scrubber system, tank car unloading/loading station, truck pad with unloading station and a balanced arm for overhead connections.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Activate Building G-3 for RDX/NQ Recrystallization Construction **Project Number:** 5195104 **Project Category:**

End Item Supported Model: Research Develop Expl(RDX), Insensitive Mun Expl(IMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	74.756	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Dec 2018 Construction Complete: Mar 2021 Equipment Installation Complete: Prove Out Begins: Mar 2021 Prove Out Complete: Oct 2021						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	74.756	-	-	-	-							
Related Projects						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$74.756 million supports this construction project to reactivate and modernize Building G-3 at Holston Army Ammunition Plant (AAP) to perform RDX/NQ Recrystallization and RDX formulation. This project will increase Holston AAP's capacity to produce RDX as well as continue to produce High Bulk Density Nitroguanidine (NQ) from the current industrial stock of NQ. This effort supports the modernization initiative to expand annual production capacity of RDX at Holston AAP from eight million pounds to fifteen million pounds.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Ansol Filtration **Project Number:** 5205106 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO				
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Sep 2019 Initial/Final Project Award: Sep 2020 Construction Complete: Nov 2022 Equipment Installation Complete: Prove Out Begins: Nov 2022 Prove Out Complete: Mar 2023				
B. Equipment Cost	-	-	-	-	-					
C. Equipment Installation Cost	-	-	-	-	-					
D. Contractor Support Cost	-	-	-	-	-					
E. Corps of Engineers Support Cost	-	-	-	-	-					
F. Other In-House Support Cost	-	-	-	-	-					
G. Total Facility Project Cost	-	-	-	-	-					
H. Other Costs	-	20.000	-	-	-					
Total Project Cost	-	20.000	-	-	-					
Related Projects										
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date			

Narrative Explanation:
 Procurement dollars in the amount of \$20.000 million supports this facilities and maintenance effort to improve filtration processes of Ammonium Nitrate Solution (ANSol) at Holston Army Ammunition Plant (AAP). Effort will remove as much solids and explosive material as possible from the ANSol by-product at the Holston AAP. The ANSol Filtration System will mitigate and eliminate the current use of deep well injection for disposal of the ANSol by-product. This effort supports the modernization initiative to expand annual production capacity of Research Development Explosives (RDX) at Holston AAP from eight million pounds to fifteen million pounds.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Area B Third Acid Train, Design/Construct **Project Number:** 5XX5110 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	62.000	-	62.000	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Jan 2021 Initial/Final Project Award: Sep 2019 / Jun 2021 Construction Complete: Jan 2024 Equipment Installation Complete: Jan 2024 Prove Out Begins: Jan 2024 Prove Out Complete: Aug 2024						
B. Equipment Cost	-	-	7.500	-	7.500							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	16.801	-	0.500	-	0.500	Related Projects						
Total Project Cost	16.801	-	70.000	-	70.000							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:

FY 2021 Base procurement dollars in the amount of \$70.000 million supports construction of a third acid train facility at Holston Army Ammunition Plant (AAP). This effort supports the modernization initiative to expand annual production capacity of RDX at Holston AAP from eight million pounds to fifteen million pounds. Holston AAP requires expansion of the Acetic Acid and Acetic Anhydride production capacity which is utilized in the nitration of hexamine to crude for RDX and HMX. This modernization project will design a third acetic acid train and an additional acetic anhydride train facility at Holston. This modernization effort will eliminate reliance on the Area A process operations and improve safety as well as process reliability.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: New Kettle Drying Facility **Project Number:** 5215116 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	40.000	-	40.000	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Sep 2021 Initial/Final Project Award: Aug 2021 Construction Complete: Nov 2023 Equipment Installation Complete: Prove Out Begins: Nov 2023 Prove Out Complete: May 2024						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	40.000	-	40.000							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:

FY 2021 Base procurement dollars in the amount of \$40,000 supports construction of a new kettle drying facility at Holston Army Ammunition Plant. The existing drying facilities utilize 1940s processes and operate with degraded equipment, which have exceeded their useful life and created contamination risks in explosives products. This project will design a fourth kettle drying facility at Building L-7 which will allow for higher drying capacity and permit shutdown and modernization of existing, antiquated drying facilities. The new kettle drying facility is critical in the production of CXM-7 which is a premix for PBXN-107, bomb fill, as well as other explosives products.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Nitration Facility, Design/Construct **Project Number:** 5XX5151 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	75.000	-	75.000	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Apr 2021 Initial/Final Project Award: Dec 2019 / Sep 2021 Construction Complete: Feb 2024 Equipment Installation Complete: Feb 2024 Prove Out Begins: Feb 2024 Prove Out Complete: Aug 2024						
B. Equipment Cost	-	-	12.000	-	12.000							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	5.561	-	5.000	-	5.000	Related Projects						
Total Project Cost	5.561	-	92.000	-	92.000							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$92.000 million supports construction of a nitration facility at Holston Army Ammunition Plant. The existing batch nitration facility, Building D-5, cannot support future production requirements of RDX and HMX. The effort will construct a new nitration facility, upgrade supported infrastructure and ensure utility tie-ins. This effort supports the modernization initiative to expand annual production capacity of RDX at Holston AAP from eight million pounds to fifteen million pounds.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Critical Spares **Project Number:** 5205154 **Project Category:**

End Item Supported Model: Research Develop Expl(RDX),High Melt Expl(HMX),Insensitive Mun Expl(IMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2020 Construction Complete: Equipment Installation Complete: Dec 2021 Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	7.000	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	7.000	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:

Procurement dollars in the amount of \$7.000 million supports procurement of critical spares for explosive production operations at Holston Army Ammunition Plant. This project will include procurement of long lead equipment spares to prevent long-term production interruptions and will decrease production downtime and provide reliable backup supply for the aging components and parts across the plant to ensure production continuity.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: ANSol Tank Farms, (B-5, B-11), Construct **Project Number:** 5XX5168 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	22.500	-	22.500	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Dec 2020 Initial/Final Project Award: Dec 2019 / May 2021 Construction Complete: Apr 2023 Equipment Installation Complete: Prove Out Begins: Apr 2023 Prove Out Complete: Sep 2023						
B. Equipment Cost	-	-	7.000	-	7.000							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	4.605	-	0.500	-	0.500							
Total Project Cost	4.605	-	30.000	-	30.000	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$30.000 million supports replacement and construction of tanks B-5 and B-11 in the acid tank farms at Holston Army Ammunition Plant (AAP). The tanks support the storage of Ammonium Nitrate (ANSol), a byproduct of the Holston AAP production operations. Existing storage capacity is insufficient to support future RDX and HMX production requirements. The new Tank Farm will be compliant with all necessary RCRA (Resource Conservation and Recovery Act) requirements for the maintenance and storage of hazardous materials.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Building N-8, Repair/Upgrades **Project Number:** 5XX5176 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	4.500	16.900	-	16.900	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2020 / May 2021 Construction Complete: Apr 2023 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	4.500	16.900	-	16.900	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$16.900 million supports repairs and upgrades to Building N-8 at Holston Army Ammunition (AAP). Repairs are required to fully restore Building N-8 which was damaged during a 2018 explosion. This effort also includes associated infrastructure upgrades to electrical, steam and water lines. Effort is required to maintain explosives production continuity at Holston AAP.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Barricade Modernization Upgrades **Project Number:** 5215177 **Project Category:**

End Item Supported Model: Research Develop Expl(RDX),High Melt Expl(HMX),Insensitive Mun Expl(IMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	3.500	-	3.500	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2021 Construction Complete: May 2023 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	3.500	-	3.500							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$3.500 million supports modernization upgrades to the barricade structures at Holston Army Ammunition Plant. The existing structures were installed as early as the 1940s and have deteriorated and exceeded their useful life. The structures are required to provide explosives safety arcs and protection of surrounding facilities and buildings. This effort will reinforce and upgrade the barricades and foundations as needed.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: TATB Production Facility, Mod Upgrades **Project Number:** 5215178 **Project Category:**

End Item Supported Model: PBX-9502 and LX-17 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Holston Army Ammunition Plant						
						Facility Location: Kingsport, Tennessee						
A. Construction Cost	-	-	2.000	-	2.000	Facility Type (GOGO, GOCO, COCO): GOCO						
B. Equipment Cost	-	-	-	-	-	Principal Milestones Month & Year						
C. Equipment Installation Cost	-	-	-	-	-	Concept Design Complete:						
D. Contractor Support Cost	-	-	-	-	-	Final Design Complete:						
E. Corps of Engineers Support Cost	-	-	-	-	-	Initial/Final Project Award: Jun 2021						
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete: Dec 2022						
G. Total Facility Project Cost	-	-	-	-	-	Equipment Installation Complete:						
H. Other Costs	-	-	-	-	-	Prove Out Begins:						
Total Project Cost	-	-	2.000	-	2.000	Prove Out Complete:						
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$2.000 million supports modernization upgrades to the Trinitrobenzene (TATB) production facility at Holston Army Ammunition Plant. TATB is utilized in PBXN-9602 and LX-17 munitions. The facility was reactivated in 2010; these upgrades will provide for modern, state-of-the-art equipment and processes and allow an increase in annual production.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Replace Main Sewage **Project Number:** 5203410 **Project Category:**

End Item Supported Model: Artillery, Mortars, Demolitions, Tank, 40mm Ammo and Missiles **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	-	8.790	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Aug 2020 Construction Complete: Aug 2022 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	-	8.790	-	-	-								
Related Projects													
							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$8.790 million supports replacement of the main sewage treatment system at Iowa Army Ammunition Plant. The existing treatment facility was constructed in the 1940s and has exceeded its useful life. This effort will ensure the Plant's treatment facility achieves state and federal environmental compliance. This effort will construct a right-sized treatment facility and integrate state-of-the-art technology to improve energy efficiency and reduce operational costs.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Critical Bridge Repair **Project Number:** 5193536 **Project Category:**

End Item Supported Model: Artillery, Mortars, Demolitions, Tank, 40mm Ammo and Missiles **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO																			
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2019 Construction Complete: Mar 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 10%;">Project Number</th> <th style="width: 40%;">Title</th> <th style="width: 10%;">FY & Appn</th> <th style="width: 10%;">Value <i>(\$ M)</i></th> <th style="width: 10%;">Facing</th> <th style="width: 10%;">Start Date</th> <th style="width: 10%;">Compl Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>					Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date							
Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date							Compl Date													
B. Equipment Cost	-	-	-	-	-																				
C. Equipment Installation Cost	-	-	-	-	-																				
D. Contractor Support Cost	-	-	-	-	-																				
E. Corps of Engineers Support Cost	-	-	-	-	-																				
F. Other In-House Support Cost	-	-	-	-	-																				
G. Total Facility Project Cost	-	-	-	-	-																				
H. Other Costs	0.225	-	-	-	-																				
Total Project Cost	0.225	-	-	-	-																				

Narrative Explanation:
 Procurement dollars in the amount of \$0.225 million supports replacement of bridge H-11 at Iowa Army Ammunition Plant. Bridge H-11 provides access to yard E which is the primary yard in support of production. The bridge was installed in 1945 and experiences significant defects, including rust and corrosion on railings, an unsupported post base, corroded and delaminated bearing plates. The new bridge shall comply with American Association of State Highway and Transportation Officials (ASSHTO) and Iowa Department of Transportation standards.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Central Fire Alarm Reporting System, Phase 2 **Project Number:** 5193692 **Project Category:**

End Item Supported Model: Artillery, Mortars, C4 Extrusion, 40mm **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
						Principal Milestones						Month & Year
A. Construction Cost	-	-	-	-	-	Concept Design Complete:						
B. Equipment Cost	-	-	-	-	-	Final Design Complete:						
C. Equipment Installation Cost	-	-	-	-	-	Initial/Final Project Award:						Jun 2019
D. Contractor Support Cost	-	-	-	-	-	Construction Complete:						
E. Corps of Engineers Support Cost	-	-	-	-	-	Equipment Installation Complete:						Nov 2020
F. Other In-House Support Cost	-	-	-	-	-	Prove Out Begins:						
G. Total Facility Project Cost	-	-	-	-	-	Prove Out Complete:						
H. Other Costs	0.279	-	-	-	-							
Total Project Cost	0.279	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$0.279 million supports second phase to modernize the central fire alarm reporting system at Iowa Army Ammunition Plant (AAP). Effort will procure and install equipment for alerting personnel of a fire event or faulty conditions in thirty buildings. Project will ensure Iowa AAP maintains compliance with applicable fire alarm and reporting system regulations.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Roadway Mod Improvements (Roads A & C) **Project Number:** 5203745 **Project Category:**

End Item Supported Model: 40mm, Artillery, Mortar, Tank **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	6.300	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Mar 2020 Construction Complete: Dec 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	6.300	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$6.300 million supports facilities and maintenance efforts to Roads A & C at Iowa Army Ammunition Plant (AAP). These roads have deteriorated to a condition in which routine maintenance is no longer economically feasible. Effort will rehabilitate approximately 5 miles of roadways. The rehabilitation of these roads will ensure safe travel of explosive laden trucks and maintain continuity of 40mm, artillery and mortar load, assemble and pack (LAP) operations at Iowa AAP.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Security Automation **Project Number:** 5193788 **Project Category:**

End Item Supported Model: Artillery, Mortars, Demolitions, Tank, 40mm Ammo and Missiles **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Mar 2020 Initial/Final Project Award: Sep 2019 Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	0.072	-	-	-	-							
Total Project Cost	0.072	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$0.072 million supports evaluation of a new automated security system at Iowa Army Ammunition Plant. The existing security program relies on stationary guard support for production line gates and roving security patrols. A new, modernized automated system will include security cameras, proximity badge scanners, remote monitoring, and automatic gates. This effort will reduce the number of security personnel, reduce overhead costs, increase security capability, and improve safety management program.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Rail System Upgrades **Project Number:** 5193794 **Project Category:**

End Item Supported Model: 40mm, Artillery, Mortars **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	8.777	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Apr 2019 / Sep 2019 Construction Complete: Dec 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	8.777	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$8.777 million supports additional upgrades to rail tracks in storage yards on the eastern portion of Iowa Army Ammunition Plant. A 2014 rail inspection identified several critical deficiencies and deterioration of trackage and culverts. This facilities and maintenance effort will assure continued viability of the installation rail system for the transport of raw production materials and finished production. Rail systems supports 40mm, as well as 60mm, 81mm, and 120mm mortars production.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10	P-1 Line Item Number / Title: 0572EP1000 / Industrial Facilities
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Project Title: IAAAP Footprint Reduction - Long Range Precision Artillery Production Facility	Project Number: 5XX5030	Project Category:
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End Item Supported Model: Mortars, Artillery	Annual Capacity Before / After (1-8-5): /
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Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	105.000	-	105.000	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Oct 2020 Initial/Final Project Award: Sep 2019 / Jun 2021 Construction Complete: Jan 2023 Equipment Installation Complete: Jan 2024 Prove Out Begins: Feb 2024 Prove Out Complete: Jul 2024						
B. Equipment Cost	-	-	25.000	-	25.000							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	11.219	-	5.600	-	5.600	Related Projects						
Total Project Cost	11.219	-	135.600	-	135.600							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$135.600 million supports construction of an artillery production facility at Iowa Army Ammunition Plant. This effort reduces footprint of artillery and mortar melt pour process line production operations. The existing production facilities provide low rate, labor-intensive batch production operations with minimal process controls. The facility contains aging equipment and infrastructure and cannot meet production capacity requirements for load operations of insensitive munitions. The new artillery production facility will achieve efficient manufacturing operations, improve quality control, and allow for production of next generation artillery, while being capable of scaling capacity for both peace and war production requirements.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Distributed Gas Boiler Systems **Project Number:** 5205033 **Project Category:**

End Item Supported Model: Artillery, Mortars, Demolitions, Tank, 40mm Ammo and Missiles **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	-	9.500	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Apr 2020 / Aug 2022 Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	-	9.500	-	-	-								
Related Projects							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$9.500 million supports additional modernization upgrades to the distributed gas boiler systems at Iowa Army Ammunition Plant (AAP). This phase will install right-sized capacity package boilers and utility building structures to service production lines 1, 4A, 4B, mechanical, roundhouse, and laundry facilities at Iowa AAP. These boilers will enable the decommissioning of the coal-fired heating plant and will meet compliance with Maximum Achievable Control Technology (MACT) environmental standards. Additionally, the de-centralized boiler systems will reduce energy and water requirements.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Storage Yard Magazines Mod Upgrades **Project Number:** 5205034 **Project Category:**

End Item Supported Model: Artillery, Mortars, C4 Extrusion, Tank Ammunition, 40mm **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	-	3.186	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2020 Construction Complete: Jun 2022 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects						
B. Equipment Cost	-	-	-	-	-		Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	-	3.186	-	-	-								

Narrative Explanation:
 Procurement dollars in the amount of \$3.186 million supports modernization upgrades to the storage yard magazines at Iowa Army Ammunition Plant. The existing magazines were constructed in the 1940s. The magazines are deteriorating and routine maintenance is no longer economically viable. This effort will rehabilitate storage magazines, extend the useful life and improve access to rail and trailers.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Plant Wide Telecommunication Systems Upgrade **Project Number:** 5XX5042 **Project Category:**

End Item Supported Model: Artillery, Mortars, Demolitions, Tank, 40mm Ammo and Missiles **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	0.248	4.000	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Aug 2019 / May 2020 Construction Complete: Nov 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	0.248	4.000	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$4.000 million supports telecommunication upgrades at Iowa Army Ammunition Plant. The current telephone system was installed over forty years ago and experiences age deterioration and communication failures. The system supports production, fire and emergency communication requirements. This project will replace the aging telephone cables and associated equipment, and it will install emergency power generator with automatic transfer switching capability.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Centralized Solid Waste Processing **Project Number:** 5XX5119 **Project Category:**

End Item Supported Model: Artillery, Mortars, Demolitions, Tank, 40mm Ammo and Missiles **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	4.075	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Jul 2020 Initial/Final Project Award: Jan 2019 / Jun 2020 Construction Complete: May 2022 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	0.265	-	-	-	-	Related Projects						
Total Project Cost	0.265	4.075	-	-	-							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$4.075 million supports modernization of the centralized solid waste processing operations at Iowa Army Ammunition Plant (AAP). The Iowa AAP existing recycling and disposal operations are spread across several areas of the Plant. Due to aging and deteriorated conditions, the Plant has received several environmental violations in the last three years. The new, modernized processing center will increase waste diversion rates, reduce operations costs and eliminate risk of environmental violations from existing facilities.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: 40MM High Velocity Grenade Defuze & Refuze **Project Number:** 5215121 **Project Category:**

End Item Supported Model: 40mm **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	1.125	-	1.125	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: May 2021 Initial/Final Project Award: Dec 2020 Construction Complete: Aug 2021 Equipment Installation Complete: Sep 2021 Prove Out Begins: Oct 2021 Prove Out Complete: Feb 2022						
B. Equipment Cost	-	-	0.635	-	0.635							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	1.760	-	1.760							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$1.760 million supports modernization upgrades to defuze and refuze 40mm high velocity grenades at Iowa Army Ammunition Plant. This effort will allow the Army to upgrade legacy M549 fuzes to a more modern M549A1 PD fuze. Effort will also avoid costly demilitarization expenses.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Automate M112 Bagging Operations **Project Number:** 5205122 **Project Category:**

End Item Supported Model: M112 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Aug 2020 Construction Complete: Dec 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	1.710	-	-	-							
Total Project Cost	-	1.710	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$1.710 million supports development and installation of automated bagging operations of M112 at Iowa Army Ammunition Plant. Effort will install an alternate bag for M112 demolition block production and install automated equipment for packaging the C4 pellet into the new bag. The existing process is labor intensive and lengthy. The new process will eliminate rejects and reduce packaging costs.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Power Factor Capacitors **Project Number:** 5195123 **Project Category:**

End Item Supported Model: Artillery, Mortars, C4 Extrusion, Tank Ammunition, 40mm **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2019 / Jan 2020 Construction Complete: May 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	0.097	-	-	-	-							
Total Project Cost	0.097	-	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$0.097 million supports installation of power factor capacitors at Iowa Army Ammunition Plant. Effort will install a power factor bank and capacitors at various locations throughout the plant to reduce electrical demand and extend the equipment useful life. Effort will reduce production overhead costs.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Design & Construct New Metrology Lab **Project Number:** 5215125 **Project Category:**

End Item Supported Model: Artillery, Mine Clearing Line Charge (MICLIC), Tank, 40MM **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	3.610	-	3.610	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Aug 2021 Initial/Final Project Award: May 2021 Construction Complete: Sep 2022 Equipment Installation Complete: Sep 2022 Prove Out Begins: Oct 2022 Prove Out Complete: Mar 2023						
B. Equipment Cost	-	-	1.250	-	1.250							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	0.540	-	0.540							
Total Project Cost	-	-	5.400	-	5.400	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$5.400 million supports design and construction of a facility housing a new metrology and plastics material lab at Iowa Army Ammunition Plant. The existing metrology lab was constructed in early 1960's for gage and measurement analyses to support production operations. Smaller precision-manufactured parts require tighter tolerances and increased reliability. The new facility will reduce inspection cycle time, improved throughput and analyze large amounts of dimensional data to reduce production costs. The new facility will be approximately 5,800 square feet and will also contain new tool and die operations. This effort also includes associated infrastructure support upgrades. This is a new start.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: HVAC Upgrades, Line 1 **Project Number:** 5195215 **Project Category:**

End Item Supported Model: 40MM, M112 and MICLIC **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	0.346	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2019 / Sep 2019 Construction Complete: Feb 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	0.346	-	-	-	-								
							Related Projects						
							Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$0.346 support upgrades to the heating, ventilation, and air conditioning (HVAC) system in Line 1 at Iowa Army Ammunition Plant. The existing system was installed in 1968. The system failed in October 2018 and is currently inoperable. Repair efforts are no longer viable due to parts obsolescence. This project will replace and upgrade the entire HVAC system and related infrastructure support requirements.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Improve 40mm Grenade & Spitback Pressing **Project Number:** 5205304 **Project Category:**

End Item Supported Model: 40mm **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Apr 2020 Construction Complete: Nov 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	4.800	-	-	-							
Total Project Cost	-	4.800	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$4.800 million supports modernization improvements and relocation of pressing operations at Iowa Army Ammunition Plant. During a recent safety site plan review, the existing facilities that house the spitback pressing process lack sufficient production load limit requirements. This facilities and maintenance effort will acquire and install new production presses, increase efficiencies and improve safety.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10	P-1 Line Item Number / Title: 0572EP1000 / Industrial Facilities
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Project Title: Small Caliber Modernization, Next Generation Squad Weapon Ammunition facility	Project Number: 5XX3356	Project Category:
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End Item Supported Model: .50 Cal (all types except SLAP-T), 5.56mm, 7.62mm, 6.8mm	Annual Capacity Before / After (1-8-5): /
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Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO																																																					
A. Construction Cost	13.436	-	7.500	-	7.500	<table border="0" style="width: 100%;"> <tr> <td colspan="3">Principal Milestones</td> <td colspan="3">Month & Year</td> </tr> <tr> <td colspan="3">Concept Design Complete:</td> <td colspan="3">Dec 2021</td> </tr> <tr> <td colspan="3">Final Design Complete:</td> <td colspan="3">Sep 2024</td> </tr> <tr> <td colspan="3">Initial/Final Project Award:</td> <td colspan="3">Dec 2017 / Jan 2021</td> </tr> <tr> <td colspan="3">Construction Complete:</td> <td colspan="3">Sep 2024</td> </tr> <tr> <td colspan="3">Equipment Installation Complete:</td> <td colspan="3">Sep 2024</td> </tr> <tr> <td colspan="3">Prove Out Begins:</td> <td colspan="3">Oct 2024</td> </tr> <tr> <td colspan="3">Prove Out Complete:</td> <td colspan="3">Sep 2025</td> </tr> </table>						Principal Milestones			Month & Year			Concept Design Complete:			Dec 2021			Final Design Complete:			Sep 2024			Initial/Final Project Award:			Dec 2017 / Jan 2021			Construction Complete:			Sep 2024			Equipment Installation Complete:			Sep 2024			Prove Out Begins:			Oct 2024			Prove Out Complete:			Sep 2025		
Principal Milestones			Month & Year																																																								
Concept Design Complete:			Dec 2021																																																								
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Initial/Final Project Award:			Dec 2017 / Jan 2021																																																								
Construction Complete:			Sep 2024																																																								
Equipment Installation Complete:			Sep 2024																																																								
Prove Out Begins:			Oct 2024																																																								
Prove Out Complete:			Sep 2025																																																								
B. Equipment Cost	-	-	25.000	-	25.000																																																						
C. Equipment Installation Cost	-	-	3.500	-	3.500																																																						
D. Contractor Support Cost	-	-	-	-	-																																																						
E. Corps of Engineers Support Cost	3.600	6.001	4.000	-	4.000																																																						
F. Other In-House Support Cost	-	-	-	-	-																																																						
G. Total Facility Project Cost	-	-	-	-	-																																																						
H. Other Costs	9.472	33.999	-	-	-																																																						
Total Project Cost	26.508	40.000	40.000	-	40.000																																																						
						Related Projects																																																					
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date																																															

Narrative Explanation:
 Procurement dollars in the amount of \$40.000 million supports modernization improvements in small caliber ammunition manufacturing at Lake City Army Ammunition Plant (AAP). Project includes sixty-five percent design efforts to support the Next Generation Squad Weapon (NGSW) Ammunition production facility at Lake City AAP. Joint Program Executive Office (JPEO) Armaments and Ammunition is the agency lead for the development of a new squad weapon ammunition round to increase soldier lethality. Lake City AAP was identified as the production site for the NGSW round due to its existing ammunition production support infrastructure and its ability to retain highly qualified, expert small caliber ammunition manufacturing personnel. The project also establishes a Prototype Energetic Center (PEC) at Lake City AAP to conduct manufacturing studies and testing to strengthen the new ammunition round effectiveness. The project objective is to meet full rate production of the NSGW round by FY 2025.

FY 2021 Base procurement dollars in the amount of \$40.000 million supports modernization, purchase and installation of equipment for the NGSW Ammunition facility at Lake City AAP. The facility will be capable of producing three new, 6.8mm NGSW ammunition rounds that will provide munitions overmatch for the joint warfighter. Effort includes facility construction, infrastructure improvements, and equipment procurement, as well as engineering and project management support from the Corps of Engineers.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Bldg 45 Fire Sprinkler Lines **Project Number:** 5193432 **Project Category:**

End Item Supported Model: 20mm, 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	0.411	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Feb 2019 Construction Complete: Mar 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	0.411	-	-	-	-								
							Related Projects						
							Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$0.411 million supports modernization upgrades to fire sprinkler lines for Building 45 at Lake City Army Ammunition Plant. Building 45 supports outdoor range testing of small caliber ammunition. The existing fire suppression system lacks an adequate main water supply line. This project will ensure Building 45 maintains National Fire Protection Association fire protection codes for water pressure and volume and prevents production interruptions.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Primer Assembly Wing, Building 35, HVAC (Construct) **Project Number:** 5213459 **Project Category:**

End Item Supported Model: 20mm, 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO				
A. Construction Cost	-	-	1.100	-	1.100	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Mar 2020 Initial/Final Project Award: Feb 2021 Construction Complete: Aug 2022 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:				
B. Equipment Cost	-	-	-	-	-					
C. Equipment Installation Cost	-	-	-	-	-					
D. Contractor Support Cost	-	-	-	-	-					
E. Corps of Engineers Support Cost	-	-	-	-	-					
F. Other In-House Support Cost	-	-	-	-	-					
G. Total Facility Project Cost	-	-	-	-	-					
H. Other Costs	-	-	-	-	-					
Total Project Cost	-	-	1.100	-	1.100					
Related Projects										
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date			

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$1.100 million supports facilities and modernization upgrades to the heating, ventilation and air conditioning (HVAC) throughout the primer assembly wing in Building 35 at Lake City Army Ammunition Plant. The existing HVAC system was installed in the early 1970's and operates with antiquated pneumatic controls and compressors utilized phased-out refrigerant. The system lacks proper filtration and it has far exceeded its life expectancy. Proper temperature and conditioned air is important in producing consistent, high quality primers for 5.56mm, 7.62mm, and .50 cal, as well and helping to maintain employee health and alertness while handling explosives. This effort will also install modular air handler with filtration, reheat, humidification, and monitoring and alarming tie-ins to the plant-wide Metasys Building Management Systems.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Covered Walkways in Explosives Area **Project Number:** 5193619 **Project Category:**

End Item Supported Model: 20mm, 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	4.104	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Mar 2019 Construction Complete: Mar 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	4.104	-	-	-	-								
Related Projects							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date
<p>Narrative Explanation: Procurement dollars in the amount of \$4.104 million support installation of covered walkways in explosives area at Lake City Army Ammunition Plant. The project will provide covered walkways between all explosive area manufacturing buildings in order to prevent employee exposure to inclement weather while transporting explosives. The current manufacturing processes and equipment require substantial product movement across areas and buildings. This project will improve the quality of work environment for personnel and reduce risk of weather impact on explosive materials.</p>													

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: HVAC Modifications, Loading And Exhaust (Construct) **Project Number:** 5213652 **Project Category:**

End Item Supported Model: .50 Cal, 20mm, 7.62mm **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	22.340	-	22.340	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Mar 2019 Initial/Final Project Award: May 2021 Construction Complete: May 2022 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	22.340	-	22.340							
Related Projects						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$22.340 million support installation of HVAC supply and exhaust systems in the charging wing of Building 1 and Building 3 at Lake City Army Ammunition Plant. While upgrades to the HVAC systems in the production areas were completed in 2018, the existing HVAC systems in these wings are inefficient and have exceeded their life expectancy. This effort will provide reliable, efficient systems by providing temperature and humidity control for quality manufacturing of explosives. It will also provide for a safer environment in energetic areas.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Conceptual Design, Building 15 Boiler Plant **Project Number:** 5193718 **Project Category:**

End Item Supported Model: 20mm, 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Apr 2020 Initial/Final Project Award: Apr 2019 Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects						
B. Equipment Cost	-	-	-	-	-		Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	0.525	-	-	-	-								
Total Project Cost	0.525	-	-	-	-								

Narrative Explanation:
 Procurement dollars in the amount of \$0.525 million supports the conceptual design of a new centralized steam plan to replace the aging Building 15 steam plant at Lake City Army Ammunition Plant (AAP). This will reduce the energy footprint at Lake City AAP, increase efficiencies, maintain compliance with National Fire Protection Association safety standards, and support production of small caliber ammunition.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: IWTP Lagoon Liners & Filter Press **Project Number:** 5213792 **Project Category:**

End Item Supported Model: 20mm, 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	14.000	-	14.000	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2021 Construction Complete: Nov 2023 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	14.000	-	14.000							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$14.000 million support replacement of the industrial waste water treatment plant (IWTP) lagoon liners at Lake City Army Ammunition Plant. The liners prevent groundwater contamination from the IWTP. The existing liners were installed in the 1988 and have been repaired multiple times. The lagoons will be dewatered, cleaned, and the liners replaced in an alternating phased construction. Replacement is required to ensure environmental compliance.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Bldg 8 Indoor Firing Range, HVAC I&C (Design) **Project Number:** 5193796 **Project Category:**

End Item Supported Model: 20mm, 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: May 2020 Initial/Final Project Award: Apr 2019 Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects					
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	1.681	-	-	-	-							
Total Project Cost	1.681	-	-	-	-							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$1.681 million supports design effort to upgrade the instruments and controls of the heating, ventilation and air conditioning system in Building 8 at Lake City Army Ammunition Plant. Building 8 contains the indoor firing range. The HVAC system was installed in the early 1970s. The system has exceeded its useful life and does not comply with modern firing range design standards. The building also experiences contamination due to failing equipment, increasing risk of personnel health hazards. This project will include design of modular air handler with filtration, preheat, chilled glycol cooling, reheat, humidification, ductwork and ventilation.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Electrical Poles Mod Upgrades **Project Number:** 5193937 **Project Category:**

End Item Supported Model: 20mm, 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO																				
A. Construction Cost	2.488	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Mar 2019 Construction Complete: Mar 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 10%;">Project Number</th> <th style="width: 30%;">Title</th> <th style="width: 10%;">FY & Appn</th> <th style="width: 10%;">Value <i>(\$ M)</i></th> <th style="width: 10%;">Facing</th> <th style="width: 10%;">Start Date</th> <th style="width: 10%;">Compl Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date							
Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date								Compl Date													
B. Equipment Cost	-	-	-	-	-																					
C. Equipment Installation Cost	-	-	-	-	-																					
D. Contractor Support Cost	-	-	-	-	-																					
E. Corps of Engineers Support Cost	-	-	-	-	-																					
F. Other In-House Support Cost	-	-	-	-	-																					
G. Total Facility Project Cost	-	-	-	-	-																					
H. Other Costs	-	-	-	-	-																					
Total Project Cost	2.488	-	-	-	-																					

Narrative Explanation:
 Procurement dollars in the amount of \$2.488 million supports modernization upgrades and replacement of deteriorated electrical poles at Lake City Army Ammunition Plant. A 2015 study conducted by the US Army Corps of Engineers identified a list of approximately 188 wooden utility poles for replacement. These poles have now exceeded their useful life. The poles are required to maintain production capabilities for small caliber ammunition.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Bldgs 7, 12B, 93 Roof Replacement **Project Number:** 5195007 **Project Category:**

End Item Supported Model: 20mm, 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	2.258	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2019 Construction Complete: May 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	2.258	-	-	-	-								
Related Projects							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the \$2.258 million supports the modernization upgrades and replacement of roofs on Buildings 7, 12B (Industrial Waste Treatment Plant) and 93 (production maintenance operations) at Lake City Army Ammunition Plant. The existing roofs are at the end of their service life and experience frequent leaks. Several leaks are in close proximity to electrical infrastructure, posing a safety risk to personnel.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Utility Systems Protection **Project Number:** 5215025 **Project Category:**

End Item Supported Model: 20mm, 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	0.700	-	0.700	Principal Milestones Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2021 Construction Complete: Mar 2023 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Month & Year					
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	0.700	-	0.700							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$0.700 million supports modernization upgrades to the manufacturing facility utility systems at Lake City Army Ammunition Plant. This effort will protect and secure existing utilities (compressed air, natural gas, water, and electrical) from interruptions or damage to structures.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: B50 Fire Pump Replacement **Project Number:** 5195138 **Project Category:**

End Item Supported Model: 20mm, 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	2.866	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2019 Construction Complete: May 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	2.866	-	-	-	-								
Related Projects							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$2.866 million supports the fire pump replacement in Building 50 at Lake City Army Ammunition Plant. Effort replaces two deficient fire pumps and their respective diesel engines in Building 50 as well as supporting structures such as pump valves and defective piping sections. Diesel engines? batteries, fuel tanks, and fuel piping will be removed, and a new diesel powered back-up generator will be installed.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Construct New Nitrocellulose (NC) Facility **Project Number:** 5192736 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	2.184	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Aug 2019 Construction Complete: Nov 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	2.184	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$2.184 million supports the effort to continue the modernization and construction of a new, right-sized facility to produce high quality Nitrocellulose (NC) at Radford Army Ammunition Plant. The current NC facility has exceeded its useful life and experienced as many as 70 failures in 12 months. The new facility efficiently address safety, environmental and production requirements. This phase includes design and construction of the deep foundations required for the new NC facility and construction of NC production train # 2.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Modernize Nitroglycerin (NG-2) Facility **Project Number:** 5193449 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions and MK90 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	8.553	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Mar 2019 / Oct 2019 Construction Complete: Dec 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	8.553	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$8.553 million supports additional phase of critical repairs and upgrades to the existing Nitroglycerin manufacturing facility (NG-2) area at Radford Army Ammunition Plant (AAP). Effort will ensure the facility is operational and does not impact solventless production requirement for MK90 deliveries. The existing facility, process and infrastructure is deteriorating and poses a production continuity risk and safety hazard to personnel. NG is manufactured at Radford AAP for use in solvent and solvent-less multi-base propellants including the MK90 grains.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Upgrade Water System, Fire Protection **Project Number:** 5203559 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	-	9.472	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2020 Construction Complete: Dec 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects						
B. Equipment Cost	-	-	-	-	-		Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	-	9.472	-	-	-								

Narrative Explanation:
 Procurement dollars in the amount of \$9.472 million supports modernization upgrades to the fire protection, water system at Radford Army Ammunition Plant (AAP). This effort will replace the existing deluge valves and Primac fire suppression system with a modern, effective fire protection system. The new system will also eliminate the explosively actuated Primac. Effort will maintain production continuity of propellants at Radford AAP. The new system will be a rapid response deluge system, engineered turnkey package consisting of all required flame detectors, electronic controls and high-speed deluge valves designed specifically for fire suppression and deflagration encountered in the energetic process industry. The new system will meet the National Fire Codes and Army Regulations for fire protection.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Barricade Replacement, Ph 1 **Project Number:** 5203567 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO																										
A. Construction Cost	-	9.400	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jul 2020 Construction Complete: Dec 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th align="center" colspan="7">Related Projects</th> </tr> <tr> <th style="width: 10%;">Project Number</th> <th style="width: 30%;">Title</th> <th style="width: 10%;">FY & Appn</th> <th style="width: 10%;">Value (\$ M)</th> <th style="width: 10%;">Facing</th> <th style="width: 10%;">Start Date</th> <th style="width: 10%;">Compl Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>					Related Projects							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date							
Related Projects																																
Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date							Compl Date																				
B. Equipment Cost	-	-	-	-	-																											
C. Equipment Installation Cost	-	-	-	-	-																											
D. Contractor Support Cost	-	-	-	-	-																											
E. Corps of Engineers Support Cost	-	-	-	-	-																											
F. Other In-House Support Cost	-	-	-	-	-																											
G. Total Facility Project Cost	-	-	-	-	-																											
H. Other Costs	-	-	-	-	-																											
Total Project Cost	-	9.400	-	-	-																											

Narrative Explanation:
 Procurement dollars in the amount of \$9.400 million supports replacement of barricades at Radford Army Ammunition Plant (AAP). This project will support the demolition and replacement of wooden barricades identified to support production at Radford AAP. Project will properly dispose of the wood, metal, fill dirt, and obsolete electrical components from each barricade demolished. Install foundations as needed and rebuild wooden barricades to current Corp of Engineers specifications.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Upgrade Facility Change Houses **Project Number:** 5193613 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	5.014	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2019 Construction Complete: Jun 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	5.014	-	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$5.014 million supports upgrades to facility changes houses at Radford Army Ammunition. Change houses are an integral part of employees quality of life at work. To help promote a quality work environment, restrooms, latrines and change houses should be kept in a sanitary and safe condition. This project will renovate and upgrade three change houses near the new Nitrocellulose (NC) and Nitroglycerin (NG) areas. Effort also includes associated infrastructure improvements including electrical, lighting, and water systems, and upgrades to the sewer system.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Lightning Protection, Production Areas, Ph 3 **Project Number:** 5203672 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	2.899	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jul 2020 Construction Complete: Dec 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	2.899	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$2.899 million supports upgrade and replacement of lightning protection system on approximately twenty-five production buildings at Radford Army Ammunition Plant (AAP). The upgrades will cover production buildings and storage magazines in areas of the plant that lack lightning protection systems or do not meet current standards. Buildings without lightning protection are susceptible to detonation and destruction due to lightning strikes. Project will allow Radford AAP to achieve Army and national compliance standards, including NFPA-780, DA PAM 385-64 and UL96, UL96A compliant and certifiable condition.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Combined EWI-CWP Facility, Construction **Project Number:** 5193723 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	103.340	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Aug 2019 / Jul 2021 Construction Complete: Sep 2023 Equipment Installation Complete: Sep 2023 Prove Out Begins: Oct 2023 Prove Out Complete: Aug 2024						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	8.900	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	2.000	-	-	-	-							
Total Project Cost	114.240	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:

Procurement dollars in the amount of \$114.240 million supports construction of a combined energetic waste incinerator (EWI) and contaminated waste processor (CWP) at Radford Army Ammunition Plant (AAP). Effort will allow a centralized, air-pollution controlled facility to handle all energetic waste and contaminated waste generated at Radford AAP. The existing EWI facility has exceeded its useful life. Radford AAP is the principal domestic source of propellants for small, medium and large caliber ammunition. The new facility is critical in maintaining production operations and maintaining compliance with federal and state regulations.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Water Intake Pump Upgrade (Building 407) **Project Number:** 5193741 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	17.789	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jul 2019 Construction Complete: Aug 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	17.789	-	-	-	-								
Related Projects							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$17.789 million supports upgrades to four intake pumps in Building 407 and the water distribution system, other process equipment and infrastructure at Radford Army Ammunition Plant (AAP). These upgrades provide a viable backup and continuous source of water for fire suppression, process water, drinking water and steam which greatly impact operations at Radford AAP. Radford AAP operates within a footprint of 4,000 acres which required modernized pumps and distribution lines for production and fire suppression to ensure production continuity.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Workplace Safety Upgrades, Ph 1 **Project Number:** 5203753 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	18.990	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2020 Construction Complete: Dec 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects					
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	18.990	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$18.990 million support modernization upgrades to improve safety measures and reduce risk of injury to personnel at Radford Army Ammunition Plant (AAP). This project will address major deficiencies in several production areas across numerous Radford AAP operations that will provide for a safer manufacturing environment for the entire plant. Efforts include replacement or repair of aging and deteriorated equipment as well as process enhancement measures to reduce safety risk.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Structural Repairs **Project Number:** 5195088 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	1.341	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2019 Construction Complete: Jul 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	1.341	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$1.341 million supports structural repair requirements within various production buildings at Radford Army Ammunition Plant (AAP). This modernization initiative seeks to improve the structural integrity of active facilities at Radford AAP. These facilities were constructed during the 1940s and have exceeded their expected life. Structural deficiencies are risks to personnel safety and continuity of Radford AAP's mission of propellant production.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: NC Solvent Slurry Transfer Line **Project Number:** 5205140 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	5.000	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Aug 2020 Construction Complete: Jun 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	5.000	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$5.000 million supports the design and installation of a solvent slurry transfer line at Radford Army Ammunition Plant. This effort will connect the new nitrocellulose (NC) facility to the solvent propellant manufacturing facility. The new line will receive and process the water-wet NC from the new NC facility to the Wringer House building. Effort will support the processing and production of eight million pounds per year of solvent base propellant. Effort will improve personnel safety, improve environmental controls and maintain production continuity of NC.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Solventless/Rocket Area, Prod Operations **Project Number:** 5205141 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	4.459	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Dec 2019 Construction Complete: Apr 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	4.459	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$4.459 million supports modernization efforts to sustain production operations of solventless propellant at Radford Army Ammunition Plant. Effort will stabilize the solventless areas, rocket and roll powder, to maintain production continuity. This effort includes replacement of critical equipment and identification assessment of corrective maintenance actions.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Solvent Propellant Facility Sustainment, Ph 1 **Project Number:** 5205145 **Project Category:**

End Item Supported Model: Propellants for Large, Medium, and Small Cal Munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	4.934	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2020 Construction Complete: Jun 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects					
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	4.934	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$4.934 million supports modernization and sustainment of the solvent propellant facility at Radford Army Ammunition Plant. The facility was constructed during the 1940s and has operated beyond its useful life. This effort will replace critical production equipment and infrastructure and provide assessment of future corrective actions. Effort is required to ensure production continuity of solvent propellants until a new, modernized facility is designed and constructed.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: 155MM XM Flexline Mod **Project Number:** 5205179 **Project Category:**

End Item Supported Model: 155MM munitions **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Scranton Army Ammunition Plant Facility Location: Scranton, Pennsylvania Facility Type (GOGO, GOCO, COCO): GOCO																									
A. Construction Cost	-	8.100	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2020 Construction Complete: Dec 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th align="center" colspan="6">Related Projects</th> </tr> <tr> <th style="width: 10%;">Project Number</th> <th style="width: 30%;">Title</th> <th style="width: 10%;">FY & Appn</th> <th style="width: 10%;">Value <i>(\$ M)</i></th> <th style="width: 10%;">Facing</th> <th style="width: 10%;">Start Date</th> <th style="width: 10%;">Compl Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>					Related Projects						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date							
Related Projects																															
Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date							Compl Date																			
B. Equipment Cost	-	-	-	-	-																										
C. Equipment Installation Cost	-	-	-	-	-																										
D. Contractor Support Cost	-	-	-	-	-																										
E. Corps of Engineers Support Cost	-	-	-	-	-																										
F. Other In-House Support Cost	-	-	-	-	-																										
G. Total Facility Project Cost	-	-	-	-	-																										
H. Other Costs	-	-	-	-	-																										
Total Project Cost	-	8.100	-	-	-																										

Narrative Explanation:
 Procurement dollars in the amount of \$8.100 million supports modernization upgrades to the 155MM XM flexline at Scranton Army Ammunition Plant. Upgrades are required to support future production requirements of the 155MM munitions family. The existing line has not been modernized in over ten years. These upgrades will increase production capacity, implement energy reduction measures and reduce operational costs.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Planning & Design in Support of Provision of Industrial Facilities **Project Number:** 5XX0000 **Project Category:**

End Item Supported Model: Multiple **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Various Army Ammunition Plants Facility Location: Various Army Ammunition Plants Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	10.433	105.097	65.624	-	65.624	Related Projects						
Total Project Cost	10.433	105.097	65.624	-	65.624							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$65.624 million supports various preliminary and final design efforts at Holston, Iowa, Lake City, and Radford Army Ammunition Plants (AAPs). Design efforts include, but are not limited to, at Lake City AAP, enhancement of small arms ammunition production operations, to include a new indoor range, and the design of a new automated, green primer facility and design of a indoor ballistic range, as well as design of a new contaminated waste plant. Funding also includes design efforts to upgrade and modernize the water intake process at Holston AAP.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Cyber Critical Infrastructure Risk Management (CIRM) Resiliency **Project Number:** 5XX5169 **Project Category:**

End Item Supported Model: Multiple **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Various Army Ammunition Plants Facility Location: Various Army Ammunition Plants Facility Type (GOGO, GOCO, COCO): GOCO														
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Dec 2019 / Aug 2020 Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:														
B. Equipment Cost	-	-	-	-	-															
C. Equipment Installation Cost	-	-	-	-	-															
D. Contractor Support Cost	-	-	-	-	-															
E. Corps of Engineers Support Cost	-	-	-	-	-															
F. Other In-House Support Cost	-	-	-	-	-															
G. Total Facility Project Cost	-	-	-	-	-															
H. Other Costs	1.186	8.814	-	-	-															
Total Project Cost	1.186	8.814	-	-	-															
						Related Projects														
						<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Project Number</th> <th style="width: 30%;">Title</th> <th style="width: 10%;">FY & Appn</th> <th style="width: 10%;">Value (\$ M)</th> <th style="width: 10%;">Facing</th> <th style="width: 10%;">Start Date</th> <th style="width: 10%;">Compl Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date							
Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date														

Narrative Explanation:
 Procurement dollars in the amount of \$8.814 million supports modernization upgrades to support Cyber Critical Infrastructure Risk Management (CIRM) Resiliency at various Army Ammunition Plants (AAP), including Holston and Radford AAP. Modernization effort will replace and upgrade existing industrial operations information technology and operational technology systems to ensure a cyber-secure environment. These systems include industrial control systems, Supervisory Control and Data Acquisition (SCADA) systems, distributed control systems, Programmable Logic Controllers (PLC), as well as standard IT systems.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10	P-1 Line Item Number / Title: 0572EP1000 / Industrial Facilities
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Project Title: Replace Test Instrumentation in Production Acceptance Testing (Ammunition)	Project Number: 5195060	Project Category:
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End Item Supported Model: Initial Production Acceptance & Product Improvements for Ammunition	Annual Capacity Before / After (1-8-5): /
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Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Yuma Proving Ground / Aberdeen Test Center Facility Location: Yuma, Arizona / Aberdeen, Maryland Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	1.458	-	-	-	-	Related Projects						
Total Project Cost	1.458	-	-	-	-							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$1.458 million continues to support test mission activities at Aberdeen Test Center (ATC) and Yuma Test Center (YTC).

 Supports the procurement of ammunition/weapons components including gun mounts, gun tubes, breech assemblies, and other main weapon system components. These components are required to support proof and acceptance testing at ATC and Yuma Test Center YTC. Without these components, the Army will be unable to conduct the testing required to accept ammunition end items into its inventory and to mitigate operational risk due to ammunition shortfalls across the Army.

 At ATC, continues replacement and procurement for Weapon and Weapon Components which have experienced wear and tear during repetitive testing of production ammunition items. Typical purchases include: rifle/carbine/machine gun barrels, receivers, and parts; large caliber barrels; small and medium caliber Mann-type test barrels, mortar barrels and bipod/baseplates. Timely replacement of worn or unserviceable weapons/components will permit test execution without delays for acquisition of supporting equipment.

 At YTC, procures Ammo Components to continue support Production Acceptance Test (PAT) of artillery and mortar ammunition components at YTC throughout the year. Also procures replacement parts for large and small caliber direct fire weapon systems for production based support, which will improve weapon reliability and reduce potential testing downtime if sudden repairs are needed.

 This project increases test efficiencies and decreases costs and risks to Army Program Managers.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Maintenance of Inactive Facilities **Project Number:** 5XX4073 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Maintenance of Inactive Facilities Facility Location: Various AAPs Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Dec 2020 / Apr 2021 Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	1.780	6.461	5.195	-	5.195							
Total Project Cost	1.780	6.461	5.195	-	5.195							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount \$5.195 million supports the care and maintenance of laid-away equipment and facilities at active and inactive ammunition installations.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Layaway Of Industrial Facilities **Project Number:** 5XX8000 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Facility Name: Layaway Of Industrial Facilities Facility Location: Various AAPs Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Nov 2020 / May 2021 Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	18.002	11.524	10.105	-	10.105							
Total Project Cost	18.002	11.524	10.105	-	10.105	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$10.105 million supports the protection and preservation of industrial facilities at active and inactive Army ammunition installations and equipment that are no longer required for current production but must be retained for future peacetime or emergency production needs. Funds support the decontamination and demolition of excess production equipment and facilities buildings at Radford and Milan Army Ammunition Plant and Pine Bluff Arsenal.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 02: Ammunition Production Base Support / BSA 10: Production Base Support	P-1 Line Item Number / Title: 4099EP1700 / Conventional Munitions Demilitarization
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3,200.624	148.690	202.512	235.112	-	235.112	239.463	252.355	254.442	256.983	-	4,790.181
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3,200.624	148.690	202.512	235.112	-	235.112	239.463	252.355	254.442	256.983	-	4,790.181
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3,200.624	148.690	202.512	235.112	-	235.112	239.463	252.355	254.442	256.983	-	4,790.181

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

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

Description:

The Conventional Munitions Demilitarization Program provides for the demilitarization (demil) and disposal of conventional ammunition and missiles that are unserviceable, obsolete, or excess to need for all Military Services per Department of Defense (DoD) Directive 5160.65 and DoD Instruction 5160.68. The program accomplishes demil using open burning/open detonation (OB/OD) processes or closed disposal technologies (CDT) with primary emphasis on resource recovery and recycling (R3). This program also provides for operations, technical support and services; packaging, crating, handling, and transportation (PCHT) of ammunition for demil projects at United States Army depots, plants and activities; commercial contracts that provide closed disposal technologies demil support and services and associated packaging, crating, handling, and transportation; and international operations, which include the European and Pacific Theaters.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 02: Ammunition Production Base Support / BSA 10: Production Base Support **P-1 Line Item Number / Title:** 4099EP1700 / Conventional Munitions Demilitarization

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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	EP1800 / Conventional Ammunition Demilitarization (SMCA)				- / 2,619.181	- / 136.903	- / 147.330	- / 161.346	- / -	- / 161.346
P-5	EP1801 / Other Non-Army Service Demil Items (non-SMCA)				- / 59.221	- / 1.680	- / 13.385	- / 14.589	- / -	- / 14.589
P-5	EP1802 / Army Missile Demilitarization				- / 487.543	- / 6.137	- / 37.235	- / 33.590	- / -	- / 33.590
P-5	EP1803 / Non-Army Missile Demilitarization				- / 34.679	- / 3.970	- / 4.562	- / 25.587	- / -	- / 25.587
P-40	Total Gross/Weapon System Cost				- / 3,200.624	- / 148.690	- / 202.512	- / 235.112	- / -	- / 235.112

*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 Base procurement dollars in the amount of \$235.112 million will support the demilitarization of conventional ammunition as well as missile and missile components (msl/comp) for all Military Services including transport of the munitions to their final disposition sites.

FY 2021 funds will support the United States the demilitarization and disposition of 38,911 tons of conventional ammunition and an additional 6,346 tons of missiles and missile components. The work is to be accomplished in both Continental United States (CONUS) and Outside the Continental United States (OCONUS). CONUS demil operations are performed by a combination of Government Owned, Government Operated (GOGO) depots, Government Owned, Contractor Operated (GOCO) depots as well as commercial contractors. OCONUS demil operations are performed at Demilitarization Facilities in Japan as well as commercial contractors in the European Union. Cost increases in the various categories of the P-5 Cost Analysis Forms reflect increases in quantities and tonnage of munitions being destroyed within those cost categories, except for transportation which reflects greater quantities of munitions being redistributed to sites having the ability to demilitarize and dispose them.

As of the end of November 2019, the Single Manager for Conventional Ammunition (SMCA) Resource, Recovery and Disposition Account (B5A) contained 373,062 tons of ammunition in storage: 344,004 tons of conventional ammunition and 29,058 tons of msl/comp. Reduction of the B5A account provides for more economical storage and distribution of ammunition for operational and training and improves military readiness.

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Exhibit P-5, Cost Analysis: PB 2021 Army						Date: February 2020		
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10			P-1 Line Item Number / Title: 4099EP1700 / Conventional Munitions Demilitarization			Item Number / Title [DODIC]: EP1800 / Conventional Ammunition Demilitarization (SMCA)		
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)			2,619.181	136.903	147.330	161.346	-	161.346
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			2,619.181	136.903	147.330	161.346	-	161.346
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			2,619.181	136.903	147.330	161.346	-	161.346
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>								
Initial Spares (\$ in Millions)			-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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 - Demilitarization Cost																		
WHITE PHOSPHORUS	-	-	87.666	-	-	4.900	-	-	4.131	-	-	6.833	-	-	-	-	-	6.833
DEMOLITION MATERIAL	-	-	1.530	-	-	1.021	-	-	0.278	-	-	1.147	-	-	-	-	-	1.147
HE DETONATORS/ BOOSTERS	-	-	2.750	-	-	0.444	-	-	0.508	-	-	2.773	-	-	-	-	-	2.773
HE BOMBS	-	-	47.670	-	-	-	-	-	3.097	-	-	-	-	-	-	-	-	-
HE CARTRIDGES	-	-	162.067	-	-	4.472	-	-	7.017	-	-	3.283	-	-	-	-	-	3.283
GRENADES	-	-	3.529	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HE DEPTH CHARGES	-	-	17.572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CLUSTER BOMBS/ ICM; ANTI-TANK & PERSONNEL	-	-	345.237	-	-	10.476	-	-	23.370	-	-	22.880	-	-	-	-	-	22.880
HE LAND MINES	-	-	86.327	-	-	1.371	-	-	3.781	-	-	-	-	-	-	-	-	-
INERT	-	-	35.718	-	-	2.546	-	-	0.411	-	-	2.577	-	-	-	-	-	2.577
MULTIPLE FAMILY	-	-	502.291	-	-	5.597	-	-	6.793	-	-	2.716	-	-	-	-	-	2.716
BULK HIGH EXPLOSIVES	-	-	35.985	-	-	54.264	-	-	10.000	-	-	4.411	-	-	-	-	-	4.411
PROPELLANT CHARGES/INCREMENT CHARGES	-	-	140.527	-	-	0.697	-	-	0.942	-	-	2.103	-	-	-	-	-	2.103
TARGET PRACTICES/ 40MM ANTI-AIRCRAFT	-	-	44.414	-	-	-	-	-	5.224	-	-	5.461	-	-	-	-	-	5.461
SMALL ARMS AMMO THRU 20MM	-	-	22.345	-	-	7.423	-	-	4.225	-	-	7.693	-	-	-	-	-	7.693

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10	P-1 Line Item Number / Title: 4099EP1700 / Conventional Munitions Demilitarization	Item Number / Title [DODIC]: EP1800 / Conventional Ammunition Demilitarization (SMCA)
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)
INCINERABLE MUNITIONS/ MISCELLANEOUS	-	-	68.826	-	-	-	-	-	-	-	-	11.458	-	-	-	-	-	11.458
FUZES	-	-	51.523	-	-	0.231	-	-	0.375	-	-	2.538	-	-	-	-	-	2.538
TRANSPORTATION	-	-	167.293	-	-	8.213	-	-	10.391	-	-	11.314	-	-	-	-	-	11.314
MUNITIONS CHARACTERIZATION	-	-	81.040	-	-	4.425	-	-	4.425	-	-	4.425	-	-	-	-	-	4.425
OCONUS DEMIL - EUCOM	-	-	46.184	-	-	0.580	-	-	0.580	-	-	0.580	-	-	-	-	-	0.580
OCONUS DEMIL - PACOM	-	-	10.346	-	-	0.220	-	-	0.220	-	-	0.220	-	-	-	-	-	0.220
CONTRACT - CONUS DEMIL	-	-	603.811	-	-	19.435	-	-	41.385	-	-	38.290	-	-	-	-	-	38.290
DU Cartridges	-	-	5.533	-	-	10.405	-	-	19.994	-	-	30.461	-	-	-	-	-	30.461
<i>Subtotal: Support - Demilitarization Cost</i>	-	-	2,570.184	-	-	136.720	-	-	147.147	-	-	161.163	-	-	-	-	-	161.163
Support - Program Management Cost																		
Government Management	-	-	48.997	-	-	0.183	-	-	0.183	-	-	0.183	-	-	-	-	-	0.183
<i>Subtotal: Support - Program Management Cost</i>	-	-	48.997	-	-	0.183	-	-	0.183	-	-	0.183	-	-	-	-	-	0.183
Gross/Weapon System Cost	-	-	2,619.181	-	-	136.903	-	-	147.330	-	-	161.346	-	-	-	-	-	161.346

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10	P-1 Line Item Number / Title: 4099EP1700 / Conventional Munitions Demilitarization	Item Number / Title [DODIC]: EP1801 / Other Non-Army Service Demil Items (non-SMCA)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	59.221	1.680	13.385	14.589	-	14.589
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	59.221	1.680	13.385	14.589	-	14.589
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	59.221	1.680	13.385	14.589	-	14.589

(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 - Demilitarization Cost																		
TORPEDOES	-	-	40.638	-	-	1.006	-	-	-	-	-	-	-	-	-	-	-	-
SONOBUOYS	-	-	1.730	-	-	0.674	-	-	0.924	-	-	1.250	-	-	-	-	-	1.250
CONTRACT - CONUS DEMIL	-	-	13.509	-	-	-	-	-	6.245	-	-	6.245	-	-	-	-	-	6.245
TRANSPORTATION	-	-	2.412	-	-	-	-	-	0.692	-	-	1.660	-	-	-	-	-	1.660
INCINERABLE MUNITIONS/ MISCELLANEOUS	-	-	0.932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HE BOMBS	-	-	-	-	-	-	-	-	-	-	-	2.477	-	-	-	-	-	2.477
CLUSTER BOMBS/ ICM; ANTI-TANK & PERSONNEL	-	-	-	-	-	-	-	-	5.524	-	-	2.957	-	-	-	-	-	2.957
<i>Subtotal: Support - Demilitarization Cost</i>	-	-	59.221	-	-	1.680	-	-	13.385	-	-	14.589	-	-	-	-	-	14.589
Gross/Weapon System Cost	-	-	59.221	-	-	1.680	-	-	13.385	-	-	14.589	-	-	-	-	-	14.589

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Exhibit P-5, Cost Analysis: PB 2021 Army					Date: February 2020				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10			P-1 Line Item Number / Title: 4099EP1700 / Conventional Munitions Demilitarization			Item Number / Title [DODIC]: EP1802 / Army Missile Demilitarization			
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)			487.543	6.137	37.235	33.590	-	-	33.590
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			487.543	6.137	37.235	33.590	-	-	33.590
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			487.543	6.137	37.235	33.590	-	-	33.590
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>									
Initial Spares (\$ in Millions)			-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in 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 - Demilitarization Cost																		
MULTIPLE LAUNCH ROCKET SYSTEM	-	-	227.985	-	-	3.042	-	-	7.975	-	-	7.910	-	-	-	-	-	7.910
ROCKET MOTORS	-	-	3.815	-	-	-	-	-	2.988	-	-	4.110	-	-	-	-	-	4.110
TOW CD/R3	-	-	41.578	-	-	0.265	-	-	0.173	-	-	0.885	-	-	-	-	-	0.885
HELLFIRE	-	-	0.532	-	-	0.048	-	-	0.085	-	-	0.048	-	-	-	-	-	0.048
STINGER	-	-	2.536	-	-	0.060	-	-	0.240	-	-	-	-	-	-	-	-	-
PATRIOT	-	-	1.826	-	-	-	-	-	0.440	-	-	0.917	-	-	-	-	-	0.917
HONEST JOHN	-	-	1.476	-	-	-	-	-	2.500	-	-	0.250	-	-	-	-	-	0.250
MISSILE COMPONENTS	-	-	67.966	-	-	0.196	-	-	2.563	-	-	2.015	-	-	-	-	-	2.015
HAWK MOTORS	-	-	3.290	-	-	0.107	-	-	0.840	-	-	0.429	-	-	-	-	-	0.429
DEMIL PROCESS IMPROVEMENTS	-	-	86.090	-	-	0.120	-	-	6.313	-	-	6.975	-	-	-	-	-	6.975
TRANSPORTATION	-	-	18.817	-	-	0.117	-	-	7.368	-	-	7.115	-	-	-	-	-	7.115
MULTIPLE FAMILY	-	-	-	-	-	-	-	-	2.885	-	-	0.465	-	-	-	-	-	0.465
Subtotal: Support - Demilitarization Cost	-	-	455.911	-	-	3.955	-	-	34.370	-	-	31.119	-	-	-	-	-	31.119
Support - Program Management Cost																		
Government Management	-	-	31.632	-	-	2.182	-	-	2.865	-	-	2.471	-	-	-	-	-	2.471
Subtotal: Support - Program Management Cost	-	-	31.632	-	-	2.182	-	-	2.865	-	-	2.471	-	-	-	-	-	2.471
Gross/Weapon System Cost	-	-	487.543	-	-	6.137	-	-	37.235	-	-	33.590	-	-	-	-	-	33.590

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Exhibit P-5, Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10	P-1 Line Item Number / Title: 4099EP1700 / Conventional Munitions Demilitarization	Item Number / Title [DODIC]: EP1802 / Army Missile Demilitarization
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:

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Exhibit P-5, Cost Analysis: PB 2021 Army						Date: February 2020		
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10			P-1 Line Item Number / Title: 4099EP1700 / Conventional Munitions Demilitarization			Item Number / Title [DODIC]: EP1803 / Non-Army Missile Demilitarization		
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 (<i>Units in Each</i>)			-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)			34.679	3.970	4.562	25.587	-	25.587
Less PY Advance Procurement (<i>\$ in Millions</i>)			-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)			34.679	3.970	4.562	25.587	-	25.587
Plus CY Advance Procurement (<i>\$ in Millions</i>)			-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)			34.679	3.970	4.562	25.587	-	25.587
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>								
Initial Spares (<i>\$ in Millions</i>)			-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)			-	-	-	-	-	-

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

Cost Elements	Prior Years			FY 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 - Demilitarization Cost																		
HE MISSILES	-	-	33.745	-	-	3.807	-	-	2.454	-	-	9.600	-	-	-	-	-	9.600
ROCKET MOTORS	-	-	0.750	-	-	-	-	-	1.050	-	-	3.900	-	-	-	-	-	3.900
MISSILE COMPONENTS	-	-	0.184	-	-	0.163	-	-	1.058	-	-	3.472	-	-	-	-	-	3.472
Demilitarization	-	-	-	-	-	-	-	-	-	-	-	8.615	-	-	-	-	-	8.615
<i>Subtotal: Support - Demilitarization Cost</i>	-	-	34.679	-	-	3.970	-	-	4.562	-	-	25.587	-	-	-	-	-	25.587
Gross/Weapon System Cost	-	-	34.679	-	-	3.970	-	-	4.562	-	-	25.587	-	-	-	-	-	25.587

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Exhibit P-40, Budget Line Item Justification: PB 2021 Army **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 02: Ammunition Production Base Support / BSA 10: Production Base Support	P-1 Line Item Number / Title: 4150EP2500 / ARMS Initiative
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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 (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	362.877	3.771	3.833	3.369	-	3.369	3.364	3.990	4.030	4.070	-	389.304
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	362.877	3.771	3.833	3.369	-	3.369	3.364	3.990	4.030	4.070	-	389.304
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	362.877	3.771	3.833	3.369	-	3.369	3.364	3.990	4.030	4.070	-	389.304

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

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

Description:

The Armament Retooling and Manufacturing Support (ARMS) program reuses idle capacity at active and inactive Government-Owned, Contractor-Operated (GOCO) Army Ammunition Plants and the GOCO Hawthorne Army Depot through commercialization. Congress enacted this program in the FY 1993 Defense Authorization Act (Public Law (PL) 102-484) and codified in FY 2000 (10 U.S.C. 7551-7555). ARMS resources are used for facility strategic reuse plans, marketing plans, building renovation and recapitalization, equipment purchase, relocation, or consolidation, as well as environmental baseline studies and site surveys to encourage commercial use of underutilized Army assets. The ARMS objectives include sustaining critical manufacturing capabilities and critical skills; reducing facility operating and maintenance costs; decreasing product cost; providing opportunities for small business; and accelerating private sector economic development, employment and investment. The ARMS program allows the Army to manage portions of the ammunition infrastructure as a commercial business. This management concept has allowed the Army to apply overhead costs across multiple commercial contracts to reduce operating costs.

Justification:

FY 2021 Base procurement dollars in the amount of \$3.907 million supports financial and marketing investments to attract revenue-producing tenants to locate on Government-Owned Contractor-Operated (GOCO) Army Ammunition Plants and the GOCO Hawthorne Army Depot. The ARMS program reduces Army cost of ownership and maintains critical munitions industrial base skills. Revenues collected will be utilized to reduce overhead and total annual operating costs, improve and maintain existing buildings for current tenants, and perform improvements to other vacant buildings to entice potential tenants.